

# GENERAL CATALOGUE 2018 - 2019

AUXILAB &  
ROGO-SAMPAIC

YOUR BIG LOGISTIC PLATFORM  
OF LABORATORY SUPPLIES  
AND EQUIPMENT

general use



beakers, flasks and other containers



volumetry



laboratory assemblies and tools



centrifuges



optical equipments



heating - cooling



measuring instruments



stirring



liquid handling



filtration and separation



didactic material



protection and safety



others



**AUXILAB S.L.****Material de laboratorio**  
Laboratory suppliesPol. Morea Norte Calle D Nave 6  
C.P. 31191 Beriain -Navarra-

T. +34 948 310 513

correo@auxilab.es  
www.auxilab.es23 rue Ampère - ZI de Villemilan  
91320 WISSOUS, FRANCET. +33(0)1 69 53 67 67  
T. +33(0)1 69 30 72 55rogosampalc@rogosampalc.com  
www.rogosampalc.com**THE GROUP**

Since its foundation in 1976, Auxilab has been devoted to production and distribution of laboratory supplies. The quality given to its products, to investment in R+D, its high qualified professionals and competitive prices have become this company a reference in the sector.

For more than 45 years Rogo-Sampaic has been a reference company for laboratory supplies distributors in France since it is a big logistic platform dedicated to import independent laboratory equipments and consumables.

In March 2011 Auxilab purchased the 100% of Rogo-Sampaic, which involved a noticeable development of both companies, by creating a stronger competence in distribution of laboratory equipments and consumables, thanks mainly to the following points:

- Increase of the catalogue product range up to 16.000 references.
- Increase of the capacity of stock (warehouse of 6.500 m2).
- Increase of the customer and supplier portfolio.
- Increase of the market share in Spanish and French markets.
- International coverage in more than 70 countries.
- Own trademarks such as Nahita, Nahita-Blue, Zuzi, Digipette, ENDO Glassware, ENDO Plasticware, ENDO Proteclab, Ura-Technic, RS Lab, RS-France and Ghaasel.
- Represented brands such as Kartell, Jipo, Simax, Glassco, Vitlab, Avignon Ceramic, Selecta, Socorex, RSG-Solingen, Saint-Gobain Performance Plastics, Agencinox, Gilac.
- Wide offer of products for sanitary, food, environmental, chemical and educational laboratories.
- Certified ISO 9001 by AENOR (since 1999).

**MISSION**

- The main mission of Auxilab/Rogo-Sampaic is to provide distributors with the best price/quality relationship in all their range of products and with reduced delivery time.
- To achieve the maximum satisfaction of customers; thus, one of our main targets is to offer an excellent technical and after-sales service.
- To offer customers a wide range of quality products at very competitive prices.
- The distribution of our products is made exclusively through authorized suppliers, which guarantees more proximity, service and warranty.

**POSITIONING**

Price and service are the base of Auxilab/Rogo-Sampaic philosophy.

Competitive advantages:

- Price: excellent price/quality relationship, to achieve the maximum profitability for our customers.
- Service: immediate delivery. Orders are delivered from our warehouse in 24/48 h.
- Stock: wide range of products in stock to assure a very low stockout rate.
- Logistics: high quality in service to customers, transport, inventory management, order processing.
- Technical assistance and after-sales service: qualified department that manages all our customers necessities.

**SERVICES**

The main target of Auxilab/Rogo-Sampaic is to offer an excellent service to customers. Thus, we bet on offering our customers an added value in all their purchases.

- Advice: we offer a complete and personalized advice during the whole purchase process. We recommend the best options and the most interesting products depending on particular necessities of each customer.
- Technical after-sales service: our qualified department of technical and after-sales service guarantees a fast response and assistance. We act fast and effectively, giving preference to customer necessities.

## OUR TRADEMARKS

The group Auxilab/Rogo-Sampaic manufactures and markets its products under its own trademarks, so you can be sure that all items in this catalogue have passed the strictest quality controls, arriving to its destination in optimum conditions:

NAHITA: basic laboratory equipment and basic supplies

NAHITA-BLUE: basic laboratory equipment and basic supplies

RS LAB: stirrers and heating

ENDOfglassware: glassware

ENDOfplasticware: plasticware

ENDOfproteclab: protection and safety products

DIGIPETTE: liquid handling

GHÄASEL: microscope slides

ZUZI: optical equipment

FILTRES RS: filter paper

RS FRANCE: microscope slides

URA TECHNIC: optical equipment



## REPRESENTED TRADEMARKS

We also distribute recognized standing trademarks. We offer a better service, increasing the range of products and giving the possibility of obtaining all kind of laboratory consumables.

The big effort made by Auxilab/ Rogo-Sampaic with the inclusion of these brands underlines our confidence in the sector and in the quality of the service we offer.

SOCOREX: Liquid handling of excellent accuracy

KARTELL: Plasticware manufactured with most advanced technology

JIPO: Technical porcelain of high quality

SIMAX: Glassware consumables with high resistance to sudden change in temperature

GLASSCO: Scientific glassware with ASTM Standards.

SAINT-GOBAIN PERFORMANCE PLASTICS: plastic, silicone and rubber products with very high quality, durability and resistance

UNIVET: protection glasses

PLUM: safety for your eyes

AVIGNON: porcelain of the best quality



INDEX  
OF CONTENTS

|                                      |                                                                                     |                |
|--------------------------------------|-------------------------------------------------------------------------------------|----------------|
| [01]                                 |  | Page 5 - 34    |
| GENERAL USE                          |                                                                                     |                |
| [02]                                 |  | Page 35 - 60   |
| BEAKERS, FLASKS AND OTHER CONTAINERS |                                                                                     |                |
| [03]                                 |  | Page 61 - 70   |
| VOLUMETRY                            |                                                                                     |                |
| [04]                                 |  | Page 71 - 96   |
| LABORATORY ASSEMBLIES AND TOOLS      |                                                                                     |                |
| [05]                                 |  | Page 97 - 108  |
| CENTRIFUGES                          |                                                                                     |                |
| [06]                                 |  | Page 109 - 148 |
| OPTICAL EQUIPMENTS                   |                                                                                     |                |
| [07]                                 |  | Page 149 - 156 |
| HEATING/COOLING                      |                                                                                     |                |
| [08]                                 |  | Page 157 - 182 |
| MEASURING INSTRUMENTS                |                                                                                     |                |
| [09]                                 |  | Page 183 - 204 |
| STIRRING                             |                                                                                     |                |
| [10]                                 |  | Page 205 - 212 |
| LIQUID HANDLING                      |                                                                                     |                |
| [11]                                 |  | Page 213 - 252 |
| FILTRATION AND SEPARATION            |                                                                                     |                |
| [12]                                 |  | Page 253 - 288 |
| DIDACTIC MATERIAL                    |                                                                                     |                |
| [13]                                 |  | Page 289 - 296 |
| PROTECTION AND SAFETY                |                                                                                     |                |
| [14]                                 |  | Page 297 - 314 |
| OTHERS                               |                                                                                     |                |







## [B] INDEX OF CONTENTS GENERAL USE

|                                                |           |                                     |           |
|------------------------------------------------|-----------|-------------------------------------|-----------|
| <b>[BB] Mortars.....</b>                       | <b>06</b> | <b>[BM] Stoppers .....</b>          | <b>20</b> |
| BBB - With pestle, glazed, porcelain .....     | 06        | BMC - Glass .....                   | 20        |
| BBC - With pestle, not glazed, porcelain ..... | 06        | BMD - Conical shape, rubber .....   | 21        |
| BBD - With pestle, glass .....                 | 06        | BMH - Perforated, rubber .....      | 21        |
| BBF - With pestle, agate .....                 | 06        | BML - Borers .....                  | 21        |
| BBN - Pestles, standard shape, porcelain ..... | 07        | <b>[BP] Microscopy.....</b>         | <b>22</b> |
| BBQ - Pestles, glass.....                      | 07        | BPB - Slides .....                  | 22        |
| BBR - Pestles, agate .....                     | 07        | BPD - Cover slides.....             | 24        |
| BBT - Jars f/mills, agate .....                | 07        | BPG - Slide storage.....            | 25        |
| BBV - Balls.....                               | 08        | BPJ - Embedding .....               | 26        |
| <b>[BD] Dessicators .....</b>                  | <b>08</b> | BPL - Staining.....                 | 27        |
| BDB - With stopcock .....                      | 08        | <b>[BR] Microbiology.....</b>       | <b>29</b> |
| BDD - Without stopcock.....                    | 09        | BRB - Petri dishes .....            | 29        |
| BDG - Disks.....                               | 09        | BRG - Inoculating loops .....       | 29        |
| BDL - Accessories.....                         | 09        | BRJ - Counters.....                 | 30        |
| <b>[BG] Tubes .....</b>                        | <b>10</b> | <b>[BT] Cuvettes and trays.....</b> | <b>30</b> |
| BGB - Test tube.....                           | 10        | BTB - Cuvettes, plastic.....        | 30        |
| BGD - Centrifuge tubes .....                   | 11        | BTD - Cuvettes, glass.....          | 31        |
| BGG - Culture tubes.....                       | 11        | BTQ - Boxes, SS.....                | 32        |
| BGJ - U tubes .....                            | 12        | BTS - Baskets, SS .....             | 32        |
| BGL - Tube caps.....                           | 12        | <b>[BY] Others.....</b>             | <b>32</b> |
| BGN - Microtubes.....                          | 13        | BYF - Sample transport/Storage..... | 32        |
| BGV - Others .....                             | 13        |                                     |           |
| <b>[BJ] Racks and supports .....</b>           | <b>14</b> |                                     |           |
| BJB - For tubes, plastic .....                 | 14        |                                     |           |
| BJD - For tubes, metal .....                   | 16        |                                     |           |
| BJJ - For tubes, PVC.....                      | 17        |                                     |           |
| BJL - For microtubes.....                      | 18        |                                     |           |
| BJN - For pipettes .....                       | 19        |                                     |           |
| BJQ - For flasks.....                          | 19        |                                     |           |
| BJS - For funnels.....                         | 20        |                                     |           |

TRADEMARKS:



**BBB - With pestle, glazed, porcelain**

- 1 | Ideal for grinding and mixing substances of low hardness.
- 2 | Glazed outside and inside, wide and stable base.
- 3 | With spout and pestle.

| Code   | Capacity | Ø      | Pestle lenght |
|--------|----------|--------|---------------|
| BBB001 | 150 mL   | 100 mm | 150 mm        |
| BBB002 | 300 mL   | 130 mm | 330 mm        |
| BBB003 | 500 mL   | 150 mm | 500 mm        |
| BBB004 | 1000 mL  | 210 mm | 1000 mm       |

**BBC - With pestle, not glazed, porcelain**

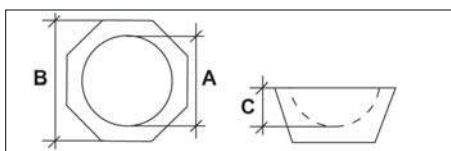
- 1 | Ideal for grinding and mixing substances of low hardness.
- 2 | Non glazed outside and inside,
- 3 | With spout and pestle.

| Code   | Capacity | Ø      | Pestle lenght |
|--------|----------|--------|---------------|
| BBC001 | 25 mL    | 60 mm  | 65 mm         |
| BBC002 | 50 mL    | 80 mm  | 90 mm         |
| BBC003 | 100 mL   | 100 mm | 110 mm        |
| BBC004 | 300 mL   | 130 mm | 125 mm        |
| BBC005 | 500 mL   | 160 mm | 145 mm        |
| BBC006 | 1000 mL  | 216 mm | 215 mm        |
| BBC007 | 2000 mL  | 254 mm | 245 mm        |

**BBD - With pestle, glass**

- 1 | Wide and stable base, polished inside and outside.
- 2 | With spout.
- 3 | Included glass pestle with one rough, ball-shaped end.

| Code   | Capacity | Ø      | Pestle lenght |
|--------|----------|--------|---------------|
| BBD001 | 90 mL    | 60 mm  | 90 mm         |
| BBD002 | 100 mL   | 80 mm  | 105 mm        |
| BBD003 | 200 mL   | 100 mm | 60 mm         |
| BBD004 | 400 mL   | 120 mm | 130 mm        |
| BBD005 | 900 mL   | 150 mm | 180 mm        |

**BBF - With pestle, agate**

- 1 | Supplied with pestle.
- 2 | Polished inside and outside. The external surface is uniformly sanding.
- 3 | Ideal for grinding and mixing substances of low hardness.

| Code   | Capacity | Dim. (BxAxC)  | Pestle lenght |
|--------|----------|---------------|---------------|
| BBF001 | 5 mL     | 40x35x10 mm   | 52 mm         |
| BBF002 | 15 mL    | 60x50x14 mm   | 59 mm         |
| BBF003 | 30 mL    | 80x65x18 mm   | 63 mm         |
| BBF004 | 70 mL    | 100x82x25 mm  | 81 mm         |
| BBF005 | 140 mL   | 120x100x30 mm | 101 mm        |
| BBF006 | 150 mL   | 130x110x33 mm | 107 mm        |
| BBF007 | 150 mL   | 140x115x35 mm | 110 mm        |
| BBF008 | 200 mL   | 150x125x38 mm | 116 mm        |
| BBF009 | 275 mL   | 160x128x39 mm | 120 mm        |
| BBF010 | 375 mL   | 170x143x41 mm | 135 mm        |
| BBF011 | 500 mL   | 180x150x45 mm | 150 mm        |
| BBF012 | 750 mL   | 200x165x50 mm | 155 mm        |

▶ BBN - Pestles, standard shape, porcelain

▶ Unglazed



1 | Glazed handle.

| Code   | For mortars | ø ball | ø handle | Lenght |
|--------|-------------|--------|----------|--------|
| BBN001 | 60 mm       | 19 mm  | 11 mm    | 65 mm  |
| BBN002 | 80 mm       | 26 mm  | 15 mm    | 90 mm  |
| BBN003 | 100 mm      | 27 mm  | 15 mm    | 110 mm |
| BBN004 | 130 mm      | 36 mm  | 18 mm    | 125 mm |
| BBN005 | 160 mm      | 40 mm  | 20 mm    | 145 mm |
| BBN006 | 216 mm      | 45 mm  | 27 mm    | 200 mm |

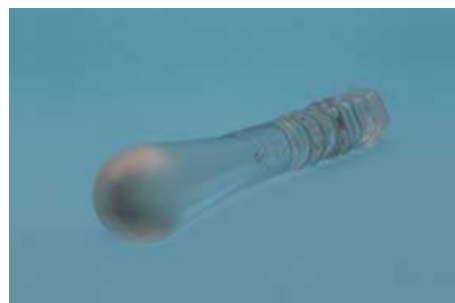


▶ BBQ - Pestles, glass

▶ Glass



| Code   | For mortars | ø ball | Lenght |
|--------|-------------|--------|--------|
| BBQ001 | 60 mm       | 20 mm  | 90 mm  |
| BBQ002 | 80 mm       | 20 mm  | 105 mm |
| BBQ003 | 100 mm      | 25 mm  | 115 mm |
| BBQ004 | 120 mm      | 35 mm  | 130 mm |
| BBQ005 | 150 mm      | 38 mm  | 180 mm |



▶ BBR - Pestles, agate



| Code   | For mortar | Lenght |
|--------|------------|--------|
| BBR001 | 60 mm      | 59 mm  |
| BBR002 | 80 mm      | 63 mm  |
| BBR003 | 100 mm     | 81 mm  |
| BBR004 | 120 mm     | 101 mm |



▶ BBT - Jars for mills, agate



▶ Agate jars without lid

- 1 | Without lid.
- 2 | Ideal for grinding and mixing substances of low hardness.

| Code   | Capacity | Dim. (Øx height) |
|--------|----------|------------------|
| BBT001 | 50 mL    | 65x50 mm         |
| BBT002 | 100 mL   | 75x60 mm         |
| BBT003 | 150 mL   | 90x70 mm         |
| BBT004 | 250 mL   | 100x80 mm        |
| BBT005 | 300 mL   | 105x85 mm        |
| BBT006 | 400 mL   | 105x90 mm        |
| BBT007 | 500 mL   | 115x95 mm        |







## BBT - Jars for mills, agate



## Lids for agate jars



| Code   | For mills of |
|--------|--------------|
| BBT008 | 50 mL        |
| BBT009 | 100 mL       |
| BBT010 | 150 mL       |
| BBT011 | 250 mL       |
| BBT012 | 300 mL       |
| BBT013 | 400 mL       |
| BBT014 | 500 mL       |



## BBV - Balls



## Agate



| Code   | Diameter |
|--------|----------|
| BBV001 | 4 mm     |
| BBV002 | 6 mm     |
| BBV003 | 8 mm     |
| BBV004 | 10 mm    |
| BBV005 | 12 mm    |
| BBV006 | 15 mm    |
| BBV007 | 20 mm    |
| BBV008 | 30 mm    |
| BBV009 | 40 mm    |



## BDB - With stopcock

## Stopcock lid desiccator



- 1 | Lid with ground outlet and vacuum stopcock.
- 2 | With porcelain disk.

| Code   | Capacity | ø Inner | ø Outer | Height |
|--------|----------|---------|---------|--------|
| BDB001 | 1 L      | 100 mm  | 136 mm  | 180 mm |
| BDB002 | 2 L      | 150 mm  | 210 mm  | 220 mm |
| BDB003 | 4 L      | 200 mm  | 270 mm  | 300 mm |
| BDB004 | 7 L      | 250 mm  | 305 mm  | 360 mm |
| BDB005 | 14 L     | 300 mm  | 365 mm  | 420 mm |

## Vacuum desiccator



- 1 | Base and disc in polypropylene (PP), lid in polycarbonate (PC). Autoclavable.
- 2 | PTFE stopcock with 3 ways.
- 3 | Vacuum up to 740 mm Hg/24h
- 4 | Hose connection: 10 mm

| Code   | Diameter |
|--------|----------|
| BDB016 | 200 mm   |

## BDD - Centrifuge tubes

### Knob lid desiccator



- 1 | Without connection to vacuum pump.
- 2 | Supplied with porcelain disk.

| Code   | Capacity | Ø Inner | Ø Outer | Height |
|--------|----------|---------|---------|--------|
| BDD001 | 1 L      | 100 mm  | 136 mm  | 180 mm |
| BDD002 | 2 L      | 150 mm  | 210 mm  | 220 mm |
| BDD003 | 4 L      | 200 mm  | 270 mm  | 300 mm |
| BDD004 | 7 L      | 250 mm  | 305 mm  | 360 mm |
| BDD005 | 14 L     | 300 mm  | 365 mm  | 420 mm |



## BDG - Disks

### Porcelain disks



- 1 | Glazed on one side.

| Code   | Diameter | Ø holes |
|--------|----------|---------|
| BDG001 | 90 mm    | 10 mm   |
| BDG002 | 140 mm   | 10 mm   |
| BDG003 | 190 mm   | 10 mm   |
| BDG004 | 220 mm   | 10 mm   |
| BDG005 | 275 mm   | 10 mm   |



## BDL - Accessories

### Knob lid for desiccator



| Code   | For dessicator | Ø outer | Ø inner |
|--------|----------------|---------|---------|
| BDL001 | 100 mm         | 136 mm  | 100 mm  |
| BDL002 | 150 mm         | 210 mm  | 155 mm  |
| BDL003 | 200 mm         | 270 mm  | 210 mm  |
| BDL004 | 250 mm         | 305 mm  | 250 mm  |
| BDL005 | 300 mm         | 365 mm  | 305 mm  |



### Stopcock for desiccator



- 1 | With male ground joint.

| Code   | Ground joint |
|--------|--------------|
| BDL011 | 24/29        |
| BDL012 | 19/28        |





## BDL - Accessories

## Lid ground joint for desiccator



1 | Witj female ground joint. Lid is not included.

| Code   | For dessicator | Ground joint |
|--------|----------------|--------------|
| BDL014 | 50 mm          | 19/28        |
| BDL013 | 100 mm         | 19/28        |
| BDL015 | 200 mm         | 24/29        |
| BDL016 | 250 mm         | 24/29        |
| BDL017 | 300 mm         | 24/29        |



## BGB - Test tubes

## Soda glass



1 | Rimless and with round bottom. Supplied in boxes of 250 units.

| Code   | ØxL       | Cap. | Wall thickness |
|--------|-----------|------|----------------|
| BGB001 | 10x75 mm  | 3 mL | 0.5 mm         |
| BGB002 | 12x75 mm  | 5 mL | 0.5 mm         |
| BGB003 | 12x100 mm | 7 mL | 0.8 mm         |

## Biorosilicate glass



1 | Made of borosilicate glass 7.1. Rimless and round bottom

| Code   | ØxL        | Cap.  | Wall thickness |
|--------|------------|-------|----------------|
| BGB005 | 10x100 mm  | 5 mL  | 0.8 mm         |
| BGB006 | 16x160 mm  | 25 mL | 1.0 mm         |
| BGB007 | 16x100 mm  | 15 mL | 0.8 mm         |
| BGB008 | 18x180 mm  | 35 mL | 1.5 mm         |
| BGB009 | 20x200 mm. | 50 mL | 1.5 mm         |
| BGB010 | 22x220 mm  | 65 mL | 1.5 mm         |
| BGB011 | 25x200 mm  | 80 mL | 1.5 mm         |

## Test tube, PP



| Code   | Capacity | ØxL       |
|--------|----------|-----------|
| BGB025 | 5 mL     | 12x75 mm  |
| BGB026 | 15 mL    | 16x100 mm |

## Test tube, PS



| Code   | Capacity | ØxL       |
|--------|----------|-----------|
| BGB027 | 5 mL     | 12x75 mm  |
| BGB028 | 15 mL    | 16x100 mm |



## BGD - Centrifuge tubes

### Glass



- 1| Non graduated, with rim.
- 2| Capacity of 12 mL.

| Code   | Bottom  | ØxL       | Wall thickness |
|--------|---------|-----------|----------------|
| BGD001 | Round   | 16x100 mm | 1.2 mm         |
| BGD002 | Conical | 16x110 mm | 1.0 mm         |



### Glass ASTM



| Code   | Capacity | Shape       |
|--------|----------|-------------|
| BGD003 | 100 mL   | Cylindrical |
| BGD004 | 100 mL   | Pear        |



### Glass



| Code   | Capacity | Diameter | Height |
|--------|----------|----------|--------|
| BGD005 | 5 mL     | 13 mm    | 100 mm |
| BGD006 | 10 mL    | 15 mm    | 110 mm |
| BGD007 | 15 mL    | 17 mm    | 120 mm |
| BGD008 | 25 mL    | 22 mm    | 152 mm |
| BGD009 | 50 mL    | 30 mm    | 125 mm |



### Polypropylene



- 1| With threaded cap, conical bottom and graduation.
- 2| With marking area.

| Code    | Capacity | Dimensions | Batch |
|---------|----------|------------|-------|
| BGD010  | 15 mL    | 120x16 mm  | 50    |
| BGD011  | 50 mL    | 117x29 mm  | 25    |
| BGD070* | 50 mL    | 115x30 mm  | 25    |

\*self-standing bottom

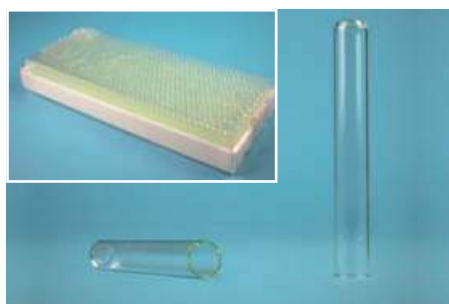


## BGG - Culture tubes

### Durham Bell jar



| Code   | ØxH     | Wall thickness | Pack   |
|--------|---------|----------------|--------|
| BGG011 | 7x50 mm | 0,5 mm         | C/1000 |





## BGG - Culture tubes

## ▶ Round bottom, PP stopper



1 | Borosilicate glass, stopper with PTFE joint.

| Code   | Capacity | ØxL       |
|--------|----------|-----------|
| BGG001 | 5 mL     | 15x75 mm  |
| BGG002 | 10 mL    | 15x125 mm |
| BGG003 | 15 mL    | 15x150 mm |
| BGG006 | 22 mL    | 16x160 mm |
| BGG005 | 25 mL    | 18x150 mm |
| BGG004 | 45 mL    | 25x150 mm |

## ▶ Flat bottom, PP stopper



1 | Borosilicate glass, stopper with PTFE joint.

| Code   | Capacity | ØxL       |
|--------|----------|-----------|
| BGG007 | 5 mL     | 18x45 mm  |
| BGG009 | 30 mL    | 25x95 mm  |
| BGG010 | 40 mL    | 25x145 mm |



## BGJ - 'U' tubes



1 | Borosilicate glass, with beaded rims.

| Code   | Length | Diameter |
|--------|--------|----------|
| BGJ001 | 150 mm | 16 mm    |



## BGL - Tube caps

## ▶ PE, for tubes



| Code   | For tubes of | Colour | Lot  |
|--------|--------------|--------|------|
| BGL022 | 12 mm        | Red    | 1000 |
| BGL023 | 16 mm        | Green  | 1000 |



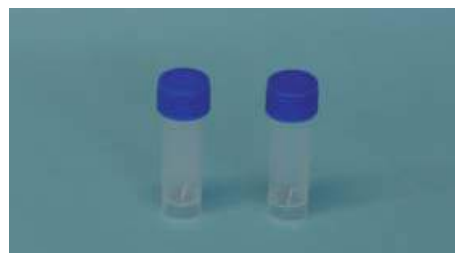
## BGN - Microtubes

### ▶ Criotubes PP



- 1| Autoclavable and non-sterile.
- 2| Suitable for freezers, ultrafreezers or liquid nitrogen (vapour phase only).  
External thread and marking area

| Code   | Capacity | Diameter | Height | Graduación | Pack  |
|--------|----------|----------|--------|------------|-------|
| BGN001 | 2 mL     | 10 mm    | 45 mm  | 0,5 mL     | B/500 |
| BGN002 | 5 mL     | 15 mm    | 57 mm  | 1,0 mL     | B/200 |



### ▶ PCR microtubes, PP



- 1| Conical bottom, with flat lid.
- 2| Sterilizable in autoclave and can be also frozen at -20 °C.
- 3| Supplied in bag of 1000 units.

| Code   | Capacity |
|--------|----------|
| BGN003 | 0,2 mL   |



### ▶ Centrifuge microtubes, PP



- 1| Graduated, Conical bottom and lid.

| Code   | Capacity | Units bag |
|--------|----------|-----------|
| BGN004 | 0.5 mL   | 1000      |
| BGN005 | 1.5 mL   | 500       |
| BGN025 | 2 mL     | 500       |



### ▶ Microtube strips for PCR, PP



- 1| Conical bottom, lid strip included.
- 2| Sterilizable in autoclave and can be also frozen at -20 °C.
- 3| Bags of 200 units.

| Code   | Description             | Capacity |
|--------|-------------------------|----------|
| BGN006 | Strip of 8 microtubes   | 0.2 mL   |
| BGN007 | Strips of 12 microtubes | 0.2 mL   |



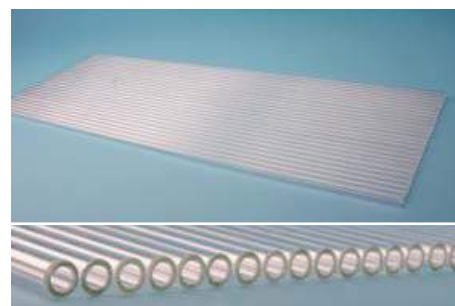
## BGV - Others

### ▶ Kg of borosilicate glass tube



- 1| Made of borosilicate glass.

| Code   | Dimensions |
|--------|------------|
| BGV001 | 7x500 mm   |



▶ BGV - Others

▶ Thiele tube



1 | Made of borosilicate glass.

| Code   | Diameter | Lenght | Volume |
|--------|----------|--------|--------|
| BGV002 | 24 mm    | 150 mm | 40 mL  |

▶ Nessler tube



1 | Flat bottom, with spout.

| Code   | Diameter | Lenght | Engraved  |
|--------|----------|--------|-----------|
| BGV003 | 27 mm    | 210 mm | 50/100 mL |

▶ Glass tubing cutter



| Code   | For tubes until |
|--------|-----------------|
| BGV010 | 30 mm           |

▶ BJB - For tubes, plastic

▶ Multi support racks



1 | Sterilizable in autoclave.

| Code   | Capacity | Ø tubes  | Colour |
|--------|----------|----------|--------|
| BJB021 | 40 tubes | 17-20 mm | Red    |
| BJB022 | 50 tubes | 14-17 mm | White  |
| BJB023 | 80 tubes | 10-13 mm | White  |

▶ BJB - For tubes, plastic

▶ PP test tube rack



1 | Autoclavable and stackable, holes are labeled with alphanumeric marks.



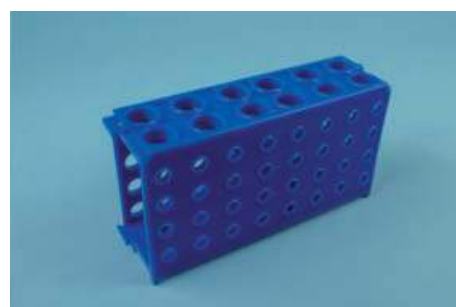
| Code   | Alignment | Nº holes | Ø     | Colour   |
|--------|-----------|----------|-------|----------|
| BJB001 | 6x15      | 90       | 13 mm | White    |
| BJB002 | 6x15      | 90       | 13 mm | Blue     |
| BJB003 | 6x15      | 90       | 13 mm | Red      |
| BJB004 | 6x15      | 90       | 13 mm | Amarillo |
| BJB005 | 5x12      | 60       | 16 mm | White    |
| BJB006 | 5x12      | 60       | 16 mm | Blue     |
| BJB007 | 5x12      | 60       | 16 mm | Red      |
| BJB008 | 5x12      | 60       | 16 mm | Amarillo |
| BJB009 | 4x10      | 40       | 20 mm | White    |
| BJB010 | 4x10      | 40       | 20 mm | Blue     |
| BJB011 | 4x10      | 40       | 20 mm | Red      |
| BJB012 | 4x10      | 40       | 20 mm | Amarillo |
| BJB013 | 3x8       | 24       | 25 mm | White    |
| BJB014 | 3x8       | 24       | 25 mm | Blue     |
| BJB015 | 3x8       | 24       | 25 mm | Red      |
| BJB016 | 3x8       | 24       | 25 mm | Amarillo |
| BJB017 | 3x7       | 21       | 30 mm | White    |
| BJB018 | 3x7       | 21       | 30 mm | Blue     |
| BJB019 | 3x7       | 21       | 30 mm | Red      |
| BJB020 | 3x7       | 21       | 30 mm | Amarillo |

▶ Multiposition rack



- 1 | Polypropylene autoclavable.
- 2 | With lateral hooks to joint several racks.
- 3 | Prepared to hold tubes of different sizes depending on position.

| Code   | Capacity | Ø tubes | Alignment |
|--------|----------|---------|-----------|
| BJB026 | 32 tubes | 11 mm   | 4x8       |
|        | 12 tubes | 16 mm   | 2x6       |
|        | 4 tubes  | 29 mm   | 1x4       |



▶ Test tube rack Plexiglas



| Code   | Alignment | Nº tubes | Dimensions (LxAxH) | Ø tube |
|--------|-----------|----------|--------------------|--------|
| BJB027 | 2x6       | 12       | 105x55x50 mm       | 14 mm  |
| BJB028 | 2x12      | 24       | 205x55x50 mm       | 14 mm  |
| BJB029 | 4x12      | 48       | 220x90x50 mm       | 14 mm  |
| BJB030 | 2x3       | 6        | 140x95x100 mm      | 22 mm  |
| BJB031 | 2x6       | 12       | 175x95x100         | 22 mm  |
| BJB032 | 2x3       | 6        | 140x95x75 mm       | 32 mm  |
| BJB033 | 2x6       | 12       | 225x95x75 mm       | 32 mm  |
| BJB034 | 2x12      | 24       | -                  | 32 mm  |



▶ PP



1 | Disassembled, sterilizable in autoclave.

| Code   | Nº tubes | Dimensions (LxAxH) | Ø tube |
|--------|----------|--------------------|--------|
| BJB035 | 31       | 27x6,5x12 cm       | 13 mm  |





## BJD - For tubes, metal

## ▶ Stainless steel rack



1 | Autoclavables and very resistant, their special design makes them ideal for conical bottom tubes.

| Code   | Capacity  | Diameter | Alignment |
|--------|-----------|----------|-----------|
| BJD004 | 12 tubes  | 13 mm    | 3x4       |
| BJD005 | 24 tubes  | 13 mm    | 3x8       |
| BJD006 | 50 tubes  | 13 mm    | 5x10      |
| BJD007 | 100 tubes | 13 mm    | 10x10     |
| BJD008 | 12 tubes  | 16 mm    | 2x6       |
| BJD009 | 24 tubes  | 16 mm    | 3x8       |
| BJD010 | 50 tubes  | 16 mm    | 5x10      |
| BJD011 | 72 tubes  | 16 mm    | 6x12      |
| BJD012 | 100 tubes | 16 mm    | 10x10     |
| BJD013 | 24 tubes  | 18 mm    | 3x8       |
| BJD014 | 50 tubes  | 18 mm    | 5x10      |
| BJD015 | 72 tubes  | 18 mm    | 6x12      |
| BJD016 | 100 tubes | 18 mm    | 10x10     |
| BJD017 | 12 tubes  | 25 mm    | 2x6       |
| BJD018 | 24 tubes  | 25 mm    | 3x8       |
| BJD019 | 50 tubes  | 25 mm    | 5x10      |
| BJD020 | 72 tubes  | 25 mm    | 6x12      |

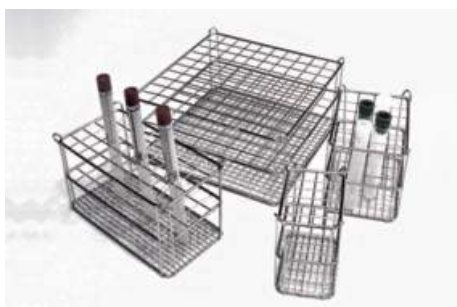
## ▶ Test tube rack Z-shaped



1 | Made of anodized aluminium, great durability and resistant to chemical and corrosive agents.

| Code   | Cap. | Diameter | Dim. (LxAxH)  |
|--------|------|----------|---------------|
| BJD001 | 50   | 12 mm    | 170x995x55 mm |
| BJD002 | 50   | 14,5 mm  | 200x110x55 mm |
| BJD003 | 50   | 17,0 mm  | 225x120x68 mm |

## ▶ AISI 304 stainless steel racks for test tubes



- 1 | Made of stainless steel AISI 304.
- 2 | Specially recommended for hospitals, laboratories, etc.
- 3 | These racks are stackable and have double weldings that provide high resistance and durability.

| Code   | Capacity | Tube Ø | Alignment | Dimensions    |
|--------|----------|--------|-----------|---------------|
| BJD021 | 24 tubes | 10 mm  | 6x4       | 86x64x90 mm   |
| BJD022 | 24 tubes | 10 mm  | 6x4       | 86x64x60 mm   |
| BJD023 | 50 tubes | 12 mm  | 10x5      | 170x86x90 mm  |
| BJD024 | 50 tubes | 12 mm  | 10x5      | 170x86x60 mm  |
| BJD025 | 24 tubes | 14 mm  | 6x4       | 110x79x90 mm  |
| BJD026 | 24 tubes | 16 mm  | 6x4       | 125x90x90 mm  |
| BJD027 | 50 tubes | 16 mm  | 10x5      | 200x105x90 mm |
| BJD028 | 24 tubes | 18 mm  | 6x4       | 135x93x90 mm  |
| BJD029 | 50 tubes | 18 mm  | 10x5      | 220x116x90 mm |
| BJD030 | 24 tubes | 20 mm  | 6x4       | 145x105x90 mm |
| BJD031 | 50 tubes | 20 mm  | 10x5      | 238x125x90 mm |
| BJD032 | 24 tubes | 22 mm  | 6x4       | 161x113x90 mm |
| BJD033 | 24 tubes | 30 mm  | 6x4       | 209x143x90 mm |

## BJD - For tubes, metal

### ▶ Racks for Falcon tubes

- 1| Made of AISI 304 stainless steel with double wires that provide a higher resistance and durability.
- 2| For Falcon centrifuge tubes.

| Code   | Capacity | Tube         | Alignment |
|--------|----------|--------------|-----------|
| BJD034 | 24 tubes | Falcon 15 ml | 6x4       |
| BJD035 | 24 tubes | Falcon 50 ml | 6x4       |



### ▶ Racks for chromatography vials

- 1| Made of AISI 304 stainless steel, for chromatography vials 12x32mm.

| Code   | Capacity | Tubes    | Alignment | Dimensions   |
|--------|----------|----------|-----------|--------------|
| BJD036 | 50 vials | 12x32 mm | 10x5      | 170x86x25 mm |
| BJD037 | 24 vials | 12x32 mm | 6x4       | 99x75x25 mm  |



## BJJ - For tubes, PVC



### ▶ For tubes of 13 mm Ø

| Code   | Alignment | N° tubes | Dimensions (LxAxH) |
|--------|-----------|----------|--------------------|
| BJJ001 | 2x3       | 6        | 55x45x40 mm        |
| BJJ002 | 1x6       | 6        | 112x38x40 mm       |
| BJJ003 | 2x6       | 12       | 118x48x40 mm       |
| BJJ004 | 1x12      | 12       | 250x44x40 mm       |
| BJJ005 | 2x12      | 24       | 255x48x40 mm       |
| BJJ006 | 1x24      | 24       | 490x50x40 mm       |
| BJJ007 | 3x16      | 48       | 310x75x40 mm       |
| BJJ008 | 5x10      | 50       | 195x105x40 mm      |
| BJJ009 | 5x12      | 60       | 200x131x40 mm      |
| BJJ010 | 10x10     | 100      | 195x195x40 mm      |
| BJJ011 | 7x20      | 140      | 410x150x40 mm      |
| BJJ012 | 10x15     | 150      | 291x195x40 mm      |



### ▶ For tubes of 16 mm Ø

| Code   | Alignment | N° tubes | Dimensions (LxAxH) |
|--------|-----------|----------|--------------------|
| BJJ013 | 2x6       | 12       | 160x60x40 mm       |
| BJJ014 | 2x12      | 24       | 268x65x40 mm       |
| BJJ015 | 2x6       | 12       | 160x60x65 mm       |
| BJJ016 | 2x12      | 24       | 268x65x65 mm       |





## BJJ - For tubes, PVC



## ▶ For tubes of 22 mm Ø



| Code   | Alignment | N° tubes | Dimensions (LxAxH) |
|--------|-----------|----------|--------------------|
| BJJ017 | 2x6       | 12       | 182x68x65 mm       |
| BJJ018 | 2x12      | 24       | 350x82x65          |
| BJJ019 | 2x3       | 6        | 185x65x90 mm       |
| BJJ020 | 2x6       | 12       | 182x68x90 mm       |
| BJJ022 | 2x12      | 24       | 350x83x90 mm       |

## ▶ For tubes of 32 mm Ø



| Code   | Alignment | N° tubes | Dimensions (LxAxH) |
|--------|-----------|----------|--------------------|
| BJJ023 | 2x3       | 6        | 130x90x65 mm       |
| BJJ024 | 1x6       | 6        | 290x58x65 mm       |
| BJJ025 | 2x4       | 8        | 185x95x65 mm       |
| BJJ026 | 2x6       | 12       | 250x85x65 mm       |

## ▶ For tubes of 32 mm Ø



| Code   | Alignment | N° tubes | Ø tubes | Dimensions (LxAxH) |
|--------|-----------|----------|---------|--------------------|
| BJJ027 | 2x3       | 6        | 40 mm   | 177x120x60 mm      |
| BJJ028 | 2x4       | 8        | 40 mm   | 250x130x60 mm      |
| BJJ029 | 2x2       | 4        | 50 mm   | 150x150x60 mm      |
| BJJ030 | 2x3       | 6        | 50 mm   | 220x150x60 mm      |
| BJJ031 | 2x3       | 6        | 60 mm   | 220x152x60 mm      |



## BJL - For microtubes

## ▶ Polypropylene



- 1 | Alphanumerical graduation. Sterilizable in autoclave.
- 2 | Temperature in use: up to -20 °C.

| Code   | N° tubes | Ø tubes    | Colour | Dimensions (LxAxH) |
|--------|----------|------------|--------|--------------------|
| BJL001 | 60       | 0.5/1.5 mL | Orange | 210x73x24 mm       |
| BJL002 | 60       | 0.5/1.5 mL | Blue   | 210x73x24 mm       |
| BJL003 | 60       | 0.5/1.5 mL | Green  | 210x73x24 mm       |
| BJL004 | 60       | 0.5/1.5 mL | Red    | 210x73x24 mm       |



## ▶ BJN - For pipettes

### ▶ For pipettes and thermometres



- 1 | Capacity for 12 units, until 10 mm Ø.
- 2 | Made of PP.

| Code   | Capacity | Dimensions (LxAxH) |
|--------|----------|--------------------|
| BJN009 | 12       | 205x150x220 mm     |



### ▶ Circular



- 1 | Made of white plastic. For pipettes of different volumen
- 2 | Capacity 44 pipettes

| Code   | Description         | Capacity          |
|--------|---------------------|-------------------|
| BJN008 | Fixed, without base | 32 holes of 13 mm |

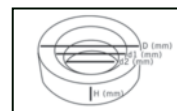


## ▶ BJQ - For flasks

### ▶ Circular cork support



| Code   | Ø      | For flasks | D1     | D2     | H     |
|--------|--------|------------|--------|--------|-------|
| BJQ001 | 80 mm  | 50-100 mL  | 50 mm  | 30 mm  | 30 mm |
| BJQ002 | 100 mm | 250 mL     | 65 mm  | 45 mm  | 30 mm |
| BJQ003 | 120 mm | 500 mL     | 90 mm  | 70 mm  | 30 mm |
| BJQ004 | 140 mm | 1000 mL    | 110 mm | 90 mm  | 30 mm |
| BJQ005 | 160 mm | 2000 mL    | 125 mm | 110 mm | 30 mm |



### ▶ Circular rubber



- 1 | Puede sujetar matraces de hasta 500 mL.

| Code   | Ø maximun | Height |
|--------|-----------|--------|
| BJQ006 | 90 mm     | 50 mm  |



### ▶ Circular PP



- 1 | For holding flasks up to 10L. MAde of polypropilene.

| Code   | Ø maximun | Height |
|--------|-----------|--------|
| BJQ007 | 160 mm    | 50 mm  |



## ▶ BJS - For funnels

▶ For 4 and 2 funnels, metal



1 | Made of metal, it is supplied with support

| Code   | Capacity  |
|--------|-----------|
| BJS005 | 2 funnels |
| BJS006 | 4 funnels |

## ▶ BMC - Glass

▶ Glass stopper flat bottom



| Code   | Ground joint | Shape     |
|--------|--------------|-----------|
| BMC001 | 10/19        | Hexagonal |
| BMC002 | 12/21        | Hexagonal |
| BMC004 | 14/23        | Hexagonal |
| BMC006 | 19/26        | Hexagonal |
| BMC008 | 24/29        | Hexagonal |
| BMC010 | 29/32        | Hexagonal |
| BMC012 | 34/35        | Hexagonal |

▶ Glass stopper tip bottom



| Code   | Ground joint | Shape     |
|--------|--------------|-----------|
| BMC003 | 12/21        | Hexagonal |
| BMC005 | 14/23        | Hexagonal |
| BMC007 | 19/26        | Hexagonal |
| BMC009 | 24/29        | Hexagonal |
| BMC011 | 29/32        | Hexagonal |

▶ Ground joint with groove



| Code   | Ground joint | Description |
|--------|--------------|-------------|
| BMC015 | 29/32        | With groove |
| BMC016 | 14/23        | -           |

## BMD - Forma cónica, goma

### Goma roja



| Code   | Lower Ø | Upper Ø | Height   |
|--------|---------|---------|----------|
| BMD116 | 6 mm    | 9.5 mm  | 17,4 mm  |
| BMD117 | 9.5 mm  | 12 mm   | 15,6 mm  |
| BMD118 | 11 mm   | 14.5 mm | 20,5 mm  |
| BMD119 | 13 mm   | 16 mm   | 20,5 mm  |
| BMD120 | 14 mm   | 17.5 mm | 20,3 mm  |
| BMD121 | 15 mm   | 19.5 mm | 22,5 mm  |
| BMD122 | 17 mm   | 21 mm   | 25,25 mm |
| BMD123 | 19.5 mm | 24 mm   | 26,25 mm |
| BMD124 | 20.5 mm | 28 mm   | 31,05 mm |
| BMD125 | 27.5 mm | 32 mm   | 32,35 mm |
| BMD126 | 29 mm   | 34 mm   | 34,40 mm |
| BMD127 | 31.5 mm | 39.5 mm | 43,60 mm |
| BMD128 | 36.5 mm | 43.5 mm | 44,60 mm |
| BMD129 | 43.5 mm | 53.5 mm | 43,08 mm |
| BMD130 | 45 mm   | 56 mm   | 42,20 mm |



## BMH - Perforated, rubber

### Goma roja, 1 y 2 orificios



| Code   | Holes   | Lower Ø | Upper Ø | Height   |
|--------|---------|---------|---------|----------|
| BMH103 | 1 hole  | 15 mm   | 19.5 mm | 22,25 mm |
| BMH104 | 1 hole  | 17 mm   | 21 mm   | 25,25 mm |
| BMH105 | 1 hole  | 19.5 mm | 24 mm   | 26,25 mm |
| BMH106 | 1 hole  | 20.5 mm | 28 mm   | 31,05 mm |
| BMH107 | 1 hole  | 27.5 mm | 32 mm   | 32,35 mm |
| BMH108 | 1 hole  | 29 mm   | 34 mm   | 34,40 mm |
| BMH109 | 1 hole  | 31.5 mm | 39.5 mm | 43,60 mm |
| BMH110 | 1 hole  | 36.5 mm | 43.5 mm | 44,60 mm |
| BMH111 | 1 hole  | 43.5 mm | 53.5 mm | 43,08 mm |
| BMH112 | 1 hole  | 45 mm   | 56 mm   | 42,20 mm |
| BMH113 | 2 holes | 15 mm   | 19.5 mm | 22,25 mm |
| BMH114 | 2 holes | 17 mm   | 21 mm   | 25,25 mm |
| BMH115 | 2 holes | 19.5 mm | 24 mm   | 26,25 mm |
| BMH116 | 2 holes | 20.5 mm | 28 mm   | 31,05 mm |
| BMH117 | 2 holes | 27.5 mm | 32 mm   | 32,35 mm |
| BMH118 | 2 holes | 29 mm   | 34 mm   | 34,40 mm |
| BMH119 | 2 holes | 31.5 mm | 39.5 mm | 43,60 mm |
| BMH120 | 2 holes | 36.5 mm | 43.5 mm | 44,60 mm |
| BMH121 | 2 holes | 43.5 mm | 53.5 mm | 43,08 mm |
| BMH122 | 2 holes | 45 mm   | 56 mm   | 42,20 mm |



## BML - Borers

### Cork borer sharpener

| Code   | Description                           | Total length |
|--------|---------------------------------------|--------------|
| BML001 | Hardened steel blade and metal handle | 170 mm       |



### Cork borers

- 1| Made of nickel plated brass, they present borers of different diameters.
- 2| Equipped with a solid rod to remove the rests of cork from the borer.

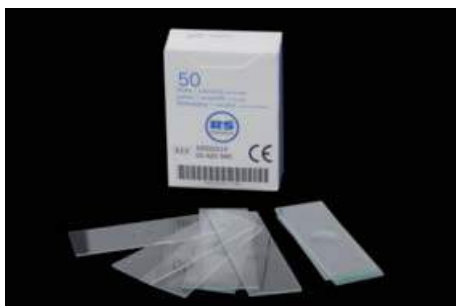
| Code   | Set of | Range   |
|--------|--------|---------|
| BML002 | 6      | 5/11 mm |
| BML003 | 12     | 5/19 mm |





## BPB - Microscope slides

## With cavities



- 1 | Made of soda glass. Standard size 76x26 mm. Box of 50 units.
- 2 | Ground edges 90°.

| Code   | Cavities   | Thickness  |
|--------|------------|------------|
| BPB001 | 1 cavidad  | 1,2 mm     |
| BPB002 | 2 cavities | 1,2 mm     |
| BPB045 | 3 cavities | 1,2/1,5 mm |

## 3 fields for cytology



- 1 | 3 fields of 18 mm each one identified as (VCE).
- 2 | With frosted band of 20 mm. Ground edge 90°.
- 3 | Box of 50 units.

| Code   | Size     |
|--------|----------|
| BPB005 | 76x26 mm |

## Colour end



- 1 | Ground edges, box of 50 units.

| Code   | Dimensions | Corner | Thickness | Colour |
|--------|------------|--------|-----------|--------|
| BPB021 | 76x26 mm   | 45°    | 1/1,2     | White  |
| BPB022 | 76x26 mm   | 45°    | 1/1,2     | Orange |
| BPB023 | 76x26 mm   | 45°    | 1/1,2     | Yellow |
| BPB024 | 76x26 mm   | 45°    | 1/1,2     | Green  |
| BPB025 | 76x26 mm   | 45°    | 1/1,2     | Pink   |
| BPB026 | 76x26 mm   | 45°    | 1/1,2     | Blue   |
| BPB027 | 76x26 mm   | 90°    | 1/1,2     | White  |
| BPB028 | 76x26 mm   | 90°    | 1/1,2     | Orange |
| BPB029 | 76x26 mm   | 90°    | 1/1,2     | Yellow |
| BPB030 | 76x26 mm   | 90°    | 1/1,2     | Green  |
| BPB031 | 76x26 mm   | 90°    | 1/1,2     | Pink   |
| BPB032 | 76x26 mm   | 90°    | 1/1,2     | Blue   |

## Diagnostic



- 1 | Hydrophobic blue Teflon coating highly resistant to organic solvents and reagents used in Histology.
- 2 | Standard size 73x26 mm and thickness 1 mm .
- 3 | Ground edges 90° and frosted band 20 mm. Box of 50 units.

| Code   | N° Wells | Well Ø                  |
|--------|----------|-------------------------|
| BPB003 | 1 mm     | 6 mm                    |
| BPB004 | 2 mm     | 11 mm                   |
| BPB006 | 3 mm     | 10 mm                   |
| BPB007 | 3 mm     | 14 mm                   |
| BPB008 | 6 mm     | 8 mm                    |
| BPB009 | 8 mm     | 9 mm                    |
| BPB010 | 10 mm    | 5 mm                    |
| BPB011 | 10 mm    | 8 mm                    |
| BPB012 | 8 mm     | 6 mm numbered           |
| BPB013 | 10 mm    | 6 mm numbered           |
| BPB014 | 10 mm    | 8 mm numbered           |
| BPB015 | 10 mm    | 7 mm numbered clockwise |

▶ BPB - Microscope slides

▶ Standard



1 | Thickness 1/1.2 mm. Box of 50 units.

| Code   | Dimensions | Edges  | Corner | Batch |
|--------|------------|--------|--------|-------|
| BPB016 | 76x26 mm   | Cut    | 90°    | 50    |
| BPB017 | 76x26 mm   | Ground | 90°    | 50    |
| BPB043 | 76x26 mm   | Ground | 45°    | 50    |



▶ Standard

GHÄASEL

1 | Hydrophilic treatment For human biology.  
2 | Dimensions: 76x26 mm. Supplied in boxes of 50 units.

| Code   | Corner | Thickness | Edges  | Batch |
|--------|--------|-----------|--------|-------|
| BPB033 | 90°    | 1,1       | Cut    | 50    |
| BPB034 | 90°    | 1,1       | Ground | 50    |
| BPB035 | 45°    | 1,1       | Ground | 50    |



▶ Frosted band



1 | Thickness 1/1,2 mm. Supplied in boxes of 50 units

| Code   | Dimensions | Edges          | Corner | Batch |
|--------|------------|----------------|--------|-------|
| BPB018 | 76x26 mm   | Cut            | 90°    | 50    |
| BPB019 | 76x26 mm   | Ground         | 90°    | 50    |
| BPB020 | 76x26 mm   | Ground beveled | 90°    | 50    |
| BPB044 | 76x26 mm   | Ground         | 45°    | 50    |



▶ Frosted band

GHÄASEL

1 | Hydrophilic treatment For human biology.  
2 | Dimensions: 76x26 mm. Supplied in boxes of 50 units.

| Code   | Corner | Thickness | Edges  | Batch |
|--------|--------|-----------|--------|-------|
| BPB036 | 90°    | 1,1       | Cut    | 50    |
| BPB037 | 90°    | 1,1       | Ground | 50    |



▶ Special dimensions

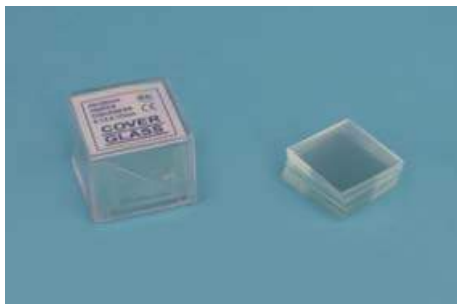


1 | Thickness of 1mm. Made of soda glas.  
2 | Box of 50 units.

| Code   | Dimensions | Edges |
|--------|------------|-------|
| BPB038 | 76x50 mm   | Cut   |
| BPB041 | 45x30 mm   | Cut   |
| BPB042 | 80x65 mm   | Cut   |



 BPD - Cover slides

 Square/rectangular


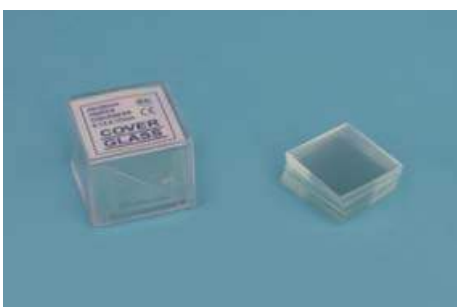
- 1| Made of soda glass, transparent and without finger-prints.
- 2| Uniform standard thickness of 0.13-0.16 mm.
- 3| Box of 100 units .

| Code   | Dimensions | Batch |
|--------|------------|-------|
| BPD001 | 12x12 mm   | 10    |
| BPD002 | 18x18 mm   | 10    |
| BPD003 | 20x20 mm   | 10    |
| BPD004 | 22x22 mm   | 10    |
| BPD005 | 24x24 mm   | 10    |
| BPD006 | 24x32 mm   | 10    |
| BPD007 | 24x40 mm   | 5     |
| BPD008 | 24x50 mm   | 5     |
| BPD009 | 24x60 mm   | 5     |

 Round


- 1| Made of soda glass, transparent and without finger-prints.
- 2| Uniform standard thickness of 0.13-0.16 mm.
- 3| Box of 100 units .

| Code   | Dimensions Ø | Batch |
|--------|--------------|-------|
| BPD010 | 10 mm        | 10    |
| BPD011 | 12 mm        | 10    |
| BPD013 | 18 mm        | 10    |
| BPD014 | 20 mm        | 10    |
| BPD015 | 22 mm        | 10    |

 Square


- 1| Borosilicate glass.
- 2| Thickness of 0.13/0.17 mm. Box of 200 units.
- 3| ISO8255.

| Code   | Dimensions | Batch |
|--------|------------|-------|
| BPD016 | 18x18 mm   | 5     |
| BPD017 | 20x20 mm   | 5     |
| BPD018 | 22x22 mm   | 5     |
| BPD020 | 24x24 mm   | 5     |

 Rectangular


- 1| Borosilicate glass.
- 2| Thickness of 0.13/0.17 mm. Box of 100 units.
- 3| ISO8255.

| Code   | Dimensions | Batch |
|--------|------------|-------|
| BPD019 | 22x32 mm   | 10    |
| BPD021 | 24x32 mm   | 10    |
| BPD022 | 24x36 mm   | 10    |
| BPD023 | 24x40 mm   | 10    |
| BPD024 | 24x50 mm   | 10    |
| BPD025 | 24x60 mm   | 10    |



## BPG - Storage boxes, microscope slides

### Cardboard trays



- 1 | For standard microscopes slides 76x26 mm.
- 2 | With thumb grooves to remove slides easily.

| Code   | Nº slides | Description                  | Dimensions   |
|--------|-----------|------------------------------|--------------|
| BPG001 | 2         | With lid                     | 90x70x5 mm   |
| BPG002 | 3         | With lid                     | 82x28x17 mm  |
| BPG003 | 4         | With lid                     | 150x110x7mm  |
| BPG004 | 10        | With lid, index and numbered | 400x100x7 mm |
| BPG005 | 20        | With lid, index and numbered | 400x200x7 mm |
| BPG006 | 20        | Without lid, numbered        | 400x200x4 mm |



### Plastic boxes



- 1 | For standard microscopes slides 76x26 mm.
- 2 | Biggest boxes can be stacked (50 and 100 slides).

| Code   | Nº slides | Description              | Dimensions    |
|--------|-----------|--------------------------|---------------|
| BPG007 | 2         | Hinged opening           | 90x70x5 mm    |
| BPG008 | 5         | Hinged opening           | 82x28x17 mm   |
| BPG009 | 25        | 2 pieces                 | 120x80x30 mm  |
| BPG010 | 50        | Hinged opening, numbered | 210x83x30 mm  |
| BPG011 | 100       | Hinged opening, numbered | 210x163x30 mm |



### Plastic boxes



- 1 | Made of ABS plastic, to get slides clean and free of finger prints.
- 2 | Capacity for 90 standard size slides: 76x26 mm.

| Code   | Dimensions    |
|--------|---------------|
| BPG012 | 12x10x16,5 cm |



### Metallic storage cabinet for slides



- 1 | Modular system to classify and store slides.
- 2 | Each module is composed of 6 drawers with safety system.
- 3 | Stackable modules made of metal.

| Code   | Description | Capacity    | Dimensions      |
|--------|-------------|-------------|-----------------|
| BPG013 | Base        | -           | 40x46x11 cm     |
| BPG014 | Cabinet     | 5400 slides | 48x40,5x12,5 cm |



▶ BPG - Storage boxes, microscope slides

▶ Metallic storage cabinet for blocks



- 1 | Modular system to classify and store paraffin blocks.
- 2 | Each module is composed of 6 drawers with safety system.
- 3 | Each drawer has 12 metallic removable guides.
- 4 | Stackable modules made of metal.

| Code   | Description | Capacity    | Dimensions  |
|--------|-------------|-------------|-------------|
| BPG015 | Base        | -           | 48x45x12 cm |
| BPG016 | Cabinet     | 4800 blocks | 48x45x39 cm |

▶ Storage box for slides, plastic



- 1 | Made of plastic, stackable.
- 2 | They include 6 supports for 75 slides (total capacity 450 slides).

| Code   | Description                | Dimensions  |
|--------|----------------------------|-------------|
| BPG017 | Storage box for 450 slides | 34x23x10 cm |
| BPG018 | Support for 75 slides      | -           |

▶ BPJ - Embedding

▶ Embedding cassettes with lid



- 1 | Made of polyoxymethylene (POM), completely resistant to organic solvents.
- 2 | Large labelling surfaces, inclined 45°.

| Code   | Colour | Slots  | Box      |
|--------|--------|--------|----------|
| BPJ001 | White  | 1x5 mm | 500 uds. |

▶ Biopsy cassettes with lid



- 1 | Made of polyoxymethylene (POM), completely resistant to organic solvents.
- 2 | Large labelling surfaces, inclined 45°.

| Code   | Colour | Slots  | Box      |
|--------|--------|--------|----------|
| BPJ006 | White  | 1x1 mm | 500 uds. |

▶ Embedding cassettes without lid



- 1 | Made of polyoxymethylene (POM), completely resistant to organic solvents.
- 2 | Large labelling surfaces, inclined 45°.

| Code   | Colour | Slots   | Box      |
|--------|--------|---------|----------|
| BPJ011 | White  | 11 mm Ø | 500 uds. |

## BPJ - Embedding

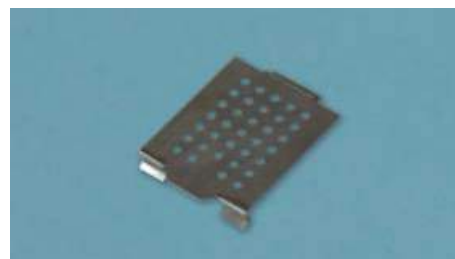
### ▶ Lid for cassettes



1 | Made of stainless steel. For embedding cassettes without lid.

Code

BPJ039

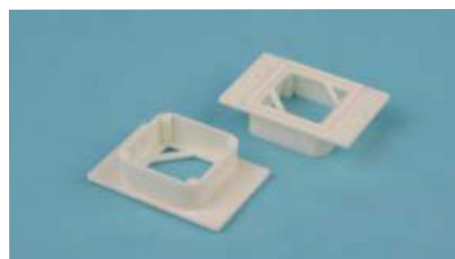


### ▶ Embedding ring



1 | Made of high quality ABS plastic.  
2 | With labelling surface for proper sample identification.

| Code   | Colour | Ring dim. | Base dim. | Box     |
|--------|--------|-----------|-----------|---------|
| BPJ016 | White  | 25X25 mm  | 40X28 mm  | 500 uds |



### ▶ Embedding moulds



1 | Made of stainless steel. Suitable to be used with embedding rings and cassettes.

| Code   | Dimensions |
|--------|------------|
| BPJ040 | 7x7x6 mm   |
| BPJ041 | 15x15x6 mm |
| BPJ042 | 24x24x6 mm |
| BPJ043 | 30x24x6 mm |



## BPL - Staining

### ▶ Hellendahl staining jar



1 | Made of highly resistant pressed glass.  
2 | Glass lid.  
3 | Capacity for 8 slides in vertical position.

| Code   | Description | For slides | Batch |
|--------|-------------|------------|-------|
| BPL001 | Jar         | 76x26mm    | 20    |



## BPL - Staining

## Shiefferdecker staining jar



- 1 | Made of highly resistant pressed glass.
- 2 | Glass lid.
- 3 | Capacity for 10 slides in vertical position.

| Code   | Description | For slides |
|--------|-------------|------------|
| BPL003 | Jar         | 76x26mm    |

## Coplin staining jar



- 1 | Made of highly resistant pressed glass. Glass lid.
- 2 | Capacity for 5 slides in vertical position.

| Code   | Description | For slides |
|--------|-------------|------------|
| BPL005 | Jar         | 76x26mm    |

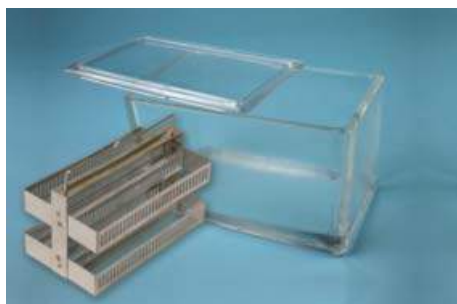
## Staining jar



- 1 | Made of highly resistant pressed glass, with glass lid.
- 2 | Jar with tray and stainless steel handle.
- 3 | Capacity for 10 slides in horizontal position, 20 slides back to back.

| Code   | Description  | Ext. dim.    | Int. dim.   |
|--------|--------------|--------------|-------------|
| BPL010 | Complete jar | 85x70x105 mm | 75x60x95 mm |
| BPL007 | Jar          | 85x70x105 mm | 75x60x95 mm |
| BPL008 | Tray         | 90x68x45     | -           |
| BPL009 | Handle       | -            | -           |

## Hausser Gedik staining jar



- 1 | Set of staining jar and stainless steel support (sold separately).
- 2 | Glass lid.

| Code   | Capacity | Description | Int. dimensions |
|--------|----------|-------------|-----------------|
| BPL012 | 30       | Jar         | 85x85x95 mm     |
| BPL013 | 60       | Jar         | 85x85x150 mm    |
| BPL028 | 60       | Support     | -               |

## BPL - Staining

### Spot plates, porcelain



- 1 | Highly resistant to acids, bases and thermal shock.
- 2 | Glazed surface and sides, wells of 20 mm Ø and 5 mm deep approximately.

| Code   | N° wells | Length | Width |
|--------|----------|--------|-------|
| BPL014 | 6        | 85 mm  | 54 mm |
| BPL015 | 12       | 115 mm | 90 mm |



## BRB - Petri dishes

### Petri dish



- 1 | Made of soda glass. Autoclavable
- 2 | Bottom and lid are flat inside and outside. High transparency.

| Code   | Diameter | Height | Batch |
|--------|----------|--------|-------|
| BRB001 | 40 mm    | 12 mm  | 18    |
| BRB002 | 60 mm    | 15 mm  | 18    |
| BRB003 | 80 mm    | 15 mm  | 18    |
| BRB004 | 100 mm   | 18 mm  | 18    |
| BRB005 | 120 mm   | 20 mm  | 18    |
| BRB006 | 150 mm   | 25 mm  | 18    |



## BRG - Inoculating loops

### Kolle handle



- 1 | Includes 2 loops (Ni-Cr)

| Code   | Length | Handle  | Batch |
|--------|--------|---------|-------|
| BRG009 | 200 mm | Plastic | 10    |
| BRG010 | 290 mm | Metal   | 10    |



### Koll handle, accessories



- 1 | Made of Nickel Chromium

| Code   | Description | Total length | Batch |
|--------|-------------|--------------|-------|
| BRG011 | Loop 3mm Ø  | 43 mm        | 50    |
| BRG012 | Needle      | 48 mm        | 50    |
| BRG013 | Lancet tip  | 59 mm        | 50    |



## BRJ - Counters

### Manual counter



- 1 | Made of metal.
- 2 | Each touch adds a unit.
- 3 | 4 digits for a count up to 9999 cells or particles.

| Code   | Batch |
|--------|-------|
| BRJ001 | 10    |

### Digital counter



- 1 | To count 10 different leukocyte types: basophils, eosinophils, monocytes, lymphocytes, mature and immature neutrophils, promyelocytes, etc.
- 2 | Functions: differential percentage, differential and total count.
- 3 | Count 0-100 for each cellular type. Each touch adds a unit to its screen and the total count.

| Code   | Power supply  |
|--------|---------------|
| BRJ002 | 220 V / 50 Hz |

## BTB - Plastic trays

### Stackable trays, HDPE



- 1 | Made of high density polyethylene.

| Code    | Capacity | Ext. dimensions | Int. dimensions |
|---------|----------|-----------------|-----------------|
| BTB017  | 10 L     | 430x320x95 mm   | 390x290x90 mm   |
| BTB018  | 16 L     | 540x350x110 mm  | 515x325x100 mm  |
| BTB019* | 16 L     | 540x350x110 mm  | 515x325x100 mm  |

\* with draining holes

### Stackable trays, HDPE



- 1 | White colour, tall form.

| Code   | Capacity | Ext. dimensions | Int. dimensions. |
|--------|----------|-----------------|------------------|
| BTB013 | 100 L    | 600x500x445 mm  | 535x450x430 mm   |
| BTB014 | 20 L     | 440x315x200 mm  | 380x280x195 mm   |
| BTB015 | 50 L     | 625x365x285 mm  | 560x330x280 mm   |
| BTB016 | 80 L     | 725x440x330 mm  | 650x380x320 mm   |

### Bucket with spout, LDPE



- 1 | Graduated.
- 2 | Suitable for contact with food.

| Code   | Capacity | Upper Ø | Lower Ø | Height |
|--------|----------|---------|---------|--------|
| BTB030 | 9 L      | 270 mm  | 200 mm  | 250 mm |
| BTB028 | 12 L     | 302 mm  | 220 mm  | 280 mm |
| BTB029 | 17 L     | 335 mm  | 245 mm  | 310 mm |



▶ BTD - Glass jars

▶ Aquarium jar



1 | Ground edge.

| Code   | Height | Lenght | Depth  |
|--------|--------|--------|--------|
| BTD001 | 100 mm | 100 mm | 100 mm |
| BTD002 | 100 mm | 100 mm | 150 mm |
| BTD003 | 100 mm | 100 mm | 200 mm |
| BTD005 | 120 mm | 130 mm | 95 mm  |
| BTD006 | 150 mm | 100 mm | 150 mm |
| BTD007 | 150 mm | 220 mm | 300 mm |
| BTD008 | 160 mm | 160 mm | 300 mm |
| BTD009 | 180 mm | 130 mm | 180 mm |
| BTD010 | 200 mm | 150 mm | 200 mm |
| BTD011 | 220 mm | 180 mm | 250 mm |
| BTD012 | 240 mm | 220 mm | 300 mm |
| BTD013 | 260 mm | 230 mm | 360 mm |



▶ Rectangular jars



1 | Ground edge.

| Code   | Height | Lenght | Depth  |
|--------|--------|--------|--------|
| BTD014 | 100 mm | 50 mm  | 50 mm  |
| BTD015 | 100 mm | 80 mm  | 60 mm  |
| BTD018 | 150 mm | 105 mm | 50 mm  |
| BTD019 | 150 mm | 80 mm  | 60 mm  |
| BTD023 | 200 mm | 130 mm | 80 mm  |
| BTD016 | 120 mm | 105 mm | 50 mm  |
| BTD017 | 150 mm | 100 mm | 100 mm |
| BTD020 | 200 mm | 100 mm | 100 mm |
| BTD022 | 200 mm | 130 mm | 130 mm |
| BTD024 | 225 mm | 200 mm | 100 mm |
| BTD021 | 200 mm | 120 mm | 120 mm |



▶ Lid for rectangular jars.

| Code   | Dimensions |
|--------|------------|
| BTD025 | 50x50 mm   |
| BTD026 | 80x60 mm   |
| BTD027 | 105x50 mm  |
| BTD028 | 130x80 mm  |
| BTD029 | 100x100mm  |
| BTD030 | 130x130 mm |
| BTD031 | 200x100 mm |

▶ Cylindrical jars



| Code   | Diameter | Height |
|--------|----------|--------|
| BTD032 | 80 mm    | 80 mm  |
| BTD033 | 100 mm   | 100mm  |
| BTD034 | 100 mm   | 150 mm |
| BTD035 | 100 mm   | 200 mm |
| BTD036 | 100 mm   | 250 mm |
| BTD037 | 100 mm   | 300 mm |
| BTD038 | 120 mm   | 120 mm |
| BTD039 | 150 mm   | 150 mm |
| BTD040 | 150 mm   | 220 mm |
| BTD041 | 150 mm   | 300 mm |
| BTD044 | 200 mm   | 150 mm |
| BTD045 | 200 mm   | 200 mm |
| BTD046 | 200 mm   | 250 mm |
| BTD048 | 250 mm   | 200 mm |
| BTD049 | 250 mm   | 250 mm |
| BTD042 | 150 mm   | 80 mm  |
| BTD043 | 200 mm   | 100mm  |
| BTD047 | 230 mm   | 100 mm |
| BTD050 | 300 mm   | 250 mm |
| BTD051 | 350 mm   | 250 mm |





## BTQ - Boxes, SS



| Code   | Dimensions   |
|--------|--------------|
| BTQ001 | 170x70x30 mm |



## BTS - Stainless steel baskets



- 1 | For transport, autoclave and ultrasound bath cleaning.  
2 | With thin grid: 5 mm.

| Code   | Description | Dimensions | Height |
|--------|-------------|------------|--------|
| BTS001 | Round       | 150 mm     | 150 mm |
| BTS002 | Round       | 200 mm     | 200 mm |
| BTS003 | Round       | 250 mm     | 250 mm |
| BTS004 | Square      | 150x150 mm | 150 mm |
| BTS005 | Square      | 200x200 mm | 200 mm |
| BTS006 | Square      | 250x250 mm | 250 mm |



## BYF - Transport/storage of samples

## Freezing box for centrifuge tubes



- 1 | Cardboard boxes, they have a printed grid to identify samples.

| Code   | Tubes     | Dimensions           | Batch |
|--------|-----------|----------------------|-------|
| BYF001 | 16*x50 mL | 140,6x140,6x120,2 mm | 48    |
| BYF002 | 49x15 mL  | 130,5x130,5x110,5 mm | 36    |

\* capless

## Freezing box for microtubes



- 1 | Autoclavable polypropylene with transparent lid.  
2 | For microtubes of 0.2 mL.

| Code   | Capacity  | Dimensions      |
|--------|-----------|-----------------|
| BYF003 | 96 (8x12) | 12,6x8,8x3,1 cm |

## Racks for vertical freezers



| Code   | Boxes | Height | Dimensions     |
|--------|-------|--------|----------------|
| BYF066 | 3x3   | 50 mm  | 140x420x165 mm |
| BYF067 | 4x3   | 50 mm  | 140x420x223 mm |
| BYF068 | 5x3   | 50 mm  | 140x420x277 mm |
| BYF069 | 4x4   | 50 mm  | 140x560x223 mm |
| BYF070 | 5x4   | 50 mm  | 140x560x277 mm |
| BYF071 | 3x3   | 75 mm  | 140x420x245 mm |
| BYF072 | 3x4   | 75 mm  | 140x560x245 mm |
| BYF073 | 2x3   | 95 mm  | 140x420x200 mm |
| BYF074 | 2x4   | 95 mm  | 140x560x200 mm |
| BYF075 | 2x3   | 125 mm | 140x420x265 mm |
| BYF076 | 2x4   | 125 mm | 140x560x265 mm |

▶ BYF - Transport/storage of samples

▶ Racks for horizontal freezers

| Code   | Floors | Height | Dimensions     |
|--------|--------|--------|----------------|
| BYF047 | 5      | 50 mm  | 140x140x280 mm |
| BYF048 | 7      | 50 mm  | 140x140x390 mm |
| BYF049 | 8      | 50 mm  | 140x140x445 mm |
| BYF050 | 9      | 50 mm  | 140x140x500 mm |
| BYF051 | 10     | 50 mm  | 140x140x555 mm |
| BYF052 | 11     | 50 mm  | 140x140x610 mm |
| BYF053 | 12     | 50 mm  | 140x140x665 mm |
| BYF054 | 13     | 50 mm  | 140x140x720 mm |
| BYF055 | 5      | 75 mm  | 140x140x405 mm |
| BYF056 | 6      | 75 mm  | 140x140x485 mm |
| BYF057 | 7      | 75 mm  | 140x140x565 mm |
| BYF058 | 8      | 75 mm  | 140x140x645 mm |
| BYF059 | 9      | 75 mm  | 140x140x725 mm |
| BYF060 | 4      | 95 mm  | 140x140x400 mm |
| BYF061 | 5      | 95 mm  | 140x140x500 mm |
| BYF062 | 6      | 95 mm  | 140x140x600 mm |
| BYF063 | 7      | 95 mm  | 140x140x700 mm |
| BYF064 | 4      | 125 mm | 140x140x525 mm |
| BYF065 | 5      | 125 mm | 140x140x655 mm |



▶ Racks with removable trays

| Code   | Boxes | Height | Size           | Boxes up to |
|--------|-------|--------|----------------|-------------|
| BYF024 | 2x3   | 52 mm  | 140x420x116 mm | 133x133 mm  |
| BYF025 | 2x4   | 52 mm  | 140x555x116 mm | 133x133 mm  |
| BYF026 | 3x3   | 52 mm  | 140x420x174 mm | 133x133 mm  |
| BYF027 | 3x4   | 52 mm  | 140x555x174 mm | 133x133 mm  |
| BYF028 | 4x3   | 52 mm  | 140x420x233 mm | 133x133 mm  |
| BYF029 | 4x4   | 52 mm  | 140x555x233 mm | 133x133 mm  |
| BYF030 | 5x3   | 52 mm  | 140x420x290 mm | 133x133 mm  |
| BYF031 | 5x4   | 52 mm  | 140x555x290 mm | 133x133 mm  |
| BYF032 | 6x3   | 52 mm  | 140x420x349 mm | 133x133 mm  |
| BYF033 | 6x4   | 52 mm  | 140x555x349 mm | 133x133mm   |
| BYF034 | 7x3   | 52 mm  | 140x420x406 mm | 133x133mm   |
| BYF035 | 7x4   | 52 mm  | 140x555x406 mm | 133x133 mm  |
| BYF036 | 3x3   | 50 mm  | 143x440x170 mm | 135x135 mm  |
| BYF037 | 4x3   | 50 mm  | 143x440x230 mm | 135x135 mm  |
| BYF038 | 5x3   | 50 mm  | 143x440x285 mm | 135x135 mm  |
| BYF039 | 4x4   | 50 mm  | 143x580x230 mm | 135x135 mm  |
| BYF040 | 5x5   | 50 mm  | 143x580x285 mm | 135x135 mm  |
| BYF041 | 3x3   | 75 mm  | 143x440x250mm  | 135x135 mm  |
| BYF042 | 3x4   | 75 mm  | 143x580x250 mm | 135x135 mm  |
| BYF043 | 2x3   | 95 mm  | 143x440x210 mm | 135x135 mm  |
| BYF044 | 2x4   | 95 mm  | 143x580x210 mm | 135x135 mm  |
| BYF045 | 2x3   | 125 mm | 143x440x275 mm | 135x135 mm  |
| BYF046 | 2x4   | 125 mm | 143x580x275 mm | 135x135 mm  |

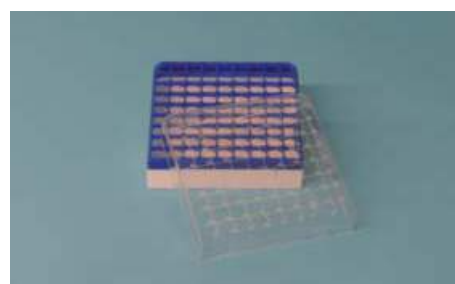


▶ Freezing box for cryotubes



- 1| With transparent lid, made of polycarbonate.
- 2| Numbered positions in lid and base.

| Code   | Capacity        | Dimensions   | Colour |
|--------|-----------------|--------------|--------|
| BYF017 | 81 tubesx1.8 mL | 133x13x52 mm | Red    |
| BYF018 | 81 tubesx1.8 mL | 133x13x52 mm | Green  |
| BYF019 | 81 tubesx1.8 mL | 133x13x52 mm | Yellow |
| BFY020 | 81 tubesx1.8 mL | 133x13x52 mm | Blue   |



LABORATORY  
SUPPLIERS

TRADEMARKS

COMPETITIVITY

SERVICES

STOCK

PRODUCT  
RANGE

**WE REPRESENT  
LEADING BRANDS  
IN THE MARKET**

AUXILAB S.L.

Material de laboratorio  
Laboratory supplies



**ROGO-SAMPAIC**  
matériel de laboratoire

**SOCOREX**  
SWISS



**Kartell**



**SAINT-GOBAIN**  
PERFORMANCE PLASTICS



**AUXILAB  
+ ROGO  
SAMPAIC**

**YOUR BIG LOGISTIC PLATFORM  
OF LABORATORY SUPPLIES  
AND EQUIPMENT**





## [C] INDEX BEAKERS, FLASKS AND OTHER CONTAINERS

|                                             |           |                                               |           |
|---------------------------------------------|-----------|-----------------------------------------------|-----------|
| <b>[CB] Beakers .....</b>                   | <b>36</b> | <b>[CJ] Dropping bottles .....</b>            | <b>51</b> |
| CBB - Glass, tall form .....                | 36        | CJC - Glass .....                             | 51        |
| CBC - Glass, low form .....                 | 36        | <b>[CK] Wash bottles .....</b>                | <b>51</b> |
| CBD - Glass, conical shape .....            | 38        | CKD - Narrow mouth .....                      | 51        |
| CBH - Plastic, moulded grad .....           | 38        | CKL - Stoppers .....                          | 51        |
| CBM - Porcelain, tall form .....            | 38        | <b>[CL] Tanks .....</b>                       | <b>51</b> |
| CBN - Porcelain, low form .....             | 39        | CLD - With dispenser, plastic .....           | 51        |
| <b>[CC] Jars .....</b>                      | <b>39</b> | CLG - Without dispenser, plastic .....        | 53        |
| CCB - Plastic, moulded grad .....           | 39        | <b>[CM] Vials .....</b>                       | <b>53</b> |
| CCL - Porcelain .....                       | 39        | CMB - Injection .....                         | 53        |
| <b>[CD] Flasks .....</b>                    | <b>40</b> | CMD - For pills .....                         | 53        |
| CDB - Erlenmeyer, glass .....               | 40        | CML - Closures for vials .....                | 54        |
| CDG - Flat bottom, glass .....              | 41        | <b>[CN] Evaporation .....</b>                 | <b>54</b> |
| CDJ - Round bottom, glass .....             | 41        | CNB - Capsules, flat, porcelain .....         | 54        |
| <b>[CF] ISO bottles .....</b>               | <b>42</b> | CNG - Capsules, round, porcelain .....        | 54        |
| CFB - Clear glass .....                     | 42        | CNK - Capsules with handle, porcelain .....   | 55        |
| CFD - Amber glass .....                     | 43        | CNL - Evap. dishes with spout, glass .....    | 56        |
| <b>[CG] Bottles, threaded stopper .....</b> | <b>44</b> | CNN - Evap. dishes without spout, glass ..... | 56        |
| CGB - Wide mouth, glass .....               | 44        | <b>[CP] Incineration .....</b>                | <b>57</b> |
| CGD - Wide mouth, plastic .....             | 44        | CPB - Crucibles, tall form, porcelain .....   | 57        |
| CGG - Narrow mouth, glass .....             | 46        | CPC - Crucibles, medium form, porcelain ..... | 57        |
| CGJ - Narrow mouth, plastic .....           | 47        | CPD - Crucibles, low form, porcelain .....    | 58        |
| CGL - Stoppers f/glass bottles .....        | 49        | CPF - Crucibles, lids, porcelain .....        | 58        |
| CGN - Stoppers f/plastic bottles .....      | 50        | CPK - Incineration capsules .....             | 59        |
| <b>[ICH] Bottles, NS stopper .....</b>      | <b>50</b> | CPL - Incineration cuvettes .....             | 60        |
| CHB - Wide mouth, glass .....               | 50        | CPN - Combustion boats .....                  | 60        |
| CHG - Narrow mouth, glass .....             | 50        |                                               |           |

TRADEMARKS:

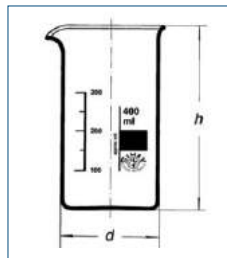


▶ CBB - Glass, tall form

▶ Beakers, with spout



- 1 | Borosilicate glass, graduated
- 2 | According to ISO 3819



| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CBB001 | 25 mL    | 30 mm    | 55 mm  | 10    |
| CBB002 | 50 mL    | 38 mm    | 70 mm  | 10    |
| CBB003 | 100 mL   | 48 mm    | 80 mm  | 10    |
| CBB004 | 150 mL   | 54 mm    | 95 mm  | 10    |
| CBB005 | 250 mL   | 60 mm    | 120 mm | 10    |
| CBB006 | 400 mL   | 70 mm    | 130 mm | 10    |
| CBB007 | 600 mL   | 80 mm    | 150 mm | 10    |
| CBB008 | 800 mL   | 90 mm    | 175 mm | 10    |
| CBB009 | 1000 mL  | 95 mm    | 180 mm | 10    |
| CBB010 | 2000 mL  | 120 mm   | 240 mm | 6     |
| CBB011 | 3000 mL  | 135 mm   | 280 mm | 6     |

▶ Beakers, with spout



- 1 | Borosilicate glass, graduated
- 2 | According to ISO 3819



| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CBB012 | 25 mL    | 30 mm    | 60 mm  | 12    |
| CBB013 | 50 mL    | 38 mm    | 70 mm  | 12    |
| CBB014 | 100 mL   | 48 mm    | 80 mm  | 12    |
| CBB015 | 150 mL   | 54 mm    | 95 mm  | 12    |
| CBB016 | 250 mL   | 60 mm    | 120 mm | 8     |
| CBB017 | 400 mL   | 70 mm    | 130 mm | 8     |
| CBB018 | 600 mL   | 80 mm    | 150 mm | 8     |
| CBB019 | 1000 mL  | 95 mm    | 180 mm | 6     |
| CBB020 | 2000 mL  | -        | -      | 8     |

▶ CBC - Glass, low form

▶ Beakers, intensive use



- 1 | Made of borosilicate glass
- 2 | Reinforced edges and thick walls
- 3 | Double inverse graduation

| Code   | Capacity | Diameter | Height |
|--------|----------|----------|--------|
| CBC009 | 150 ml   | 55 mm    | 90 mm  |
| CBC010 | 250 ml   | 68 mm    | 90 mm  |
| CBC011 | 400 ml   | 79 mm    | 110 mm |
| CBC012 | 600 ml   | 89 mm    | 123 mm |
| CBC013 | 1000 ml  | 105 mm   | 152 mm |
| CBC014 | 2000 ml  | 130 mm   | 196 mm |



▶ CBC - Glass, low form

▶ Beakers, with spout



- 1 | Made of borosilicate glass, graduated
- 2 | According to ISO 3819

| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CBC015 | 25 mL    | 35 mm    | 55 mm  | 12    |
| CBC016 | 50 mL    | 43 mm    | 60 mm  | 12    |
| CBC017 | 100 mL   | 51 mm    | 71 mm  | 12    |
| CBC018 | 150 mL   | 61 mm    | 86 mm  | 12    |
| CBC019 | 250 mL   | 70 mm    | 98 mm  | 8     |
| CBC020 | 400 mL   | 79 mm    | 115 mm | 8     |
| CBC021 | 600 mL   | 90 mm    | 125 mm | 8     |
| CBC022 | 800 mL   | 100 mm   | 135 mm | 6     |
| CBC023 | 1000 mL  | 105 mm   | 145 mm | 6     |
| CBC024 | 2000 mL  | 130 mm   | 185 mm | 2     |
| CBC025 | 3000 mL  | 150 mm   | 210 mm | -     |
| CBC026 | 5000 mL  | 170 mm   | 270 mm | -     |



▶ Boudreau beaker



| Code   | Capacity |
|--------|----------|
| CBC043 | 500 mL   |



▶ Beakers, with spout



- 1 | Made of borosilicate glass, graduated
- 2 | According to ISO 3819

| Code    | Capacity | D (diameter) | H (height) | Batch |
|---------|----------|--------------|------------|-------|
| CBB027  | 5 mL     | 22 mm        | 30 mm      | 10    |
| CBB028  | 10 mL    | 26 mm        | 35 mm      | 10    |
| CBB029  | 25 mL    | 34 mm        | 50 mm      | 10    |
| CBB030  | 50 mL    | 42 mm        | 60 mm      | 10    |
| CBB031  | 100 mL   | 50 mm        | 70 mm      | 10    |
| CBB032  | 150 mL   | 60 mm        | 80 mm      | 10    |
| CBB033  | 250 mL   | 70 mm        | 95 mm      | 10    |
| CBB034  | 400 mL   | 80 mm        | 110 mm     | 10    |
| CBB035  | 600 mL   | 90 mm        | 125 mm     | 10    |
| CBB036  | 800 mL   | 100 mm       | 135 mm     | 10    |
| CBB037  | 1000 mL  | 105 mm       | 145 mm     | 10    |
| CBB038  | 2000 mL  | 130 mm       | 185 mm     | 4     |
| CBB039  | 3000 mL  | 150 mm       | 210 mm     | 4     |
| CBB040  | 5000 mL  | 170 mm       | 270 mm     | 2     |
| CBB041* | 10 L     | 217 mm       | 350 mm     | -     |

\* out of standard



## ▶ CBD - Glass, forma cónica

### ▶ Graduated cone-shape glass



1 | Wide and stable base. With spout

| Code   | Capacity | Diameter | Height |
|--------|----------|----------|--------|
| CBD001 | 50 mL    | 45 mm    | 145 mm |
| CBD002 | 1000 mL  | 130 mm   | 330 mm |
| CBD003 | 2000 mL  | 160 mm   | 370 mm |

### ▶ Graduated cone-shape glass, thick glass



1 | With raised graduation.

| Code   | Capacity |
|--------|----------|
| CBD004 | 60 mL    |
| CBD005 | 125 mL   |
| CBD006 | 250 mL   |
| CBD007 | 500 mL   |

## ▶ CBH - Plastic, moulded graduation

### ▶ Beakers low form, PP



1 | Made of polypropylene, with spout  
2 | Permanently moulded graduation.

| Code   | Cap.    | Graduation | Height | Ø      | Batch |
|--------|---------|------------|--------|--------|-------|
| CBH001 | 50 mL   | 10 mL      | 60 mm  | 42 mm  | 10    |
| CBH002 | 100 mL  | 20 mL      | 70 mm  | 54 mm  | 10    |
| CBH003 | 250 mL  | 50 mL      | 100 mm | 71 mm  | 10    |
| CBH004 | 500 mL  | 100 mL     | 120 mm | 92 mm  | 10    |
| CBH005 | 1000 mL | 100 mL     | 145 mm | 110 mm | 6     |

## ▶ CBM - Porcelain, tall form



1 | With spout

| Code   | Diameter | Volume  | Height |
|--------|----------|---------|--------|
| CBM001 | 52 mm    | 170 mL  | 90 mm  |
| CBM002 | 57 mm    | 225 mL  | 106 mm |
| CBM003 | 70 mm    | 450 mL  | 143 mm |
| CBM004 | 101 mm   | 1100 mL | 157 mm |

## ▶ CBN - Porcelain, low form



### ▶ Porcelain beakers, low form

1 | With spout

| Code   | Diameter | Volume | Height |
|--------|----------|--------|--------|
| CBN001 | 70 mm    | 275 mL | 85 mm  |
| CBN002 | 80 mm    | 400 mL | 99 mm  |
| CBN003 | 90 mm    | 620 mL | 116 mm |
| CBN004 | 100 mm   | 860 mL | 129 mm |
| CBN005 | 123 mm   | 950 mL | 100 mm |



page  
[39]

## ▶ CCB - Plastic, moulded graduation



### ▶ Tall form, PP

- 1 | Polypropylene, moulded graduation
- 2 | Autoclavable at 121°C during 20 minutes
- 3 | With spout and handle for an easy grip

| Code   | Capacity | Batch |
|--------|----------|-------|
| CCB001 | 250 mL   | 12    |
| CCB002 | 500 mL   | 12    |
| CCB003 | 1000 mL  | 6     |
| CCB004 | 2000 mL  | 6     |



### ▶ Low form, PP



- 1 | Polypropylene, moulded graduation
- 2 | Autoclavable
- 3 | With spout and handle for an easy grip

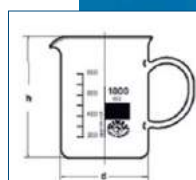
| Code   | Capacity | Batch |
|--------|----------|-------|
| CCB005 | 250 mL   | 12    |
| CCB006 | 500 mL   | 10    |
| CCB007 | 1000 mL  | 6     |
| CCB008 | 2000 mL  | 6     |
| CCB009 | 3000 mL  | 6     |
| CCB010 | 5000 mL  | 4     |



## ▶ CCL - Porcelain



| Code   | Diameter | Volume  | Height |
|--------|----------|---------|--------|
| CCL001 | 71 mm    | 100 mL  | 72 mm  |
| CCL002 | 82 mm    | 250 mL  | 96 mm  |
| CCL003 | 97 mm    | 500 mL  | 131 mm |
| CCL004 | 127 mm   | 1000 mL | 160 mm |



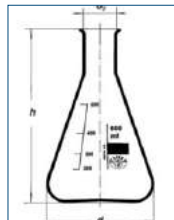


## CDB - Erlenmeyer, glass

## ▶ Narrow neck



1 | According to ISO 1773



| Code   | Cap.    | D1     | D2    | Height | Batch |
|--------|---------|--------|-------|--------|-------|
| CDB001 | 25 ml   | 42 mm  | 22 mm | 75 mm  | 10    |
| CDB002 | 50 ml   | 51 mm  | 22 mm | 90 mm  | 10    |
| CDB003 | 100 ml  | 64 mm  | 22 mm | 105 mm | 10    |
| CDB004 | 200 ml  | 79 mm  | 34 mm | 135 mm |       |
| CDB005 | 250 ml  | 85 mm  | 34 mm | 145 mm | 10    |
| CDB007 | 500 ml  | 105 mm | 34 mm | 180 mm | 10    |
| CDB008 | 1000 ml | 131 mm | 42 mm | 220 mm | 10    |
| CDB009 | 2000 ml | 166 mm | 50 mm | 280 mm | 6     |
| CDB010 | 3000 ml | 187 mm | 50 mm | 310 mm | 6     |
| CDB011 | 5000 ml | 220 mm | 50 mm | 365 mm | 2     |

## ▶ Narrow neck



1 | Narrow neck

2 | Borosilicate glass. Marking area



| Code   | Cap.    | Base Ø | Neck Ø | Height | Batch |
|--------|---------|--------|--------|--------|-------|
| CDB012 | 25 mL   | 45 mm  | 18 mm  | 70 mm  | 24    |
| CDB013 | 50 mL   | 55 mm  | 23 mm  | 80 mm  | 12    |
| CDB014 | 100 mL  | 65 mm  | 30 mm  | 110 mm | 12    |
| CDB015 | 250 mL  | 85 mm  | 32 mm  | 140 mm | 12    |
| CDB016 | 500 mL  | 105 mm | 35 mm  | 185 mm | 8     |
| CDB017 | 1000 mL | 130 mm | 44 mm  | 215 mm | 6     |
| CDB018 | 2000 mL | 170 mm | 40 mm  | 290 mm | 2     |
| CDB019 | 3000 mL | 190 mm | 40 mm  | 310 mm | -     |

## ▶ Reinforced rim



1 | Narrow neck reinforced rim, borosilicate glass

2 | Marking surface



| Code   | Capacity | Base Ø | Neck Ø | Height |
|--------|----------|--------|--------|--------|
| CDB020 | 50 mL    | 51 mm  | 22 mm  | 85 mm  |
| CDB021 | 100 mL   | 64 mm  | 22 mm  | 105 mm |
| CDB022 | 250 mL   | 85 mm  | 34 mm  | 140 mm |
| CDB023 | 500 mL   | 105 mm | 34 mm  | 175 mm |
| CDB024 | 1000 mL  | 131 mm | 42 mm  | 220 mm |
| CDB051 | 2000 mL  | -      | -      | -      |

## ▶ Wide neck



1 | Wide neck, borosilicate glass

2 | Marking area



| Code   | Capacity | Base Ø | Neck Ø | Height |
|--------|----------|--------|--------|--------|
| CDB025 | 50 mL    | 51 mm  | 34 mm  | 85 mm  |
| CDB026 | 100 mL   | 64 mm  | 34 mm  | 110 mm |
| CDB027 | 250 mL   | 85 mm  | 50 mm  | 140 mm |
| CDB028 | 500 mL   | 105 mm | 50 mm  | 170 mm |
| CDB029 | 1000 mL  | 131 mm | 50 mm  | 200 mm |

## ▶ CDB - Erlenmeyer, glass

### ▶ Wide neck



1 | According to ISO 24450

| Code   | Cap.     | D1     | D2    | Height | Batch |
|--------|----------|--------|-------|--------|-------|
| CDB030 | 25 ml*   | 42 mm  | 22 mm | 75 mm  | 10    |
| CDB031 | 50 ml    | 51 mm  | 22 mm | 90 mm  | 10    |
| CDB032 | 100 ml*  | 64 mm  | 22 mm | 105 mm | 10    |
| CDB033 | 250 ml*  | 79 mm  | 34 mm | 135 mm |       |
| CDB034 | 200 ml   | 85 mm  | 34 mm | 145 mm | 10    |
| CDB036 | 1000 ml  | 131 mm | 42 mm | 220 mm | 10    |
| CDB037 | 2000 ml  | 166 mm | 50 mm | 280 mm | 6     |
| CDB038 | 2000 ml* | 187 mm | 50 mm | 310 mm | 6     |

\* These capacities do not correspond to ISO, DIN



page  
[41]

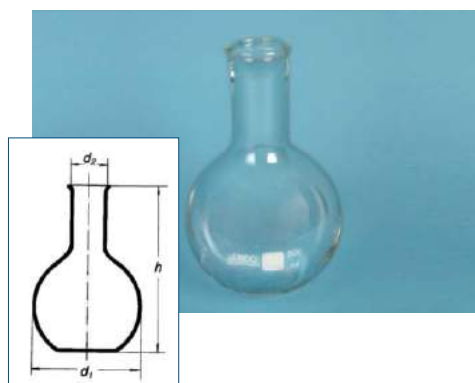
## ▶ CDG - Flat bottom, glass

### ▶ Narrow neck



1 | Made of borosilicate glass with white marking surface

| Code   | Cap.    | d1     | d2    | H      | Batch |
|--------|---------|--------|-------|--------|-------|
| CDG001 | 50 mL   | 50 mm  | 22 mm | 105 mm | 10    |
| CDG002 | 100 mL  | 65 mm  | 22 mm | 108 mm | 12    |
| CDG003 | 250 mL  | 85 mm  | 34 mm | 140 mm | 6     |
| CDG004 | 500 mL  | 105 mm | 34 mm | 180 mm | 6     |
| CDG005 | 1000 mL | 135 mm | 43 mm | 210 mm | 6     |
| CDG006 | 2000 mL | 160 mm | 52 mm | 250 mm | -     |
| CDG007 | 3000 mL | 188 mm | 59 mm | 282 mm | -     |



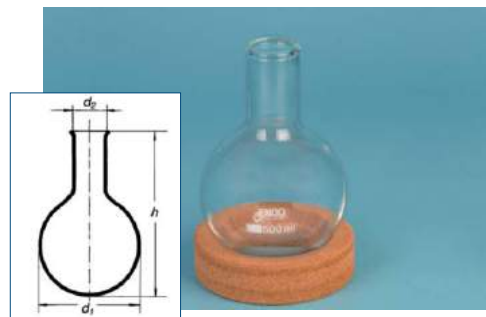
## ▶ CDJ - Round bottom, glass

### ▶ Narrow neck



1 | Made of borosilicate glass. White marking area

| Code   | Cap.    | D1     | D2    | H      | Batch |
|--------|---------|--------|-------|--------|-------|
| CDJ001 | 50 ml   | 50 mm  | 22 mm | 105 mm | 12    |
| CDJ002 | 100 ml  | 65 mm  | 22 mm | 108 mm | 8     |
| CDJ003 | 250 ml  | 85 mm  | 34 mm | 140 mm | 6     |
| CDJ004 | 500 ml  | 105 mm | 34 mm | 180 mm | 6     |
| CDJ005 | 1000 ml | 135 mm | 43 mm | 210 mm | 2     |
| CDJ006 | 2000 ml | 175 mm | 50 mm | 270 mm | -     |
| CDJ007 | 5000 mL | 230 mm | 56 mm | 345 mm | -     |





## CFB - Transparent glass

## ▶ ISO, ECO blue cap



- 1 | Made of soda glass
- 2 | Blue PP outlet ring and cap. White graduation and marking area
- 3 | ISO 4796. DIN GL45 thread

| Code   | Capacity | Base Ø | Height | Batch |
|--------|----------|--------|--------|-------|
| CFB001 | 100 ml   | 56 mm  | 105 mm | 12    |
| CFB002 | 250 ml   | 70 mm  | 143 mm | 12    |
| CFB003 | 500 ml   | 86 mm  | 182 mm | 12    |
| CFB004 | 1000 ml  | 101 mm | 203 mm | 10    |

## ▶ ISO bottle red cap and ring



- 1 | Made of borosilicate glass, graduated
- 2 | DIN GL45 screw cap, silicon lid
- 3 | PBT outlet ring and stopper (heat resistant up to 200°C)
- 4 | ISO 4796-1

| Code   | Cap.    | GL | Ø      | Height | Batch |
|--------|---------|----|--------|--------|-------|
| CFB005 | 100 ml  | 45 | 56 mm  | 105 mm | 10    |
| CFB006 | 250 ml  | 45 | 70 mm  | 143 mm | 10    |
| CFB007 | 500 ml  | 45 | 86 mm  | 181 mm | 10    |
| CFB008 | 1000 ml | 45 | 101 mm | 230 mm | 10    |
| CFB010 | 3800 ml | 45 | 160 mm | 320 mm | -     |

## ▶ ISO bottle blue cap and ring



- 1 | Made of borosilicate glass, graduated
- 2 | DIN GL45 screw cap
- 3 | PP outlet ring and cap (heat resistant up to 140°C)
- 4 | ISO 4796-1

| Code   | Cap.     | GL | Ø      | Height | Batch |
|--------|----------|----|--------|--------|-------|
| CFB023 | 50 mL    | 32 | 46 mm  | 91 mm  | 10    |
| CFB014 | 100 mL   | 45 | 56 mm  | 105 mm | 10    |
| CFB015 | 250 mL   | 45 | 70 mm  | 143 mm | 10    |
| CFB016 | 500 mL   | 45 | 86 mm  | 181 mm | 10    |
| CFB017 | 1000 mL  | 45 | 101 mm | 230 mm | 10    |
| CFB018 | 2000 mL  | 45 | 136 mm | 265 mm | 10    |
| CFB019 | 3800 mL  | 45 | 160 mm | 320 mm | -     |
| CFB020 | 5000 mL  | 45 | 181 mm | 336 mm | 6     |
| CFB021 | 10000 mL | 45 | 227 mm | 416 mm | -     |
| CFB022 | 20000 mL | 45 | 288 mm | 512 mm | -     |



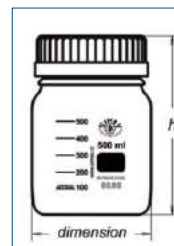
## CFB - Transparent glass

## ISO bottle blue cap and ring, GL80



- 1 | Made of borosilicate glass, graduated. Non autoclavable
- 2 | DIN GL80 screw cap; oval shape
- 3 | ISO 4796-1

| Code   | Cap.    | GL | Dimensions | Height | Batch |
|--------|---------|----|------------|--------|-------|
| CFB024 | 500 ml  | 80 | 94x94 mm   | 139 mm | 10    |
| CFB025 | 1000 ml | 80 | 105x105 mm | 185 mm | 10    |
| CFB026 | 2000 ml | 80 | 225x115 mm | 258 mm | 10    |
| CFB027 | 5000 ml | 80 | 160x160 mm | 357 mm | 10    |

page  
[43]

## ISO bottles, plastic coated



- 1 | Plastic coated to provide a higher protection against breaks, liquid leaks and light. Ideal for dangerous substances
- 2 | For a working temperature between -30°C and +135°C

| Code   | Capacity | GL | Ø      | Height |
|--------|----------|----|--------|--------|
| CFB028 | 100 mL   | 45 | 56 mm  | 105 mm |
| CFB029 | 250 mL   | 45 | 70 mm  | 143 mm |
| CFB030 | 500 mL   | 45 | 86 mm  | 181 mm |
| CFB031 | 1000 mL  | 45 | 101 mm | 230 mm |
| CFB032 | 2000 mL  | 45 | 136 mm | 256 mm |



## ISO bottles, for pressure



- 1 | Resistant to pressure from -1 to +1.5 bar
- 2 | Heat resistant up to 135°C

| Code   | Capacity | GL | Ø      | Height |
|--------|----------|----|--------|--------|
| CFB033 | 1000 mL  | 45 | 108 mm | 236 mm |
| CFB034 | 2000 mL  | 45 | 143 mm | 266 mm |



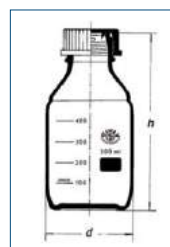
## CFD - Amber glass

## ISO bottle blue cap and ring



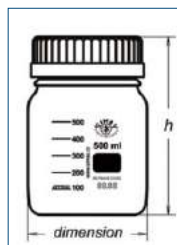
- 1 | Made of amber borosilicate glass, graduated
- 2 | DIN GL45 screw cap
- 3 | PP pouring ring and cap (heat resistant up to 140°C)
- 4 | ISO 4796-1

| Code   | Cap.     | GL | Ø      | Height | Batch |
|--------|----------|----|--------|--------|-------|
| CFD011 | 50 ml    | 32 | 46 mm  | 91 mm  | 10    |
| CFD001 | 100 mL   | 45 | 56 mm  | 105 mm | 10    |
| CFD002 | 250 mL   | 45 | 70 mm  | 143 mm | 10    |
| CFD003 | 500 mL   | 45 | 86 mm  | 182 mm | 10    |
| CFD004 | 1000 mL  | 45 | 101 mm | 203 mm | 10    |
| CFD005 | 2000 mL  | 45 | 136 mm | 260 mm | 10    |
| CFD006 | 3800 mL  | 45 | 160 mm | 320 mm | -     |
| CFD007 | 5000 mL  | 45 | 181 mm | 330 mm | 6     |
| CFD008 | 10000 mL | 45 | 227 mm | 410 mm | -     |
| CFD009 | 20L      | 45 | 288 mm | 512 mm | -     |



## CFD - Amber glass

### ISO bottle blue cap and ring, GL80



- 1 | Made of amber borosilicate glass, graduated. Non autoclavable
- 2 | DIN GL80 screw cap; oval shape
- 3 | PP outlet ring and cap (heat resistant up to 140°C)
- 4 | ISO 4796-1

| Code   | Cap.    | Dimensions | Height | Batch |
|--------|---------|------------|--------|-------|
| CFD012 | 500 ml  | 94x94 mm   | 139 mm | 10    |
| CFD013 | 1000 ml | 105x105 mm | 185 mm | 10    |
| CFD014 | 2000 ml | 115x115 mm | 258 mm | 10    |
| CFD015 | 5000 ml | 160x160 mm | 357 mm | 10    |

## CGB - Wide neck

### Tins with metal lid



- 1 | Flat base and wide neck

| Code   | Capacity | Height | Neck Ø | Batch |
|--------|----------|--------|--------|-------|
| CGB001 | 125 mL   | 50 mm  | 60 mm  | 210   |
| CGB002 | 250 mL   | 90 mm  | 70 mm  | 120   |
| CGB003 | 500 mL   | 110 mm | 70 mm  | 60    |
| CGB004 | 1000 mL  | 170 mm | 70 mm  | 36    |
| CGB005 | 2000 mL  | 210 mm | 100 mm | 24    |
| CGB006 | 4000 mL  | 260 mm | 100 mm | 12    |

## CGD - Wide neck, plastic

### Graduated wide neck bottle



- 1 | Made of high density polyethylene, neutral colour
- 2 | Product suitable for contact with food

| Code   | Capacity | Graduation | Height | Neck Ø  |
|--------|----------|------------|--------|---------|
| CGD052 | 50 ml    | 10 mL      | 77 mm  | 24 mm   |
| CGD053 | 100 ml   | 20 mL      | 89 mm  | 24 mm   |
| CGD054 | 250 ml   | 25 mL      | 126 mm | 34.5 mm |
| CGD055 | 500 ml   | 50 mL      | 161 mm | 34.5 mm |
| CGD056 | 1000 ml  | 100 mL     | 201 mm | 45 mm   |
| CGD057 | 2000 ml  | 100 mL     | 250 mm | 45 mm   |

### Square graduated bottles



- 1 | Made of high density polyethylene, neutral colour
- 2 | Product suitable for contact with food

| Code   | Cap.    | Grad.  | Dim.       | Neck Ø  |
|--------|---------|--------|------------|---------|
| CGD058 | 25 ml   | 5 mL   | 30x32 mm   | 18.5 mm |
| CGD059 | 50 ml   | 10 mL  | 35x37 mm   | 24 mm   |
| CGD060 | 100 ml  | 20 mL  | 44x47 mm   | 34.5 mm |
| CGD061 | 250 ml  | 50 mL  | 57x60 mm   | 34.5 mm |
| CGD062 | 500 ml  | 100 mL | 70x80 mm   | 45 mm   |
| CGD063 | 1000 ml | 100 mL | 82x102 mm  | 60 mm   |
| CGD064 | 2000 ml | 100 mL | 100x134 mm | 60 mm   |

## CGD - Wide neck, plastic

### Cylindrical jar with ribbed cap



- 1| Made of high density polyethylene, neutral colour
- 2| Product suitable for contact with food

| Code   | Capacity | Diameter | Height | Neck Ø |
|--------|----------|----------|--------|--------|
| CGD043 | 70 ml    | 50 mm    | 60 mm  | 36 mm  |
| CGD044 | 120 ml   | 57 mm    | 70 mm  | 36 mm  |
| CGD045 | 250 ml   | 67 mm    | 90 mm  | 50 mm  |
| CGD046 | 500 ml   | 91 mm    | 103 mm | 70 mm  |
| CGD047 | 1000 ml  | 110 mm   | 127 mm | 86 mm  |
| CGD048 | 2000 ml  | 125 mm   | 185 mm | 85 mm  |



### Wide neck bottles, PE



- 1| Made of high density polyethylene, neutral colour
- 2| Product suitable for contact with food

| Code   | GL | Cap.    | Neck Ø  | Height | Batch |
|--------|----|---------|---------|--------|-------|
| CGD066 | 32 | 50 ml   | 24 mm   | 77 mm  | 500   |
| CGD068 | 32 | 100 ml  | 24 mm   | 92 mm  | 500   |
| CGD067 | 40 | 250 ml  | 31 mm   | 123 mm | 200   |
| CGD065 | 50 | 500 ml  | 38,5 mm | 153 mm | 100   |
| CGD069 | 65 | 1000 ml | 50 mm   | 202 mm | 100   |
| CGD070 | 65 | 2000 ml | 50 mm   | 243 mm | 50    |



### Wide neck bottles, PP



- 1| Made of polypropylene, neutral colour
- 2| Product suitable for contact with food

| Code   | GL | Cap.    | Neck Ø  | Height | Batch |
|--------|----|---------|---------|--------|-------|
| CGD071 | 32 | 50 ml   | 24 mm   | 77 mm  | 500   |
| CGD072 | 32 | 100 ml  | 24 mm   | 92 mm  | 500   |
| CGD073 | 40 | 250 ml  | 31 mm   | 123 mm | 200   |
| CGD074 | 50 | 500 ml  | 38.5 mm | 153 mm | 100   |
| CGD075 | 65 | 1000 ml | 50 mm   | 202 mm | 100   |
| CGD076 | 65 | 2000 ml | 50 mm   | 243 mm | -     |



### Bottles with sealing cap



- 1| Made of high density polyethylene, neutral colour
- 2| Product suitable for contact with food

| Code   | Capacity | Diameter | Height | Neck Ø |
|--------|----------|----------|--------|--------|
| CGD049 | 250 ml   | 60 mm    | 140 mm | 30 mm  |
| CGD050 | 500 ml   | 74 mm    | 179 mm | 30 mm  |
| CGD051 | 1000 ml  | 90 mm    | 218 mm | 30 mm  |





## CGG - Narrow neck, glass

DIN28, thread dimensions



## DIN28, transparent



- 1 | Made of soda glass type III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Cap.    | Height | Base Ø | Batch      |
|--------|---------|--------|--------|------------|
| CGG001 | 30 mL   | 67 mm  | 35 mm  | <b>108</b> |
| CGG002 | 60 mL   | 94 mm  | 39 mm  | <b>88</b>  |
| CGG003 | 125 mL  | 114 mm | 49 mm  | <b>60</b>  |
| CGG004 | 250 mL  | 143 mm | 62 mm  | <b>49</b>  |
| CGG005 | 500 mL  | 177 mm | 77 mm  | <b>30</b>  |
| CGG006 | 1000 mL | 216 mm | 97 mm  | <b>20</b>  |

\* check available caps

## DIN28, amber

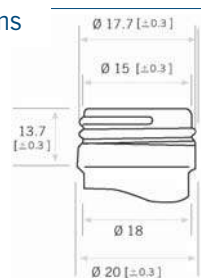


- 1 | Made of soda glass type III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Cap.    | Height | Base Ø | Batch      |
|--------|---------|--------|--------|------------|
| CGG007 | 30 mL   | 67 mm  | 35 mm  | <b>110</b> |
| CGG008 | 60 mL   | 94 mm  | 39 mm  | <b>100</b> |
| CGG009 | 100 mL  | 114 mm | 49 mm  | <b>72</b>  |
| CGG010 | 125 mL  | 114 mm | 49 mm  | <b>70</b>  |
| CGG011 | 250 mL  | 143 mm | 62 mm  | <b>60</b>  |
| CGG012 | 500 mL  | 177 mm | 77 mm  | <b>35</b>  |
| CGG013 | 1000 mL | 216 mm | 97 mm  | <b>20</b>  |

\* check available caps

DIN18, thread dimensions



## DIN18, transparent



- 1 | Made of soda glass type III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Cap.   | Height | Base Ø | Batch      |
|--------|--------|--------|--------|------------|
| CGG014 | 5 ml   | 50 mm  | 22 mm  | <b>255</b> |
| CGG015 | 10 ml  | 58 mm  | 25 mm  | <b>192</b> |
| CGG016 | 15 ml  | 65 mm  | 28 mm  | <b>100</b> |
| CGG017 | 30 ml  | 79 mm  | 33 mm  | <b>110</b> |
| CGG018 | 50 ml  | 92 mm  | 37 mm  | <b>88</b>  |
| CGG019 | 100 ml | 112 mm | 44 mm  | <b>70</b>  |

\* check available caps

## CGG - Narrow neck, glass

### DIN18, amber



- 1 | Made of soda glass type III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Cap.   | Height | Base Ø | Batch      |
|--------|--------|--------|--------|------------|
| CGG020 | 5 ml   | 50 mm  | 22 mm  | <b>255</b> |
| CGG021 | 10 ml  | 58 mm  | 25 mm  | <b>192</b> |
| CGG022 | 15 ml  | 65 mm  | 28 mm  | <b>156</b> |
| CGG023 | 30 ml  | 79 mm  | 33 mm  | <b>110</b> |
| CGG053 | 50 ml  | 92 mm  | 37 mm  | <b>88</b>  |
| CGG054 | 100 ml | 112 mm | 44 mm  | <b>70</b>  |

\* CHECK AVAILABLE CAPS



page  
[47]

### DIN18, cobalt blue



- 1 | Made of soda glass type III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Cap.   | Height | Base Ø | Batch      |
|--------|--------|--------|--------|------------|
| CGG026 | 5 ml   | 50 mm  | 22 mm  | <b>255</b> |
| CGG027 | 10 ml  | 58 mm  | 25 mm  | <b>192</b> |
| CGG028 | 15 ml  | 65 mm  | 28 mm  | <b>156</b> |
| CGG029 | 30 ml  | 79 mm  | 33 mm  | <b>110</b> |
| CGG053 | 50 ml  | 92 mm  | 37 mm  | <b>88</b>  |
| CGG054 | 100 ml | 112 mm | 44 mm  | <b>70</b>  |

\* CHECK AVAILABLE CAPS



### DIN18, green



- 1 | Made of soda glass type III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Cap.  | Height | Base Ø | Batch      |
|--------|-------|--------|--------|------------|
| CGG030 | 5 ml  | 50 mm  | 22 mm  | <b>255</b> |
| CGG031 | 10 ml | 58 mm  | 25 mm  | <b>192</b> |
| CGG032 | 15 ml | 65 mm  | 28 mm  | <b>156</b> |
| CGG033 | 30 ml | 79 mm  | 33 mm  | <b>110</b> |

\* CHECK AVAILABLE CAPS



## CGJ - Narrow neck, plastic

### Graduated bottles with cap



- 1 | Made of high density polyethylene
- 2 | Neutral colour

| Code   | Capacity | Graduation | Neck Ø  | Height |
|--------|----------|------------|---------|--------|
| CGJ033 | 50 ml    | 10 mL      | 18,5 mm | 76 mm  |
| CGJ034 | 100 ml   | 20 mL      | 18,5 mm | 115 mm |
| CGJ035 | 250 ml   | 25 mL      | 23 mm   | 138 mm |
| CGJ036 | 500 ml   | 50 mL      | 23 mm   | 165 mm |
| CGJ037 | 1000 ml  | 100 mL     | 34,5 mm | 213 mm |
| CGJ038 | 2000 ml  | 100 mL     | 34,5 mm | 273 mm |





## CGJ - Narrow neck, plastic

## Bottles with cap, PP



- 1 | Made of polypropylene, non graduated
- 2 | Neutral colour, it can be filled with substances at high temperature
- 3 | Autoclavable at 121°C

| Code   | Cap.    | GL   | Neck Ø | Height | Batch |
|--------|---------|------|--------|--------|-------|
| CGJ042 | 20 ml   | GL14 | 9 mm   | 57 mm  | 500   |
| CGJ043 | 100 ml  | GL18 | 13 mm  | 102 mm | 500   |
| CGJ044 | 250 ml  | GL25 | 18 mm  | 138 mm | 250   |
| CGJ045 | 500 ml  | GL25 | 18 mm  | 169 mm | 100   |
| CGJ046 | 1000 ml | GL28 | 21 mm  | 212 mm | 50    |

## Grey bottles, PE



- 1 | Made of high density polyethylene
- 2 | Dark grey colour
- 3 | Product suitable for contact with food

| Code   | Capacity | Diameter | Neck Ø  | Height |
|--------|----------|----------|---------|--------|
| CGJ052 | 250 ml   | 60 mm    | 23 mm   | 138 mm |
| CGJ053 | 500 ml   | 74 mm    | 23 mm   | 165 mm |
| CGJ054 | 1000 ml  | 93 mm    | 34,5 mm | 213 mm |
| CGJ055 | 2000 ml  | 116 mm   | 34,5 mm | 273 mm |

## Sealing cap, HDPE



- 1 | Made of high density polyethylene
- 2 | Neutral colour
- 3 | Product suitable for contact with food

| Code   | Capacity | Diameter | Neck Ø | Height |
|--------|----------|----------|--------|--------|
| CGJ039 | 250 ml   | 60 mm    | 22 mm  | 136 mm |
| CGJ040 | 500 ml   | 74 mm    | 22 mm  | 170 mm |
| CGJ041 | 1000 ml  | 90 mm    | 22 mm  | 222 mm |

## Standardized neck without cap



- 1 | Made of high density polyethylene
- 2 | Neutral colour
- 3 | Product suitable for contact with food
- 4 | Depending on the cap, they can be used as simple bottles, wash bottles or dropping bottles (SEE PICTURE)

| Code   | GL | Capacity | Diameter | Neck Ø | Height |
|--------|----|----------|----------|--------|--------|
| CGJ047 | 18 | 50ml     | 40 mm    | 13 mm  | 84 mm  |
| CGJ048 | 18 | 100ml    | 45 mm    | 13 mm  | 102 mm |
| CGJ056 | 25 | 250ml    | 60 mm    | 18 mm  | 138 mm |
| CGJ049 | 25 | 500ml    | 75 mm    | 18 mm  | 169 mm |
| CGJ050 | 28 | 1000ml   | 95 mm    | 21 mm  | 212 mm |
| CGJ051 | 28 | 2000ml   | 120 mm   | 21 mm  | 260 mm |







## CGL - Stoppers for glass bottles



## ▶ Safety stopper for DIN18 bottles

- 1 | Made of polyethylene
- 2 | Safety stopper with seal, with removable inner dropper

| Code   | Description           |
|--------|-----------------------|
| CGL001 | Inner dropper, white  |
| CGL002 | Inner dropper, yellow |



## ▶ Dropping stopper for DIN18 bottles

- 1 | Polyethylene stopper with seal
- 2 | Silicone teat, glass tube

| Code   | Description        |
|--------|--------------------|
| CGL003 | For bottles 5 mL   |
| CGL004 | For bottles 10 mL  |
| CGL005 | For bottles 15 ml  |
| CGL006 | For bottles 30 mL  |
| CGL007 | For bottles 50 mL  |
| CGL008 | For bottles 100 mL |



## ▶ Safety cap for bottles DIN28

| Code   | Description            |
|--------|------------------------|
| CGL009 | White safety screw cap |



## ▶ Screw cap for DIN28 bottles

- 1 | Polypropylene caps with seal, in various colours

| Code   | Cap colour | Seal colour |
|--------|------------|-------------|
| CGL010 | Black      | Black       |
| CGL011 | White      | Red         |
| CGL012 | Blue       | White       |
| CGL013 | Red        | White       |
| CGL014 | Green      | White       |
| CGL015 | Yellow     | White       |



## ▶ Dropping plastic stopper for DIN28 bottles

- 1 | Made of polypropylene; the tube can be cut to adapt to bottles from 1000 ml to 30 ml
- 2 | With seal

| Code   | Colour |
|--------|--------|
| CGL019 | Blue   |





## CGL - Stoppers for glass bottles

## Dropping stopper glass tube for DIN28



1 | Polypropylene cap with seal, silicon teat and glass tube



| Code   | For bottles of |
|--------|----------------|
| CGL020 | 30 mL          |
| CGL021 | 60 mL          |
| CGL022 | 125 mL         |



## CGN - Stoppers for plastic bottles

## Screw caps for bottles



1 | With holes for safety seals

2 | Made of PE



| Code   | GL | Batch |
|--------|----|-------|
| CGN011 | 18 | 50    |
| CGN012 | 25 | 50    |
| CGN013 | 28 | 50    |



## CHB - Wide neck, glass

## Glass bottles, plastic stopper



| Code   | Glass       | Cap.    | Base Ø | Height | Batch |
|--------|-------------|---------|--------|--------|-------|
| CHB001 | Transparent | 100 ml  | 54 mm  | 95 mm  | 12    |
| CHB005 | Amber       | 100 ml  | 54 mm  | 95 mm  | 12    |
| CHB002 | Transparent | 250 ml  | 74 mm  | 125 mm | 6     |
| CHB006 | Amber       | 250 ml  | 74 mm  | 125 mm | 6     |
| CHB003 | Transparent | 500 ml  | 88 mm  | 165 mm | 6     |
| CHB007 | Amber       | 500 ml  | 88 mm  | 165 mm | 6     |
| CHB004 | Transparent | 1000 ml | 112 mm | 200 mm | 6     |
| CHB008 | Amber       | 1000 ml | 112 mm | 200 mm | 6     |



## CHG - Narrow neck, glass

## Glass bottles, plastic stopper



| Code   | Glass       | Cap.    | Base Ø | Height | Batch |
|--------|-------------|---------|--------|--------|-------|
| CHG001 | Transparent | 100 ml  | 54 mm  | 95 mm  | 12    |
| CHG005 | Amber       | 100 ml  | 54 mm  | 95 mm  | 12    |
| CHG002 | Transparent | 250 ml  | 74 mm  | 125 mm | 6     |
| CHG006 | Amber       | 250 ml  | 74 mm  | 125 mm | 6     |
| CHG003 | Transparent | 500 ml  | 88 mm  | 165 mm | 6     |
| CHG007 | Amber       | 500 ml  | 88 mm  | 165 mm | 6     |
| CHG004 | Transparent | 1000 ml | 112 mm | 200 mm | 6     |
| CHG008 | Amber       | 1000 ml | 112 mm | 200 mm | 6     |

## CJC - Dropper, glass



| Code   | Glass   | Capacity | Ø       | RIN   | Batch |
|--------|---------|----------|---------|-------|-------|
| CJC001 | Transp. | 50mL     | 41,5 mm | 14/15 | 30    |
| CJC002 | Amber   | 50mL     | 41,5 mm | 14/15 | 30    |

\* check for more capacities



page  
[51]

## CKD - Narrow neck

### Wash bottle, PE



- 1 | Tube with removable tip
- 2 | Product suitable for contact with food

| Code   | Capacity | Ø     | Height | Batch |
|--------|----------|-------|--------|-------|
| CKD006 | 100 ml   | 42 mm | 218 mm | -     |
| CKD007 | 250 ml   | 58 mm | 213 mm | 10    |
| CKD008 | 500 ml   | 70 mm | 218 mm | 10    |
| CKD009 | 1000 ml  | 90 mm | 270 mm | -     |



## CKL - Caps

### For wash bottles



- 1 | For standardized narrow neck bottles

| Code   | DIN | Batch |
|--------|-----|-------|
| CKL004 | 18  | 50    |
| CKL005 | 25  | 50    |
| CKL006 | 28  | 50    |



### Spout dropping cap



- 1 | For standardized narrow neck bottles

| Code   | Spout type | GL | Batch |
|--------|------------|----|-------|
| CKL007 | Short      | 18 | 50    |
| CKL008 | Short      | 25 | 50    |
| CKL009 | Long       | 18 | 50    |
| CKL010 | Long       | 25 | 50    |
| CKL011 | Long       | 28 | 50    |



## CLD - With tap, plastic

### Round aspirator bottle with tap, HDPE



- 1 | Made of high density polyethylene
- 2 | It can be used at temperatures below zero
- 3 | They are provided with a 3/4" tap that assembles to the bottle with a deep 12 mm thread.

| Code   | Capacity | Int. Ø | Height | Neck Ø |
|--------|----------|--------|--------|--------|
| CLD013 | 5 L      | 167 mm | 355 mm | 51 mm  |
| CLD014 | 10 L     | 212 mm | 430 mm | 51 mm  |
| CLD015 | 25 L     | 275 mm | 580 mm | 80 mm  |
| CLD016 | 50 L     | 350 mm | 715 mm | 80 mm  |





## CLD - With tap, plastic

## ▶ Tap for round storage bottles HDPE



1 | 3/4" BSP thread

Code

CLD017

## ▶ Tank with spigot, HDPE



- 1 | Made of high density polyethylene
- 2 | Product suitable for contact with food
- 3 | It is supplied with spigot

| Code   | Capacity  | Dim. (LxWxH) | Neck Ø |
|--------|-----------|--------------|--------|
| CLD018 | 10 liters | 28x14x34 mm  | 44 mm  |
| CLD019 | 20 liters | 32x18x45 mm  | 46 mm  |

## ▶ Bottle with spigot adaptable



- 1 | Made of high density polyethylene
- 2 | They can be used at temperatures below zero
- 3 | They are supplied without spigot

| Code   | Capacity | Int. Ø | Height | Neck Ø |
|--------|----------|--------|--------|--------|
| CLD009 | 5 l      | 167 mm | 355 mm | 51 mm  |
| CLD010 | 10 l     | 212 mm | 430 mm | 51 mm  |
| CLD011 | 25 l     | 275 mm | 580 mm | 80 mm  |
| CLD012 | 50 l     | 350 mm | 715 mm | 80 mm  |

## ▶ Wide neck carboy bottle



- 1 | Made of high density polyethylene
- 2 | They have a resistant handle for transportation

| Code   | Capacity  | Ø      | Height | Neck Ø |
|--------|-----------|--------|--------|--------|
| CLG009 | 5 liters  | 167 mm | 350 mm | 85 mm  |
| CLG010 | 10 liters | 210 mm | 420 mm | 100 mm |

## CLG - Without tap, plastic

### Stackable HDPE tank



- 1 | Made of high density polyethylene
- 2 | Neutral colour, product suitable for contact with food
- 3 | They meet the regulations for the transport of dangerous substances: ADR-RID (by land), IMO-IMDG (sea), and IATA-ACOA (air)

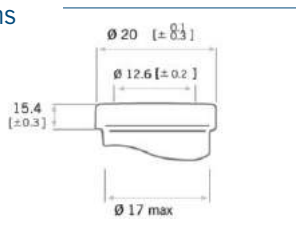
| Code   | Capacity  | GL | Dimensions     |
|--------|-----------|----|----------------|
| CLG011 | 5 liters  | 51 | 163x187x236 mm |
| CLG012 | 10 liters | 51 | 187x227x320 mm |
| CLG013 | 20 liters | 51 | 236x288x380 mm |



page  
[53]

## CMB - Injection

### Vials, thread dimensions



### Injection vials

- 1 | Made of soda glass type II, III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Glass       | Capacity | Base Ø  | Batch |
|--------|-------------|----------|---------|-------|
| CMB001 | Transparent | 7 mL     | 22 mm   | 266   |
| CMB002 | Transparent | 8 mL     | 23 mm   | 234   |
| CMB003 | Transparent | 10 mL    | 25 mm   | 192   |
| CMB004 | Transparent | 15 mL    | 26.5 mm | 165   |
| CMB005 | Transparent | 20 mL    | 32 mm   | 120   |
| CMB006 | Transparent | 30 mL    | 36 mm   | 92    |
| CMB007 | Transparent | 50 mL    | 42.5 mm | 84    |
| CMB008 | Transparent | 100 mL   | 51.6 mm | 66    |
| CMB009 | Amber       | 10 mL    | 25 mm   | 192   |
| CMB010 | Amber       | 20 mL    | 32 mm   | 120   |
| CMB011 | Amber       | 30 mL    | 36 mm   | 92    |
| CMB012 | Amber       | 50 mL    | 42.5 mm | 84    |
| CMB013 | Amber       | 100 mL   | 51.6 mm | 66    |



## CMD - Pillboxes

### Pillboxes



- 1 | Made of soda glass type II, III
- 2 | Meet European Pharmacopoeia and United States specifications

| Code   | Glass | Capacity | Neck Ø |
|--------|-------|----------|--------|
| CMD001 | Amber | 18 mL    | 30 mm  |



**CML - Caps for vials**

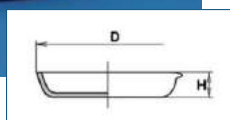
## ▶ Caps for injection vials



| Code   | Description                       |
|--------|-----------------------------------|
| CML010 | Rubber closure for injection vial |
| CML011 | Cap for injection vial            |

**CNB - Evaporating dishes, flat bottom, porcelain**

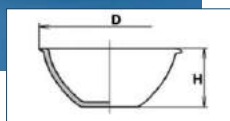
## ▶ Evaporating dishes low form



1 | With spout. Glazed inside and outside, except for base

| Code   | Capacity | Ø      | Height | Batch |
|--------|----------|--------|--------|-------|
| CNB001 | 10 ml    | 50 mm  | 10 mm  | 5     |
| CNB002 | 20 ml    | 60 mm  | 14 mm  | 5     |
| CNB003 | 28 ml    | 75 mm  | 15 mm  | 5     |
| CNB004 | 55 ml    | 80 mm  | 20 mm  | 5     |
| CNB005 | 110 ml   | 100 mm | 25 mm  | 5     |
| CNB006 | 250 ml   | 130 mm | 30 mm  | 5     |
| CNB007 | 450 ml   | 160 mm | 40 mm  | 5     |
| CNB008 | 1100 ml  | 200 mm | 55 mm  | -     |
| CNB009 | 1750 ml  | 250mm  | 55 mm  | -     |

## ▶ Evaporating dishes flat bottom



1 | With spout. Glazed inside and outside, except for base

| Code   | Capacity | Ø      | Height | Batch |
|--------|----------|--------|--------|-------|
| CNB010 | 22 mL    | 54 mm  | 22 mm  | 5     |
| CNB011 | 62 mL    | 70 mm  | 30 mm  | 5     |
| CNB012 | 93 mL    | 86 mm  | 33 mm  | 5     |
| CNB013 | 154 mL   | 98 mm  | 40 mm  | 5     |
| CNB014 | 265 mL   | 112 mm | 50 mm  | 5     |
| CNB015 | 330 mL   | 126 mm | 53 mm  | 5     |
| CNB016 | 450 mL   | 145 mm | 55 mm  | 5     |
| CNB017 | 620 mL   | 151 mm | 63 mm  | 5     |
| CNB018 | 800 mL   | 169 mm | 68 mm  | -     |
| CNB019 | 1000 mL  | 195 mm | 74 mm  | -     |
| CNB020 | 25000 mL | 254 mm | 105 mm | -     |

**CNG - Evaporating dishes, round bottom, porcelain**

## ▶ Evaporating dishes round bottom



| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CNG001 | 15 mL    | 47 mm    | 20 mm  | 40    |
| CNG002 | 35 mL    | 60 mm    | 25 mm  | 20    |
| CNG003 | 50 mL    | 70 mm    | 28 mm  | 10    |
| CNG004 | 60 mL    | 74 mm    | 30 mm  | 10    |
| CNG005 | 75 mL    | 82 mm    | 32 mm  | 10    |
| CNG006 | 100 mL   | 90 mm    | 35 mm  | 10    |
| CNG007 | 125 mL   | 98 mm    | 38 mm  | 10    |
| CNG008 | 140 mL   | 100 mm   | 39 mm  | 10    |
| CNG009 | 150 mL   | 104 mm   | 40 mm  | 10    |
| CNG010 | 200 mL   | 110 mm   | 44 mm  | 10    |
| CNG011 | 270 mL   | 120 mm   | 49 mm  | 10    |
| CNG012 | 300 mL   | 126 mm   | 52 mm  | 10    |
| CNG013 | 400 mL   | 150 mm   | 58 mm  | 6     |
| CNG014 | 1000 mL  | 206 mm   | 64 mm  | 3     |



## CNG - Evaporating dishes, round bottom, porcelain

### ▶ Evaporating dishes round bottom



1| With spout. Glazed inside and outside except for base

| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CNG015 | 10 mL    | 40 mm    | 16 mm  | 5     |
| CNG016 | 20 mL    | 50 mm    | 20 mm  | 5     |
| CNG017 | 30 mL    | 63 mm    | 25 mm  | 5     |
| CNG018 | 60 mL    | 80 mm    | 32 mm  | 5     |
| CNG019 | 107 mL   | 81 mm    | 38 mm  | 5     |
| CNG020 | 140 mL   | 94 mm    | 42 mm  | 5     |
| CNG021 | 150 mL   | 100 mm   | 40 mm  | 5     |
| CNG022 | 232 mL   | 112 mm   | 47 mm  | 5     |
| CNG023 | 285 mL   | 125 mm   | 50 mm  | 5     |
| CNG024 | 300 mL   | 132 mm   | 55 mm  | 5     |
| CNG025 | 400 mL   | 138 mm   | 61 mm  | 5     |
| CNG026 | 580 mL   | 160 mm   | 64 mm  | 5     |
| CNG027 | 700 mL   | 170 mm   | 74 mm  | -     |
| CNG028 | 1300 mL  | 202 mm   | 86 mm  | -     |
| CNG029 | 6000 mL  | 320 mm   | 140 mm | -     |



page  
[55]

### ▶ Evaporating dishes round bottom



1| With spout. Glazed inside and outside except for base

| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CNG030 | 41 mL    | 72 mm    | 26 mm  | 5     |
| CNG031 | 62 mL    | 83 mm    | 27 mm  | 5     |
| CNG032 | 110 mL   | 96 mm    | 30 mm  | 5     |
| CNG033 | 160 mL   | 110 mm   | 37 mm  | 5     |
| CNG034 | 215 mL   | 117 mm   | 41 mm  | 5     |
| CNG035 | 240 mL   | 127 mm   | 42 mm  | 5     |
| CNG036 | 325 mL   | 142 mm   | 46 mm  | 5     |
| CNG037 | 420 mL   | 154 mm   | 50 mm  | 5     |
| CNG038 | 558 mL   | 170 mm   | 55 mm  | 5     |



## CNK - Casseroles, porcelain

### ▶ Flat bottom



1| With spout. Glazed inside and outside except for rim

| Code   | Capacity | Ext. Ø | Height | Batch |
|--------|----------|--------|--------|-------|
| CNK001 | 30 mL    | 50 mm  | 30 mm  | -     |
| CNK002 | 70 mL    | 66 mm  | 39 mm  | 20    |
| CNK003 | 150 mL   | 90 mm  | 48 mm  | 10    |
| CNK004 | 200 mL   | 96 mm  | 52 mm  | -     |
| CNK005 | 250 mL   | 108 mm | 60 mm  | -     |
| CNK006 | 500 mL   | 132 mm | 70 mm  | -     |

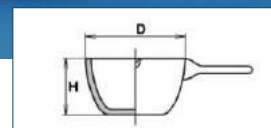


### ▶ Flat bottom



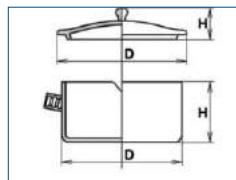
1| With spout. Glazed inside and outside except for rim

| Code   | Capacity | Ext. Ø | Height | Batch |
|--------|----------|--------|--------|-------|
| CNK007 | 22 mL    | 45 mm  | 26 mm  | 2     |
| CNK008 | 84 mL    | 67 mm  | 39 mm  | -     |
| CNK009 | 176 mL   | 85 mm  | 49 mm  | -     |
| CNK010 | 270 mL   | 101 mm | 51 mm  | -     |
| CNK011 | 450 mL   | 120 mm | 64 mm  | -     |
| CNK012 | 960 mL   | 150 mm | 86 mm  | -     |



▶ CNK - Casseroles, porcelain

▶ With wood handle

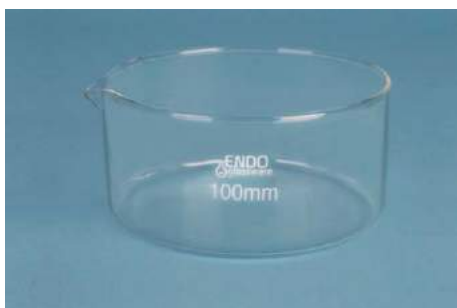


- 1 | With spout and lid
- 2 | Glazed inside and outside except for base

| Code   | Capacity | Ext. Ø | Height | Batch    |
|--------|----------|--------|--------|----------|
| CNK013 | 125 ml   | 75 mm  | 40 mm  | <b>8</b> |
| CNK014 | 200 ml   | 85 mm  | 45 mm  | <b>8</b> |

▶ CNL - Crystallizing dishes with spout

▶ Crystallizing dishes with spout



- 1 | Made of borosilicate glass, with spout

| Code   | Diameter | Capacity | Height | Batch    |
|--------|----------|----------|--------|----------|
| CNL001 | 50 mm    | 40 mL    | 30 mm  | -        |
| CNL002 | 60 mm    | 60 mL    | 35 mm  | -        |
| CNL003 | 70 mm    | 100 mL   | 40 mm  | -        |
| CNL004 | 80 mm    | 150 mL   | 45 mm  | -        |
| CNL005 | 100 mm   | 250 mL   | 50 mm  | <b>6</b> |
| CNL006 | 120 mm   | 500 mL   | 65 mm  | -        |
| CNL007 | 150 mm   | 1000 mL  | 75 mm  | -        |
| CNL008 | 180 mm   | 1500 mL  | 90 mm  | -        |
| CNL009 | 230 mm   | 3500 mL  | 100 mm | -        |

▶ CNN - Crystallizing dishes without spout, glass

▶ With rim



- 1 | Made of thick pressed glass

| Code   | Diameter | Capacity | Height | Batch     |
|--------|----------|----------|--------|-----------|
| CNN001 | 80 mm    | 150 mL   | 40 mm  | <b>12</b> |
| CNN002 | 100 mm   | 300 mL   | 55 mm  | <b>20</b> |
| CNN003 | 120 mm   | 500 mL   | 60 mm  | <b>10</b> |
| CNN004 | 150 mm   | 1000 mL  | 70 mm  | <b>6</b>  |
| CNN005 | 190 mm   | 1500 mL  | 90 mm  | <b>12</b> |

## CPB - Crucibles, tall form, porcelain

### Crucibles with lid



1 | With lid. Glazed inside and outside except for rim and base

| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CPB001 | 15 mL    | 32 mm    | 34 mm  | 10    |
| CPB002 | 18 mL    | 34 mm    | 36 mm  | 10    |
| CPB004 | 20 mL    | 36 mm    | 38 mm  | 10    |
| CPB005 | 25 mL    | 38 mm    | 40 mm  | 10    |
| CPB006 | 30 mL    | 40 mm    | 46 mm  | 10    |
| CPB007 | 40 mL    | 42 mm    | 54 mm  | 10    |
| CPB008 | 50 mL    | 43 mm    | 58 mm  | 10    |
| CPB009 | 100 mL   | 70 mm    | 76 mm  | -     |



page  
[57]

### Crucible without lid



1 | Without lid. Glazed inside and outside except for rim and base

| Code   | Diameter | Height | Capacity | Batch |
|--------|----------|--------|----------|-------|
| CPB010 | 30 mm    | 38 mm  | 15 mL    | 5     |
| CPB011 | 35 mm    | 44 mm  | 26 mL    | 5     |
| CPB012 | 40 mm    | 50 mm  | 35 mL    | 5     |
| CPB013 | 45 mm    | 56 mm  | 50 mL    | 5     |
| CPB014 | 50 mm    | 62 mm  | 72 mL    | 5     |
| CPB015 | 60 mm    | 75 mm  | 120 mL   | 5     |



## CPC - Crucibles, medium form, porcelain

### Crucible with lid



1 | With lid. Glazed inside and outside except for rim and base

| Code   | Capacity | Diameter | height | Batch |
|--------|----------|----------|--------|-------|
| CPC001 | 5 mL     | 25 mm    | 21 mm  | -     |
| CPC002 | 10 mL    | 30 mm    | 28 mm  | 10    |
| CPC003 | 15 mL    | 35 mm    | 30 mm  | 10    |
| CPC004 | 25 mL    | 40 mm    | 36 mm  | 10    |
| CPC005 | 30 mL    | 42 mm    | 41 mm  | 10    |
| CPC006 | 40 mL    | 48 mm    | 42 mm  | 10    |
| CPC007 | 50 mL    | 53 mm    | 46 mm  | 10    |
| CPC008 | 70 mL    | 56 mm    | 56 mm  | 10    |
| CPC009 | 100 mL   | 63 mm    | 59 mm  | 10    |
| CPC010 | 300 mL   | 90 mm    | 78 mm  | 10    |



### Crucible without lid



1 | Without lid, glazed inside and outside except for rim and base.

| Code   | Diameter | Height | Capacity | Batch |
|--------|----------|--------|----------|-------|
| CPC011 | 30 mm    | 25 mm  | 10 ml    | 5     |
| CPC012 | 35 mm    | 28 mm  | 12 ml    | 5     |
| CPC013 | 40 mm    | 32 mm  | 20 ml    | 5     |
| CPC014 | 45 mm    | 36 mm  | 30 ml    | 5     |
| CPC015 | 50 mm    | 40 mm  | 45 ml    | 5     |
| CPC016 | 60 mm    | 48 mm  | 80 ml    | 5     |
| CPC017 | 70 mm    | 56 mm  | 120 ml   | 5     |





## CPD - Crucibles, low form, porcelain

## ▶ Crucible with lid



1 | With lid. Glazed inside and outside except for rim and base



| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| CPD001 | 15 mL    | 43 mm    | 23 mm  | 10    |
| CPD002 | 25 mL    | 47 mm    | 227 mm | 10    |
| CPD003 | 30 mL    | 51 mm    | 230 mm | 10    |
| CPD004 | 50 mL    | 59 mm    | 238 mm | 10    |

## ▶ Crucible without lid



1 | Without lid, glazed inside and outside except for rim and base

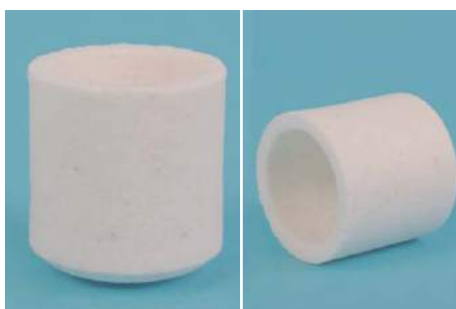


| Code   | Cap.  | Diam. | Height | Batch |
|--------|-------|-------|--------|-------|
| CPD005 | 5 mL  | 30 mm | 19 mm  | 5     |
| CPD006 | 10 mL | 35 mm | 22 mm  | 5     |
| CPD007 | 17 mL | 40 mm | 25 mm  | 5     |
| CPD008 | 21 mL | 45 mm | 28 mm  | 5     |
| CPD009 | 34 mL | 50 mm | 32 mm  | 5     |
| CPD010 | 62 mL | 60 mm | 38 mm  | 5     |
| CPD011 | 91 mL | 70 mm | 44 mm  | 5     |

## ▶ Crucibles for high frequency furnace



- 1 | Non glazed  
2 | Temperatures up to 1350°C



| Code   | Int. Ø | Height | Diameter | Batch |
|--------|--------|--------|----------|-------|
| CPD012 | 19 mm  | 26 mm  | 25 mm    | 10    |



## CPF - Lids for crucibles, porcelain

## ▶ Crucible shelf



- 1 | Non glazed  
2 | With 6 holes of different diameter:  
- 2 of 50 mm  
- 2 of 40 mm  
- 2 of 25 mm



| Code   | Length | Width  | Height |
|--------|--------|--------|--------|
| CPF012 | 160 mm | 100 mm | 40 mm  |

## CPF - Lids for crucibles, porcelain

### Beehive shelves for combustion crucibles



1 | Glazed except for rim

| Code   | Diameter |
|--------|----------|
| CPF001 | 75 mm    |
| CPF002 | 100 mm   |



### Porcelain saucer glazed



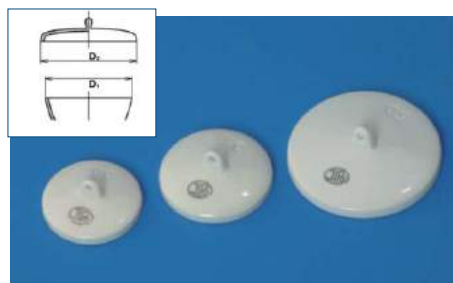
| Code   | Dimensions |
|--------|------------|
| CPF011 | 115/125 mm |

### Lid for combustion crucible



1 | Glazed inside and outside

| Code   | D1    | D2    | Batch |
|--------|-------|-------|-------|
| CPF003 | 30 mm | 34 mm | 5     |
| CPF004 | 35 mm | 39 mm | 5     |
| CPF005 | 40 mm | 44 mm | 5     |
| CPF006 | 45 mm | 49 mm | 5     |
| CPF007 | 50 mm | 54 mm | 5     |
| CPF008 | 60 mm | 64 mm | 5     |
| CPF009 | 70 mm | 74 mm | 5     |
| CPF010 | 80 mm | 84 mm | 5     |



## CPK - Annealing dishes

### Tall form, without spout



1 | Glazed inside and outside except for rim and base

| Code   | Diameter | Height | Capacity | Batch |
|--------|----------|--------|----------|-------|
| CPK001 | 30 mm    | 15 mm  | 8 ml     | 5     |
| CPK002 | 40 mm    | 20 mm  | 21 ml    | 5     |
| CPK003 | 50 mm    | 25 mm  | 35 ml    | 5     |
| CPK004 | 60 mm    | 30 mm  | 64 ml    | 5     |
| CPK005 | 70 mm    | 35 mm  | 103 ml   | 5     |



### Low form, without spout



1 | Glazed inside and outside except for rim and base

| Code   | Diameter | Height | Capacity | Batch |
|--------|----------|--------|----------|-------|
| CPK006 | 38 mm    | 10 mm  | 7 ml     | 5     |
| CPK007 | 44 mm    | 11 mm  | 9 ml     | 5     |
| CPK008 | 47 mm    | 13 mm  | 12 ml    | 5     |
| CPK009 | 81 mm    | 20 mm  | 70 ml    | 5     |
| CPK010 | 122mm    | 28 mm  | 220ml    | 5     |



### Tall form, with spout



1 | Glazed inside and outside except for rim and base

| Code   | Diameter | Height | Capacity | Batch |
|--------|----------|--------|----------|-------|
| CPK011 | 30 mm    | 15 mm  | 8 ml     | 5     |
| CPK012 | 40 mm    | 20 mm  | 21ml     | 5     |
| CPK013 | 50 mm    | 25 mm  | 35 ml    | 5     |
| CPK014 | 60 mm    | 30 mm  | 64 ml    | 5     |
| CPK015 | 70 mm    | 35 mm  | 103 ml   | 5     |





## CPL - Ignition dishes

## Ignition dishes

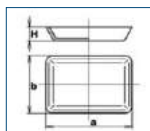


1 | Glazed except for base and rim



| Code   | Length | Width | Height | Batch |
|--------|--------|-------|--------|-------|
| CPL001 | 50 mm  | 28 mm | 15 mm  | -     |
| CPL002 | 75 mm  | 35 mm | 15 mm  | 10    |
| CPL003 | 80 mm  | 50 mm | 18 mm  | 10    |
| CPL004 | 120 mm | 65 mm | 18 mm  | 10    |

## Ignition dishes



1 | Glazed inside and outside except for rim and base

| Code   | a     | b     | h     | Cap.  | Batch |
|--------|-------|-------|-------|-------|-------|
| CPL005 | 50 mm | 35 mm | 12 mm | 6 ml  | 5     |
| CPL006 | 60 mm | 40 mm | 12 mm | 13 ml | 5     |
| CPL007 | 74 mm | 49 mm | 14 mm | 28 ml | 5     |
| CPL008 | 95 mm | 65 mm | 14 mm | 40 ml | 5     |



## CPN - Combustion boats

## Combustion boats

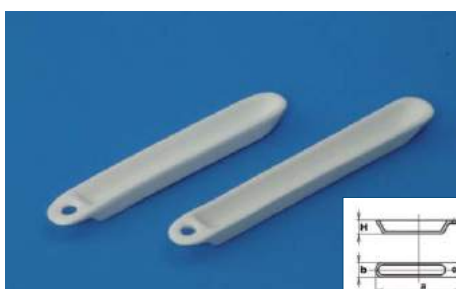


1 | Non glazed

2 | It stands temperatures up to 1350°C

| Code   | Longitud | Height | Width | Batch |
|--------|----------|--------|-------|-------|
| CPN001 | 88 mm    | 10 mm  | 13 mm | 100   |

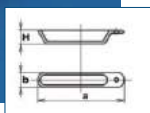
## Combustion boats



1 | Non glazed

2 | It stands temperatures up to 1350°C

| Code   | a      | b     | h    | Batch |
|--------|--------|-------|------|-------|
| CPN002 | 75 mm  | 13 mm | 8 mm | 50    |
| CPN003 | 105 mm | 14 mm | 9 mm | 50    |
| CPN004 | 85 mm  | 13 mm | 8 mm | 50    |
| CPN005 | 90 mm  | 13 mm | 8 mm | 50    |







## [D] INDEX OF CONTENTS VOLUMETRY

|                                           |           |
|-------------------------------------------|-----------|
| <b>[DB] Measuring cylinders .....</b>     | <b>62</b> |
| DBB - Class A, tall form, glass .....     | 62        |
| DBG - Class B, tall form, glass .....     | 63        |
| DBJ - Class B, tall form, plastic.....    | 63        |
| <b>[DD] Volumetric flasks .....</b>       | <b>64</b> |
| DDB - Class A with stopper, glass.....    | 64        |
| DDW - 2 marks, glass .....                | 65        |
| <b>[DG] Graduated pipettes .....</b>      | <b>65</b> |
| DGB - Class A with bulb, glass.....       | 65        |
| DGD - Class A without bulb, glass .....   | 66        |
| DGG - Class B with bulb, glass .....      | 66        |
| DGJ - Class B without bulb, glass.....    | 66        |
| <b>[DJ] Volumetric pipettes .....</b>     | <b>66</b> |
| DJB - 1 mark, class A, with bulb.....     | 66        |
| DJD - 1 mark, class A, without bulb ..... | 67        |
| DJG - 1 mark, class B, with bulb .....    | 67        |
| DJJ - 1 mark, class B, without bulb.....  | 67        |
| DJP - 2 marks, class A, with bulb .....   | 67        |
| DJR - 2 marks, class B, with bulb .....   | 68        |
| <b>[DL] Pipettes, others .....</b>        | <b>68</b> |
| DLB - Pasteur pipettes .....              | 68        |
| DLD - Wine pipettes .....                 | 68        |
| <b>[DN] Burettes .....</b>                | <b>69</b> |
| DNB - Type Mohr, PTFE stopcock.....       | 69        |
| DND - Type Mohr, glass stopcock .....     | 69        |
| DNM - Pellet type.....                    | 70        |

TRADEMARKS:





## DBB - Class A, tall form, glass

## Tall form, with spout



- 1 | Blue graduation and hexagonal base
- 2 | DIN EN ISO 4788

| Code   | Cap.    | ØxH       | Grad.   | Tolerance |
|--------|---------|-----------|---------|-----------|
| DBB001 | 5 ml    | 11x112 mm | 0.1 mL  | ± 0.05 mL |
| DBB002 | 10 ml   | 12x135 mm | 0.2 mL  | ± 0.1 mL  |
| DBB003 | 25 ml   | 20x160 mm | 0.5 mL  | ± 0.25 mL |
| DBB004 | 50 ml   | 25x195 mm | 1.0 mL  | ± 0.5 mL  |
| DBB005 | 100 ml  | 30x240 mm | 1.0 mL  | ± 0.5 mL  |
| DBB006 | 250 ml  | 40x320 mm | 2.0 mL  | ± 1.0 mL  |
| DBB007 | 500 ml  | 50x380 mm | 5.0 mL  | ± 2.5 mL  |
| DBB008 | 1000 ml | 65x420 mm | 10.0 mL | ± 5.0 mL  |
| DBB009 | 2000 ml | 80x520 mm | 20.0 mL | ± 10.0 mL |

## Tall form, with spout



- 1 | Blue graduation and hexagonal base
- 2 | DIN EN ISO 4788

| Code   | Cap.    | Grad.   | Tolerance | ØxH (mm) | Batch |
|--------|---------|---------|-----------|----------|-------|
| DBB027 | 5 ml    | 0.1 mL  | ±0.05     | 12.9x115 | 10    |
| DBB028 | 10 ml   | 0.2 mL  | ±0.10     | 15.5x135 | 10    |
| DBB029 | 25 ml   | 0.5 mL  | ±0.25     | 21.3x160 | 10    |
| DBB030 | 50 ml   | 1.0 mL  | ±0.50     | 26x195   | 10    |
| DBB031 | 100 ml  | 1.0 mL  | ±0.50     | 31.3x240 | -     |
| DBB032 | 250 ml  | 2.0 mL  | ±1.00     | 40.7x320 | -     |
| DBB033 | 500 ml  | 5.0 mL  | ±2.50     | 53.2x380 | -     |
| DBB034 | 1000 ml | 10.0 mL | ±5.00     | 67x465   | -     |
| DBB035 | 2000 ml | 20.0 mL | ±10.00    | 85x535   | -     |

## With stopper, plastic



- 1 | Blue graduation and hexagonal base
- 2 | DIN EN ISO 4788

| Code   | Cap.    | Height | Grad.   | Tolerance | Ground |
|--------|---------|--------|---------|-----------|--------|
| DBB018 | 5 ml    | 112 mm | 0.1 mL  | ± 0.1 mL  | 10/19  |
| DBB019 | 10 ml   | 135 mm | 0.2 mL  | ± 0.2 mL  | 10/19  |
| DBB020 | 25 ml   | 160 mm | 0.5 mL  | ± 0.5 mL  | 19/26  |
| DBB021 | 50 ml   | 195 mm | 1.0 mL  | ± 1.0 mL  | 19/26  |
| DBB022 | 100 ml  | 240 mm | 1.0 mL  | ± 1.0 mL  | 29/32  |
| DBB023 | 250 ml  | 320 mm | 2.0 mL  | ± 2.0 mL  | 29/32  |
| DBB024 | 500 ml  | 380 mm | 5.0 mL  | ± 5.0 mL  | 34/35  |
| DBB025 | 1000 ml | 420 mm | 10.0 mL | ± 10.0 mL | 45/40  |
| DBB026 | 2000 ml | 520 mm | 20.0 mL | ± 20.0 mL | 45/40  |

## With plastic stopper



- 1 | Blue graduation and hexagonal base
- 2 | DIN EN ISO 4788

| Code   | Capacity | Division | Tolerance | Ground | Batch |
|--------|----------|----------|-----------|--------|-------|
| DBB045 | 5 ml     | 0.1 mL   | ± 0.05 mL | 10/19  | 10    |
| DBB046 | 10 ml    | 0.2 mL   | ± 0.10 mL | 10/19  | 10    |
| DBB047 | 25 ml    | 0.5 mL   | ± 0.25 mL | 14/23  | 10    |
| DBB048 | 50 ml    | 1.0 mL   | ± 0.50 mL | 19/26  | 10    |
| DBB049 | 100 ml   | 1.0 mL   | ± 0.50 mL | 24/29  | 10    |
| DBB050 | 250 ml   | 2.0 mL   | ± 1.0 mL  | 29/32  | 10    |
| DBB051 | 500 ml   | 5.0 mL   | ± 2.50 mL | 34/35  | 10    |
| DBB052 | 1000 ml  | 10.0 mL  | ± 5.0 mL  | 45/40  | 4     |
| DBB053 | 2000 ml  | 20.0 mL  | ± 10.0 mL | 45/40  | 3     |

▶ DBB - Class A, tall form, glass

▶ With glass stopper



- 1 | Blue graduation and hexagonal base
- 2 | DIN EN ISO 4788

| Code   | Capacity | Division | Tolerance | Ground | Batch |
|--------|----------|----------|-----------|--------|-------|
| DBB036 | 5 ml     | 0.1 mL   | ± 0.05 mL | 10/19  | 10    |
| DBB037 | 10 ml    | 0.2 mL   | ± 0.10 mL | 10/19  | 10    |
| DBB038 | 25 ml    | 0.5 mL   | ± 0.25 mL | 14/23  | 10    |
| DBB039 | 50 ml    | 1.0 mL   | ± 0.50 mL | 19/26  | 10    |
| DBB040 | 100 ml   | 1.0 mL   | ± 0.50 mL | 24/29  | 10    |
| DBB041 | 250 ml   | 2.0 mL   | ± 1.0 mL  | 29/32  | 10    |
| DBB042 | 500 ml   | 5.0 mL   | ± 2.50 mL | 34/35  | 10    |
| DBB043 | 1000 ml  | 10.0 mL  | ± 5.0 mL  | 45/40  | 4     |
| DBB044 | 2000 ml  | 20.0 mL  | ± 10.0 mL | 45/40  | -     |



▶ DBG - Class B, tall form, glass

▶ Tall form, with spout



- 1 | White graduation and hexagonal base
- 2 | DIN EN ISO 4788

| Code   | Capacity | Diameter | Height | Graduation | Tolerance |
|--------|----------|----------|--------|------------|-----------|
| DBG001 | 5 ml     | 11 mm    | 112 mm | 0.1 mL     | ±0.1 mL   |
| DBG002 | 10 ml    | 12 mm    | 135 mm | 0.2 mL     | ±0.2 mL   |
| DBG003 | 25 ml    | 20 mm    | 160 mm | 0.5 mL     | ±0.5 mL   |
| DBG004 | 50 ml    | 25 mm    | 195 mm | 1.0 mL     | ±1.0 mL   |
| DBG005 | 100 ml   | 30 mm    | 240 mm | 1.0 mL     | ±1.0 mL   |
| DBG006 | 250 ml   | 40 mm    | 320 mm | 2.0 mL     | ±2.0 mL   |
| DBG007 | 500 ml   | 50 mm    | 380 mm | 5.0 mL     | ±5.0 mL   |
| DBG008 | 1000 ml  | 65 mm    | 420 mm | 10.0 mL    | ±10.0 mL  |
| DBG009 | 2000 ml  | 80 mm    | 520 mm | 20.0 mL    | ±20.0 mL  |



▶ With stopper, plastic



- 1 | White graduation and hexagonal base. DIN EN ISO 4788

| Code   | Cap.    | Height | Grad.   | Tolerance | Ground |
|--------|---------|--------|---------|-----------|--------|
| DBG010 | 5 ml    | 112 mm | 0.1 mL  | ±0.1 mL   | 10/19  |
| DBG011 | 10 ml   | 135 mm | 0.2 mL  | ±0.2 mL   | 10/19  |
| DBG012 | 25 ml   | 160 mm | 0.5 mL  | ±0.5 mL   | 19/26  |
| DBG013 | 50 ml   | 195 mm | 1.0 mL  | ±1.0 mL   | 19/26  |
| DBG014 | 100 ml  | 240 mm | 1.0 mL  | ±1.0 mL   | 29/32  |
| DBG015 | 250 ml  | 320 mm | 2.0 mL  | ±2.0 mL   | 29/32  |
| DBG016 | 500 ml  | 380 mm | 5.0 mL  | ±5.0 mL   | 34/35  |
| DBG017 | 1000 ml | 420 mm | 10.0 mL | ±10.0 mL  | 45/40  |
| DBG018 | 2000 ml | 520 mm | 20.0 mL | ±20.0 mL  | 45/40  |



▶ DBJ - Class B, tall form, plastic

▶ With spout, PP, moulded graduation



- 1 | Made of polypropylene, hexagonal base. Permanent moulded graduation

| Code   | Capacity | Graduation | Subdiv. | Batch |
|--------|----------|------------|---------|-------|
| DBJ001 | 10 mL    | 1 mL       | 0.2 mL  | 10    |
| DBJ002 | 25 mL    | 5 mL       | 0.5 mL  | 10    |
| DBJ003 | 50 mL    | 10 mL      | 1.0 mL  | 10    |
| DBJ004 | 100 mL   | 10 mL      | 1.0 mL  | 10    |
| DBJ005 | 250 mL   | 20 mL      | 2.0 mL  | 6     |
| DBJ006 | 500 mL   | 50 mL      | 5.0 mL  | 6     |
| DBJ007 | 1000 mL  | 100 mL     | 10 mL   | 4     |
| DBJ008 | 2000 mL  | 200 mL     | 20 mL   | 2     |





## DDB - Class A, with stopper, glass

## ▶ Transparent glass, with PP stopper



- 1 | With batch certificate, white graduation
- 2 | According to ISO 1042

| Code   | Capacity | Base Ø | Height (±5) | Tolerance | Batch |
|--------|----------|--------|-------------|-----------|-------|
| DDB001 | 5 mL     | 15 mm  | 80 mm       | 0.025 mL  | 20    |
| DDB002 | 10 mL    | 18 mm  | 90 mm       | 0.025 mL  | 10    |
| DDB003 | 25 mL    | 25 mm  | 110 mm      | 0.040 mL  | 2     |
| DDB004 | 50 mL    | 30 mm  | 140 mm      | 0.060 mL  | 2     |
| DDB005 | 100 mL   | 40 mm  | 170 mm      | 0.100 mL  | 2     |
| DDB006 | 200 mL   |        |             |           | 2     |
| DDB007 | 250 mL   | 50 mm  | 220 mm      | 0.150 mL  | 2     |
| DDB008 | 500 mL   | 70 mm  | 260 mm      | 0.250 mL  | 2     |
| DDB009 | 1000 mL  | 85 mm  | 300 mm      | 0.400 mL  | 2     |
| DDB010 | 2000 mL  | 100 mm | 370 mm      | 0.600 mL  | -     |

## ▶ Amber glass, with PP stopper



- 1 | With batch certificate, white graduation
- 2 | According to ISO 1042

| Code   | Capacity | Base Ø | Height (±5) | Tolerance | Batch |
|--------|----------|--------|-------------|-----------|-------|
| DDB011 | 5 mL     | 15 mm  | 80 mm       | 0.025 mL  | 20    |
| DDB012 | 10 mL    | 18 mm  | 90 mm       | 0.025 mL  | 10    |
| DDB013 | 25 mL    | 25 mm  | 110 mm      | 0.040 mL  | 10    |
| DDB014 | 50 mL    | 30 mm  | 140 mm      | 0.060 mL  | 2     |
| DDB015 | 100 mL   | 40 mm  | 170 mm      | 0.100 mL  | 2     |
| DDB016 | 250 mL   | 50 mm  | 220 mm      | 0.150 mL  | 2     |

## ▶ Transparent glass, with PP stopper



- 1 | With individual calibration certificate
- 2 | According to ISO 1042
- 3 | Blue graduation

| Code   | Capacity | Ground | Tolerance |
|--------|----------|--------|-----------|
| DDB017 | 25 mL    | 10/19  | 0.040 mL  |
| DDB018 | 50 mL    | 12/21  | 0.060 mL  |
| DDB019 | 100 mL   | 14/23  | 0.100 mL  |
| DDB020 | 200 mL   | 14/23  | 0.150 mL  |
| DDB021 | 250 mL   | 14/23  | 0.150 mL  |
| DDB022 | 500 mL   | 19/26  | 0.250 mL  |
| DDB023 | 1000 mL  | 24/29  | 0.400 mL  |
| DDB024 | 2000 mL  | 29/32  | 0.600 mL  |

\* consult for other capacities

## ▶ Transparent glass, with PP stopper



- 1 | With individual calibration certificate, blue graduation
- 2 | According to ISO 1042

| Code   | Capacity | Ground | Tolerance |
|--------|----------|--------|-----------|
| DDB025 | 5 mL     | 10/19  | 0.040 mL  |
| DDB026 | 10 mL    | 10/19  | 0.040 mL  |
| DDB027 | 20 mL    | 10/19  | 0.040 mL  |
| DDB028 | 25 mL    | 10/19  | 0.040 mL  |
| DDB029 | 50 mL    | 12/21  | 0.060 mL  |
| DDB030 | 100 mL   | 14/23  | 0.100 mL  |
| DDB031 | 200 mL   | 14/23  | 0.150 mL  |
| DDB032 | 250 mL   | 14/23  | 0.150 mL  |
| DDB033 | 500 mL   | 19/26  | 0.250 mL  |
| DDB034 | 1000 mL  | 24/29  | 0.400 mL  |
| DDB035 | 2000 mL  | 29/32  | 0.600 mL  |

## DDB - Class A, with stopper, glass

### Amber glass, with PP stopper



- 1 | With individual calibration certificate, white graduation
- 2 | According to ISO 1042

| Code   | Cap.   | Ground | Tolerance | Batch |
|--------|--------|--------|-----------|-------|
| DDB036 | 5mL    | 10/19  | 0.040 mL  | 2     |
| DDB037 | 10mL   | 10/19  | 0.040 mL  | 2     |
| DDB038 | 20mL   | 10/19  | 0.040 mL  | 2     |
| DDB039 | 25mL   | 10/19  | 0.040 mL  | 2     |
| DDB040 | 50mL   | 12/21  | 0.060 mL  | 2     |
| DDB041 | 100mL  | 14/23  | 0.100 mL  | 2     |
| DDB042 | 200mL  | 14/23  | 0.150 mL  | 2     |
| DDB043 | 250mL  | 14/23  | 0.150 mL  | 2     |
| DDB044 | 500mL  | 19/26  | 0.250 mL  | 2     |
| DDB045 | 1000mL | 24/29  | 0.400 mL  | 2     |
| DDB046 | 2000mL | 29/32  | 0.600 mL  | 2     |



page  
[65]

## DDW - Two marks, glass

### Flask two marks, glass



| Code   | Capacity   |
|--------|------------|
| DDW001 | 100/110 mL |
| DDW002 | 200/220 mL |



## DGB - Class A with bulb, glass

### 0 bottom

- 1 | ISO835. Blue graduation

| Code   | Capacity | Graduation | Colour |
|--------|----------|------------|--------|
| DGB001 | 1 mL     | 0.10 mL    | Red    |
| DGB009 | 1 mL     | 0.01 mL    | Yellow |
| DGB002 | 2 mL     | 0.10 mL    | Green  |
| DGB020 | 2 mL     | 0.01 mL    | Yellow |
| DGB008 | 5 mL     | 0.05 mL    | Red    |
| DGB003 | 5 mL     | 0.10 mL    | Blue   |
| DGB004 | 10 mL    | 0.10 mL    | Orange |
| DGB005 | 20 mL    | 0.10 mL    | Yellow |
| DGB006 | 25 mL    | 0.10 mL    | White  |
| DGB007 | 50 mL    | 0.10 mL    | Black  |



### 0 top

- 1 | ISO835. Blue graduation

| Code   | Capacity | Graduation | Colour |
|--------|----------|------------|--------|
| DGB010 | 1mL      | 0.10 mL    | Yellow |
| DGB018 | 1mL      | 0.01 mL    | Red    |
| DGB019 | 2mL      | 0.01 mL    | Yellow |
| DGB011 | 2mL      | 0.10 mL    | Green  |
| DGB017 | 5mL      | 0.05 mL    | Red    |
| DGB012 | 5mL      | 0.10 mL    | Blue   |
| DGB013 | 10mL     | 0.10 mL    | Orange |
| DGB014 | 20mL     | 0.10 mL    | Yellow |
| DGB015 | 25mL     | 0.10 mL    | White  |
| DGB016 | 50mL     | 0.10 mL    | Black  |





## DGD - Class A without bulb, glass

0 top



1 | With batch certificate, amber graduation. ISO 835

| Code   | Capacity | Graduation | Batch |
|--------|----------|------------|-------|
| DGD001 | 1 mL     | 0.01 mL    | 10    |
| DGD002 | 2 mL     | 0.02 mL    | 10    |
| DGD003 | 5 mL     | 0.05 mL    | 10    |
| DGD005 | 10 mL    | 0.10 mL    | 10    |



## DGG - Class A with bulb, glass

0 bottom



1 | Amber graduation. ISO 835

| Code   | Capacity | Graduation |
|--------|----------|------------|
| DGG011 | 1 mL     | 0.01 mL    |
| DGG008 | 1 mL     | 0.05 mL    |
| DGG001 | 1 mL     | 0.10 mL    |
| DGG012 | 2 mL     | 0.02 mL    |
| DGG009 | 2 mL     | 0.05 mL    |
| DGG002 | 2 mL     | 0.10 mL    |
| DGG010 | 5 mL     | 0.05 mL    |
| DGG003 | 5 mL     | 0.10 mL    |
| DGG004 | 10 mL    | 0.10 mL    |
| DGG005 | 20 mL    | 0.10 mL    |
| DGG006 | 25 mL    | 0.10 mL    |
| DGG007 | 50 mL    | 0.10 mL    |



## DGJ - Class B without bulb, glass

0 bottom



1 | Amber graduation. ISO 835

| Code   | Capacity | Graduation | Batch |
|--------|----------|------------|-------|
| DGJ001 | 0,1 mL   | 0.001 mL   | 10    |
| DGJ002 | 0.2 ml   | 0.002 mL   | 10    |
| DGJ003 | 0.5 ml   | 0.005 ml   | 10    |
| DGJ004 | 0.5 mL   | 0.01 mL    | -     |
| DGJ005 | 1 ml     | 0.01 ml    | 10    |
| DGJ006 | 2 ml     | 0.02 ml    | 10    |
| DGJ007 | 5 ml     | 0.05 ml    | 10    |
| DGJ008 | 10 ml    | 0.1 ml     | 10    |
| DGJ009 | 20 ml    | 0.1 ml     | 10    |
| DGJ010 | 25 m     | 0.1 ml     | 10    |



## DJB - 1 mark, class A, with bulb



1 | Calibrated at 20 °C with colour code. ISO 648

| Code   | Capacity | Tolerance |
|--------|----------|-----------|
| DJB001 | 1 mL     | ±0.007 mL |
| DJB002 | 2 mL     | +0.010 mL |
| DJB003 | 5 mL     | ±0.015 mL |
| DJB004 | 10 mL    | ±0.020 mL |
| DJB005 | 15 mL    | ±0.030 mL |
| DJB006 | 20 mL    | ±0.030 mL |
| DJB007 | 25 mL    | ±0.030 mL |
| DJB008 | 50 ml    | ±0.050 mL |
| DJB009 | 100 mL   | ±0.080 mL |



**DJD - 1 mark, class A, without bulb**

1 | Calibrated at 20°C with colour code. ISO 648

| Code   | Capacity | Tolerance | Batch     |
|--------|----------|-----------|-----------|
| DJD001 | 1 ml     | ±0.007 mL | <b>25</b> |
| DJD002 | 2 ml     | ±0.010 mL | <b>5</b>  |
| DJD003 | 5 ml     | ±0.015 mL | <b>10</b> |
| DJD004 | 10 ml    | ±0.020 mL | <b>5</b>  |
| DJD005 | 20 ml    | ±0.030 mL | <b>5</b>  |
| DJD006 | 25 ml    | ±0.030 mL | <b>5</b>  |

page  
[67]**DJG - 1 mark, class B, with bulb**

1 | Calibrated at 20°C with colour code. ISO 648

| Code   | Capacity | Length | Color  |
|--------|----------|--------|--------|
| DJG001 | 1 mL     | 310 mm | Blue   |
| DJG002 | 2 mL     | 330 mm | Orange |
| DJG003 | 5 mL     | 400 mm | White  |
| DJG004 | 10 mL    | 440 mm | Red    |
| DJG005 | 15 mL    | 455 mm | Green  |
| DJG006 | 20 mL    | 500 mm | Yellow |
| DJG007 | 25 mL    | 520 mm | Blue   |
| DJG008 | 50 mL    | 540 mm | Red    |
| DJG009 | 100 mL   | 585 mm | Yellow |

**DJJ - 1 mark, class B, without bulb**

1 | Calibrated at 20°C with colour code. ISO 648

| Code   | Capacity | Tolerance | Batch     |
|--------|----------|-----------|-----------|
| DJJ001 | 1 ml     | ±0.015 mL | <b>5</b>  |
| DJJ002 | 2 ml     | ±0.020 mL | <b>5</b>  |
| DJJ003 | 5 ml     | ±0.030 mL | <b>10</b> |
| DJJ004 | 10 ml    | ±0.040 mL | <b>10</b> |
| DJJ005 | 11ml     | ±0.040 mL | <b>10</b> |
| DJJ006 | 20 ml    | ±0.060 mL | <b>10</b> |
| DJJ007 | 25 ml    | ±0.060 mL | <b>5</b>  |

**DJP - 2 marks, class A, with bulb**

1 | Calibrated at 20°C with colour code. ISO 648

| Code   | Capacity | Tolerance |
|--------|----------|-----------|
| DJP001 | 1 mL     | ±0.007 mL |
| DJP002 | 2 mL     | ±0.010 mL |
| DJP003 | 5 mL     | ±0.015 mL |
| DJP004 | 10 mL    | ±0.020 mL |
| DJP005 | 15 mL    | ±0.030 mL |
| DJP006 | 20 mL    | ±0.030 mL |
| DJP007 | 25 mL    | ±0.030 mL |
| DJP008 | 50mL     | ±0.050 mL |
| DJP009 | 100mL    | ±0.080 mL |





## DJR - 2 marks, class A, with bulb



1 | Calibrated at 20°C with colour code. ISO 648

| Code   | Capacity | Length | Colour |
|--------|----------|--------|--------|
| DJR001 | 1 mL     | 310 mm | Blue   |
| DJR002 | 2 mL     | 330 mm | Orange |
| DJR003 | 5 mL     | 400 mm | White  |
| DJR004 | 10 mL    | 440 mm | Red    |
| DJR005 | 20 mL    | 515 mm | Yellow |
| DJR006 | 25 mL    | 520 mm | Blue   |
| DJR007 | 50 mL    | 540 mm | Red    |
| DJR008 | 100 mL   | 585 mm | Yellow |



## DLB - Pasteur pipettes

## ▶ Glass Pasteur pipettes



- 1 | With constriction on the upper suction end, long and thin tip  
 2 | Non sterile and non graduated. Box of 250 units

| Code   | Length | Batch |
|--------|--------|-------|
| DLB001 | 50 mm  | 8     |
| DLB002 | 230 mm | 8     |

## ▶ Plastic Pasteur pipettes



- 1 | Made of polyethylene for single use, non sterile. Bags of 500 units

| Code    | Length | Cap.   | Description   | Batch |
|---------|--------|--------|---------------|-------|
| DLB010  | 160 mm | 1.0 mL | Graduated     | 10    |
| DLB011  | 160 mm | 3 mL   | Graduated     | -     |
| DLB012* | 115 mm | 0.4 mL | Non graduated | -     |

\* Capillary tip



## DLD - Pipettes for wine

## ▶ Glass pipette for wine



- 1 | In glass with two handles

| Code   | Capacity  | Diameter | Length |
|--------|-----------|----------|--------|
| DLD001 | 350 mL mm | 30 mm    | 640 mm |

## ▶ DNB - Mohr type, PTFE stopcock

### ▶ PTFE stopcock, class A



1 | Blue graduation. ISO 835

| Code   | Capacity | Length | Graduation | Tolerance     |
|--------|----------|--------|------------|---------------|
| DNB010 | 10 ml    | 600 mm | 0.1 mL     | $\pm 0.03$ mL |
| DNB011 | 25 ml    | 630 mm | 0.1 mL     | $\pm 0.05$ mL |
| DNB012 | 50 ml    | 860 mm | 0.1 mL     | $\pm 0.05$ mL |

### ▶ PTFE stopcock, class B



1 | Blue graduation

| Code   | Capacity | Length | Graduation | Tolerance     |
|--------|----------|--------|------------|---------------|
| DNB007 | 10 ml    | 600 mm | 0.1 mL     | $\pm 0.05$ mL |
| DNB008 | 25 ml    | 630 mm | 0.1 mL     | $\pm 0.10$ mL |
| DNB009 | 50 ml    | 860 mm | 0.1 mL     | $\pm 0.10$ mL |

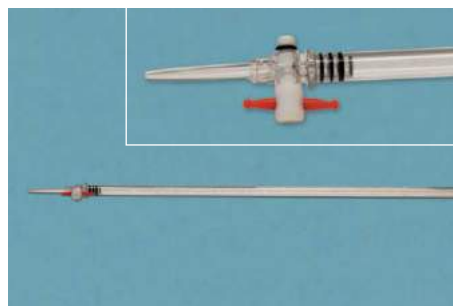


### ▶ PTFE stopcock



- 1 | Transparent methacrylate (PMMA), white graduation
- 2 | Detachable, straight mouth

| Code   | Cap.  | Length | Grad. | Res.   | Batch |
|--------|-------|--------|-------|--------|-------|
| DNB015 | 25 ml | 560 mm | 1 mL  | 0.1 mL | 10    |
| DNB016 | 50 ml | 735 mm | 1 mL  | 0.1 mL | 10    |



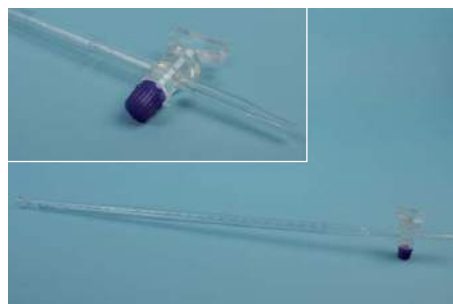
## ▶ DND - Mohr type, glass stopcock

### ▶ Glass stopcock, class A



1 | Blue graduation, ISO 835

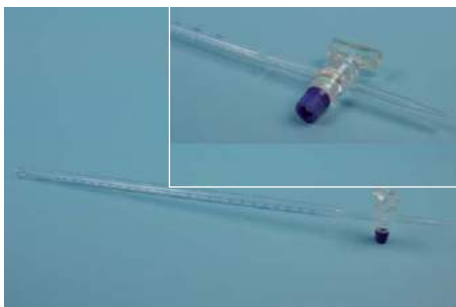
| Code   | Capacity | Length | Graduation | Tolerance     |
|--------|----------|--------|------------|---------------|
| DND005 | 10 ml    | 535 mm | 0.1 ml     | $\pm 0.03$ ml |
| DND006 | 25 ml    | 565 mm | 0.1 ml     | $\pm 0.05$ ml |
| DND007 | 50 ml    | 780 mm | 0.1 ml     | $\pm 0.05$ ml |





## DND - Mohr type, glass stopcock

## Glass stopcock, class B



1 | Blue graduation, ISO 835

| Code   | Capacity | Length | Graduation | Tolerance |
|--------|----------|--------|------------|-----------|
| DND002 | 10 ml    | 535 mm | 0.1 mL     | ± 0.05 mL |
| DND003 | 25 ml.   | 565 mm | 0.1 mL     | ± 0.10 mL |
| DND004 | 50 ml    | 780 mm | 0.1 mL     | ± 0.10 mL |



## DNM - Pellet type

## Glass PTFE stopcock



1 | Class AS, blue graduation. With Schellbach band for easy reading  
 2 | PTFE lateral stopcock and glass intermediate stopcock

| Code   | Capacity | Graduation |
|--------|----------|------------|
| DNM001 | 10 mL    | 1/10       |
| DNM002 | 10 mL    | 1/20       |
| DNM003 | 10 mL    | 1/50       |
| DNM004 | 25 mL    | 1/20       |
| DNM005 | 25 mL    | 1/10       |
| DNM006 | 50 mL    | 1/10       |
| DNM007 | 100 mL   | 1/5        |

## Glass PTFE stopcock, amber glass



1 | Class AS, white graduation. With Schellbach band for easy reading  
 2 | PTFE lateral stopcock and glass intermediate stopcock

| Code   | Capacity | Graduation |
|--------|----------|------------|
| DNM008 | 10 mL    | 1/10       |
| DNM009 | 10 mL    | 1/20       |
| DNM010 | 10 mL    | 1/50       |
| DNM011 | 25 mL    | 1/20       |
| DNM012 | 25 mL    | 1/10       |
| DNM013 | 50 mL    | 1/10       |
| DNM014 | 100 mL   | 1/5        |



## [F] INDEX OF CONTENTS LABORATORY ASSEMBLIES AND TOOLS

|                                          |           |
|------------------------------------------|-----------|
| <b>[FC] Assemblies .....</b>             | <b>72</b> |
| FCB - Stands .....                       | 72        |
| FCD - Laboratory jacks .....             | 72        |
| FCG - Clamps f/burettes, tubes .....     | 73        |
| FCJ - Clamps, 3-4 prongs .....           | 74        |
| FCK - Clamps, special .....              | 74        |
| FCM - Clips f/ground joints .....        | 75        |
| FCP - Bossheads .....                    | 76        |
| FCR - Rings, open .....                  | 77        |
| FCV - Rings, closed .....                | 78        |
| FCY - Rods without thread .....          | 78        |
| <b>[FF] Heating .....</b>                | <b>78</b> |
| FFB - Tripod stands .....                | 78        |
| FFD - Gauze iron wires .....             | 79        |
| FFG - Triangles .....                    | 79        |
| FFJ - Burners .....                      | 79        |
| FFL - Tongs f/crucibles, capsules .....  | 80        |
| FFN - Tongs f/beakers, tubes .....       | 81        |
| <b>[FH] Tubing and accessories .....</b> | <b>81</b> |
| FHD - Clamps .....                       | 81        |
| FHN - Tubing f/laboratory .....          | 81        |

|                                       |           |
|---------------------------------------|-----------|
| <b>[FK] Spatule/Spoons .....</b>      | <b>82</b> |
| FKB - Spoon-spatula .....             | 82        |
| FKD - Spoon-spatula, micro .....      | 84        |
| FKG - Spatula .....                   | 84        |
| FKL - Double spatula .....            | 85        |
| FKN - Double spatula, micro .....     | 85        |
| FKP - Spoons .....                    | 85        |
| FKR - Double spoons .....             | 86        |
| FKW - Scoops .....                    | 86        |
| <b>[FM] Dissection material .....</b> | <b>87</b> |
| FMB - Scalpels/blades .....           | 87        |
| FMD - Dissecting needles .....        | 88        |
| FMG - Forceps, curved .....           | 89        |
| FMJ - Forceps, straight .....         | 90        |
| FML - Forceps, special .....          | 90        |
| FMN - Scissors .....                  | 92        |
| FMQ - Dissecting kits .....           | 94        |
| <b>[FZ] Others .....</b>              | <b>95</b> |
| FZB - Stabilizing ringss .....        | 95        |
| FZD - Glass markers .....             | 95        |
| FZG - Compass .....                   | 95        |

TRADEMARKS:



## FCB - Stands

### A-shaped support stands



- 1 | Base in furnace painted cast steel, rod in chromium plated steel
- 2 | Rubber caps in the base for good stability

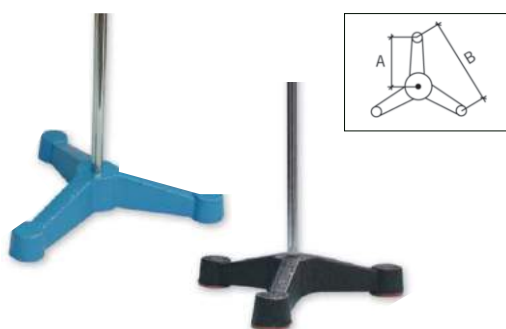
| Code   | Base      | Rod (LxØ) |
|--------|-----------|-----------|
| FCB001 | 200x30 mm | 600x10 mm |

### Retort stands



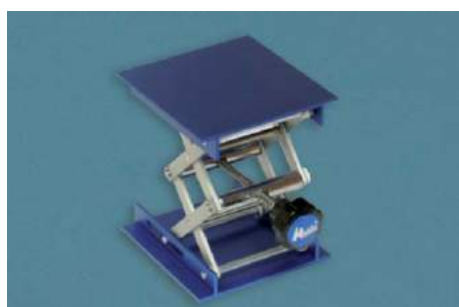
| Code         | Colour | Base       | Rod (LxØ) | Batch |
|--------------|--------|------------|-----------|-------|
| Cast steel   |        |            |           |       |
| FCB002       | Blue   | 200x140 mm | 600x10 mm | 12    |
| FCB003       | Blue   | 300x180 mm | 600x10 mm | 10    |
| Plated steel |        |            |           |       |
| FCB006       | Black  | 100x175 mm | 500x10 mm | -     |
| FCB007       | Black  | 125x225 mm | 500x10 mm | 20    |
| FCB008       | Black  | 150x250 mm | 600x10 mm | 25    |
| FCB009       | Black  | 150x300 mm | 900x10 mm | 11    |

### Tripod support stands



| Code   | Colour | A      | B      | Rod (LxØ) | Batch |
|--------|--------|--------|--------|-----------|-------|
| FCB010 | Blue   | 110 mm | 170 mm | 600x10 mm | -     |
| FCB011 | Blue   | 135 mm | 210 mm | 760x10 mm | -     |
| FCB012 | Blue   | 175 mm | 300 mm | 900x10 mm | 6     |
| FCB013 | Blue   | 85 mm  | 130 mm | 500x10 mm | -     |
| FCB015 | Black  | 135 mm | 210 mm | 760x10 mm | -     |
| FCB016 | Black  | 175 mm | 300 mm | 900x10 mm | 7     |
| FCB017 | Black  | 85 mm  | 130 mm | 500x10 mm | -     |

## FCD - Laboratory jacks



- 1 | Made of aluminum with scissor type support
- 2 | With manual knob, anti-slip legs and lateral hole for rods

| Code   | Dimensions | Maximum load |
|--------|------------|--------------|
| FCD001 | 10x10 cm   | 14 kg        |
| FCD002 | 15x15 cm   | 27 kg        |
| FCD003 | 20x20 cm   | 38 kg        |



## FCG - Clamps for burettes, tubes

### Clamps 2 prongs



1 | Made of chrome plated metal and prongs coated with PVC

| Code   | Opening  | Length | Bosshead                   |
|--------|----------|--------|----------------------------|
| FCG001 | 12-45 mm | 210 mm | No                         |
| FCG002 | 20-60 mm | 220 mm | No                         |
| FCG003 | 7-25 mm  | 205 mm | No                         |
| FCG004 | 12-45 mm | 110 mm | Yes (fixed up to 17 Ø mm)  |
| FCG005 | 4-20 mm  | 100 mm | Yes (fixed up to 14 Ø mm)  |
| FCG006 | 7-25 mm  | 100 mm | Yes (fixed up to 14 Ø mm)  |
| FCG007 | 12-45 mm | 155 mm | Yes (rotary up to 18 Ø mm) |
| FCG008 | 7-25 mm  | 150 mm | Yes (rotary up to 18 Ø mm) |



### Automatic clamps



- 1 | Made of chrome plated metal, to hold burettes and thermometers  
2 | Fastener with spring, to hold diameters up to 25 mm

| Code   | Opening | Length | Bosshead | Rod (ØxL) |
|--------|---------|--------|----------|-----------|
| FCG009 | 0-25 mm | 110 mm | Sí       | -         |
| FCG010 | 0-25 mm | 160 mm | No       | 8x120 mm  |



### Clamps for 1 burette



| Code   | Opening    | Colour |
|--------|------------|--------|
| FCG011 | Up to 20mm | White  |



### Double clamps for burettes



- 1 | Made of oven-coated aluminum  
2 | With bosshead for rods up to 13 mm diameter

| Code   | Material | Colour | Batch |
|--------|----------|--------|-------|
| FCG012 | Aluminum | White  | 20    |
| FCG013 | Plastic  | White  | 20    |



### Clamps for burettes, PP



| Code   | Capacity  | For rods of | Batch |
|--------|-----------|-------------|-------|
| FCG014 | 2 buretas | 10 a 12 mm  | 6     |
| FCG015 | 1 bureta  | 10 a 12 mm  | 6     |



## FCJ - FCJ-Clamps $\frac{3}{4}$ prongs

### Clamps 3 prongs without bosshead



1 | In chrome plated metal, with PVC coated prongs

| Code   | Opening | Length | Adjustment   | Rod (ØxL) |
|--------|---------|--------|--------------|-----------|
| FCJ001 | 0-30 mm | 175 mm | Simple       | 8x125 mm  |
| FCJ002 | 0-70 mm | 240 mm | Simple, blue | 8x150 mm  |
| FCJ003 | 0-95 mm | 240 mm | Simple, red  | 8x150 mm  |
| FCJ004 | 0-95mm  | 240 mm | Simple, blue | 12x140 mm |
| FCJ005 | 0-95mm  | 240 mm | Simple, blue | 8x150 mm  |
| FCJ006 | 0-50mm  | 210 mm | Double       | 10x140 mm |
| FCJ007 | 0-85 mm | 250 mm | Double       | 12x155 mm |

### Clamps 3 prongs with bosshead



1 | In chrome plated metal, with PVC coated prongs

2 | Rotary bosshead for rods up to 18 mm

| Code   | Opening | Length | Adjustment |
|--------|---------|--------|------------|
| FCJ008 | 0-30 mm | 125 mm | Simple     |
| FCJ009 | 0-70 mm | 165 mm | Simple     |
| FCJ010 | 0-60 mm | 145 mm | Double     |
| FCJ011 | 0-90 mm | 170 mm | Double     |

### Clamps 4 prongs,



1 | Made of chrome plated metal, with coated prongs

2 | Opening 0/80mm

The model with rotary bosshead holds rods up to 18 mm Ø

| Code   | Length | Bosshead | Rod (ØxL)  |
|--------|--------|----------|------------|
| FCJ012 | 230 mm | No       | 8x155 mm   |
| FCJ013 | 250 mm | No       | 10x130 mm* |
| FCJ014 | 230 mm | No       | 12x145 mm  |
| FCJ015 | 160 mm | Rotary   | -          |

\* Adjustable angle 180°

## FCK - Special clamps

### For thermometers



1 | Made of chrome plated metal, with rotary bosshead

2 | For rods up to 18 mm

| Code   | Length | Opening |
|--------|--------|---------|
| FCK001 | 140 mm | 6-15 mm |

## ▶ FCK - Special clamps



### ▶ Suspension clamp for thermometers

- 1 | Made of chrome plated metal, with fix bosshead
- 2 | For rods up to 18 mm

| Code   | Length | Batch |
|--------|--------|-------|
| FCK002 | 130 mm | 2     |



### ▶ Chain clamp for big diameters

- 1 | In stainless steel, with chain and spring clamp

| Code   | For diameters |
|--------|---------------|
| FCK003 | 90/145 mm     |



## ▶ FCM - Clamps for ground joints

### ▶ Clips for tapered joints



- 1 | In chrome plated metal for tapered ground joints

| Code   | Ground |
|--------|--------|
| FCM001 | 10/19  |
| FCM002 | 14/23  |
| FCM003 | 19/26  |
| FCM004 | 24/29  |
| FCM005 | 29/32  |
| FCM006 | 45/40  |



### ▶ Clip POM



- 1 | They don't scratch glass, autoclavable

| Code   | Colour | Ground | Batch |
|--------|--------|--------|-------|
| FCM007 | Yellow | 14/23  | 50    |
| FCM008 | Blue   | 19/26  | 80    |
| FCM011 | Green  | 24/29  | 50    |
| FCM010 | Red    | 29/32  | 25    |
| FCM009 | Brown  | 45/40  | 10    |



### ▶ Spherical joint clamp



- 1 | Made of stainless steel, with screw lock for maximum safety
- 2 | To hold spherical ground joints

| Code   | Joint diameter |
|--------|----------------|
| FCM019 | 13 mm          |
| FCM020 | 19 mm          |
| FCM021 | 29 mm          |
| FCM022 | 35 mm          |



## ▶ FCP - bossheads

### ▶ Double bossheads



REF. FCP009



1 | They allow assembling pieces in angles of 90°

| Code   | Description             | Length | Varillas | Batch |
|--------|-------------------------|--------|----------|-------|
| FCP001 | Painted small           | 53 mm  | 13 mm    | 10    |
| FCP002 | Painted medium          | 70 mm  | 16 mm    | 9     |
| FCP003 | Painted large           | 84 mm  | 21 mm    | 7     |
| FCP004 | Painted extra large     | 97 mm  | 25 mm    | -     |
| FCP005 | Zinc plated small       | 53 mm  | 13 mm    | 9     |
| FCP006 | Zinc plated medium      | 70 mm  | 16 mm    | 9     |
| FCP007 | Zinc plated large       | 84 mm  | 21 mm    | 7     |
| FCP008 | Zinc plated extra large | 97 mm  | 25 mm    | 7     |
| FCP009 | Zinc plated rounded     | 100 mm | 16 mm    | -     |

### ▶ Double, rotary



| Code   | Rods up to |
|--------|------------|
| FCP011 | 20/13 mm   |
| FCP012 | 18 mm      |

### ▶ Double bosshead, resin coated



| Code   | Rods up to |
|--------|------------|
| FCP010 | 16 mm      |

### ▶ Bosshead model Phywe



1 | Metallic, cross arrangement

| Code   | Colour | Length | Rods up to |
|--------|--------|--------|------------|
| FCP013 | Grey   | 170 mm | 24 mm      |

## FCP - bossheads

### Universal bossheads



1| For parallel, perpendicular and T-shape arrangements

| Code   | Colour        | Length | Rods up to | Batch |
|--------|---------------|--------|------------|-------|
| FCP014 | Chrome plated | 55 mm  | 16 mm      | 12    |
| FCP015 | Painted       | 55 mm  | 16 mm      | 25    |



### Bosshead para montajes



- 1| Bosshead type "P": to assemble two rods in right angle  
2| Bosshead type "Trevin": to assemble multiple stands and in 3 different angles

| Code   | Model  | Rods up to | Batch |
|--------|--------|------------|-------|
| FCP016 | Type P | 10 mm      | -     |
| FCP017 | Type P | 12 mm      | 10    |
| FCP018 | Type P | 14 mm      | -     |
| FCP019 | Type P | 16 mm      | -     |
| FCP020 | Trevin | 9-13 mm    | -     |



## FCR - Open retort rings



### With shank, chrome plated steel

- 1| Open retort ring without bosshead, made of chrome plated steel  
2| For retort stands, tripod support stands, etc.

| Code   | Int. Ø | Total length | Shank length |
|--------|--------|--------------|--------------|
| FCR001 | 45 mm  | 215 mm       | 155 mm       |
| FCR002 | 80 mm  | 255 mm       | 155 mm       |
| FCR003 | 105 mm | 255 mm       | 155 mm       |
| FCR004 | 120 mm | 270 mm       | 150 mm       |



### With bosshead, chrome plated steel

- 1| Open retort ring with bosshead, made of chrome plated steel  
2| For retort stands, tripod support stands, etc.

| Code   | Diameter | Length (center/bosshead) |
|--------|----------|--------------------------|
| FCR009 | 50 mm    | 95 mm                    |
| FCR010 | 80 mm    | 130 mm                   |
| FCR011 | 100 mm   | 130 mm                   |
| FCR012 | 140 mm   | 110 mm                   |





## FCV - Closed retort rings



## ▶ With shank, chrome plated steel



- 1 | Closed retort ring without bosshead, made of chrome plated steel
- 2 | For retort stands, tripod support stands, etc.

| Code   | Int. Ø | Total length | Shank length |
|--------|--------|--------------|--------------|
| FCV001 | 45 mm  | 200 mm       | 155 mm       |
| FCV002 | 65 mm  | 225 mm       | 155 mm       |
| FCV003 | 85 mm  | 250 mm       | 155 mm       |
| FCV004 | 105 mm | 255 mm       | 155 mm       |

## ▶ With bosshead, chrome plated steel



- 1 | Closed retort ring with bosshead, made of chrome plated steel
- 2 | For retort stands, tripod support stands, etc.

| Code   | Diameter | Length (center/bosshead) |
|--------|----------|--------------------------|
| FCV005 | 50 mm    | 110 mm                   |
| FCV006 | 80 mm    | 110 mm                   |
| FCV008 | 125 mm   | 150 mm                   |



## FCY - Rods without thread



## ▶ Rods for laboratory frameworks



| Code   | Material        | Diameter | Length  |
|--------|-----------------|----------|---------|
| FCY002 | Chrome plated   | 12 mm    | 60 mm   |
| FCY003 | Chrome plated   | 12 mm    | 200 mm  |
| FCY004 | Chrome plated   | 12 mm    | 350 mm  |
| FCY005 | Chrome plated   | 12 mm    | 700 mm  |
| FCY006 | Chrome plated   | 12 mm    | 1000 mm |
| FCY007 | Chrome plated   | 12 mm    | 2000 mm |
| FCY008 | Steel           | 12 mm    | 60 mm   |
| FCY009 | Steel           | 12 mm    | 200 mm  |
| FCY010 | Steel           | 12 mm    | 350 mm  |
| FCY011 | Steel           | 12 mm    | 700 mm  |
| FCY012 | Steel           | 12 mm    | 1000 mm |
| FCY013 | Steel           | 12 mm    | 2000 mm |
| FCY014 | Stainless steel | 12 mm    | 60 mm   |
| FCY015 | Stainless steel | 12 mm    | 200 mm  |
| FCY016 | Stainless steel | 12 mm    | 350 mm  |
| FCY018 | Stainless steel | 12 mm    | 1000 mm |
| FCY019 | Stainless steel | 12 mm    | 2000 mm |



## FFB - Tripod stand



## ▶ Round



- 1 | Ring with round section, with rubber caps in the legs

| Code   | Material        | Diameter | Height |
|--------|-----------------|----------|--------|
| FFB001 | Steel           | 125 mm   | 200 mm |
| FFB002 | Steel           | 150 mm   | 200 mm |
| FFB003 | Steel           | 185 mm   | 200 mm |
| FFB004 | Stainless steel | 120 mm   | 200 mm |
| FFB005 | Stainless steel | 150 mm   | 200 mm |



## FFB - Tripod stand



### Triangular

- 1 | Rings and legs made of steel, ring with triangular section
- 2 | With rubber caps in the legs

| Code   | Side   | Height |
|--------|--------|--------|
| FFB006 | 120 mm | 200 mm |
| FFB007 | 150 mm | 200 mm |
| FFB008 | 160 mm | 200 mm |



## FFD - Iron wire gauze



- 1 | With ceramic fiber center, without asbestos.
- 2 | To heat substances with Bunsen

| Code   | Dimensions | Ceramic Ø | Batch |
|--------|------------|-----------|-------|
| FFD001 | 12x12 cm   | 80 mm     | 20    |
| FFD002 | 15x15 cm   | 100 mm    | 20    |
| FFD003 | 20x20 cm   | 145 mm    | 20    |



## FFG - Triangles

### Pipeclay triangles



- 1 | Composed of three fireclay tubes made of pipeclay. Joined in triangle shape by thick wires of galvanized metal

| Code   | Side length | Tube Ø |
|--------|-------------|--------|
| FFG001 | 30 mm       | 9 mm   |
| FFG002 | 50 mm       | 8 mm   |
| FFG003 | 65 mm       | 8 mm   |
| FFG004 | 90 mm       | 8 mm   |



## FFJ - Burners

### Alcohol lamps



| Code   | Description                                  |
|--------|----------------------------------------------|
| FFJ002 | Alcohol lamp safety system                   |
| FFJ007 | Meter of wick (in pieces of 20 cm) for lamps |





## FFJ - Burners

## Laboratory burners



- 1 | With adjustable gas and air inlets
- 2 | Tapered serrated gas connection



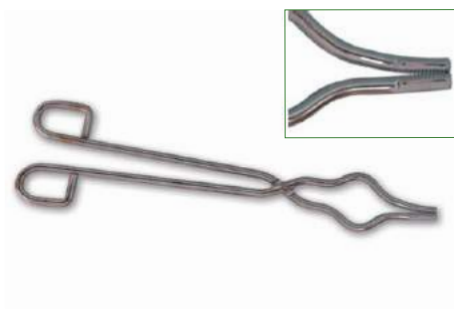
| Code   | Description                      | Batch |
|--------|----------------------------------|-------|
| FFJ003 | Micro Bunsen burner, natural gas | -     |
| FFJ004 | Micro Bunsen burner, GLP         | -     |
| FFJ005 | Bunsen burner, natural gas       | 30    |
| FFJ006 | Bunsen burner, GLP               | 30    |

page  
[80]



## FFL - Tongs for crucibles and evaporating dishes

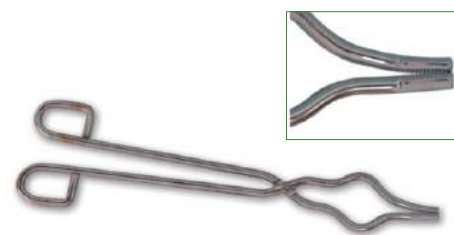
## For crucibles, chromed plated steel



- 1 | With narrow neck and curved serrated tips to ensure grip

| Code   | Total length | Opening |
|--------|--------------|---------|
| FFL001 | 150 mm       | 20 mm   |
| FFL002 | 200 mm       | 28 mm   |
| FFL003 | 250 mm       | 32 mm   |
| FFL004 | 300 mm       | 32 mm   |
| FFL005 | 350 mm       | 32 mm   |
| FFL006 | 400 mm       | 40 mm   |
| FFL007 | 450 mm       | 40 mm   |

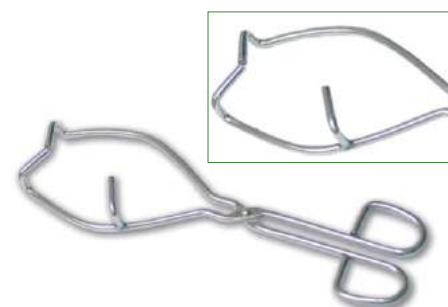
## For crucibles, stainless steel



- 1 | With narrow neck and curved serrated tips to ensure grip

| Code   | Total length | Opening |
|--------|--------------|---------|
| FFL009 | 200 mm       | 25 mm   |
| FFL010 | 250 mm       | 28 mm   |
| FFL011 | 300 mm       | 32 mm   |

## For evaporating dishes, stainless steel



- 1 | For porcelain dishes u other flat bottom containers

| Code   | Total length | Opening   |
|--------|--------------|-----------|
| FFL012 | 260 mm       | 65/190 mm |

## FFN - Beaker tongs, tube clamps



### For beakers, 2 and 3 prongs

1 | Made of stainless steel, with PVC coated prongs for a better grip

| Code   | Model    | Opening   | Length |
|--------|----------|-----------|--------|
| FFN001 | 2 prongs | 50/150 mm | 275 mm |
| FFN002 | 3 prongs | 0/160 mm  | 250 mm |
| FFN003 | 3 prongs | 0/220 mm  | 300 mm |

### For test tubes

1 | For test tubes up to 25 mm diameter

| Code   | Model | Length | Batch |
|--------|-------|--------|-------|
| FFN005 | Steel | 150 mm | 10    |
| FFN006 | Wood  | 180 mm | 10    |



## FHD - Clamps

### Hoffman



- Made of nickel plated metal
- They have a compressor screw and a base with two positions; open or closed

| Code   | Opening |
|--------|---------|
| FHD001 | 12 mm   |
| FHD002 | 17 mm   |
| FHD003 | 20 mm   |
| FHD004 | 25 mm   |
| FHD005 | 30 mm   |
| FHD006 | 40 mm   |

### Mohr



1 | Made of nickel plated metal

| Code   | Length |
|--------|--------|
| FHD007 | 40 mm  |
| FHD008 | 50 mm  |
| FHD009 | 60 mm  |
| FHD010 | 70 mm  |
| FHD011 | 80 mm  |



## FHN - Laboratory tubing

### White rubber tubing



- In white natural rubber
- Supplied in roll of 10 meters

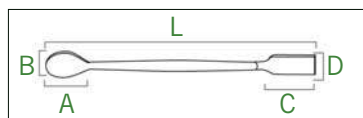
| Code   | Int. Ø | Ext. Ø |
|--------|--------|--------|
| FHN001 | 10 mm  | 14 mm  |
| FHN002 | 4 mm   | 6 mm   |
| FHN003 | 5 mm   | 7 mm   |
| FHN004 | 9 mm   | 12 mm  |





## FKB - Spatula-spoon

## ▶ Spatula-spoon, flat

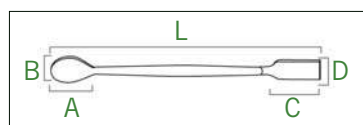


1 | Made of stainless steel

| Code   | Length | AxB      | CxD      | Batch |
|--------|--------|----------|----------|-------|
| FKB005 | 150 mm | 15x20 mm | 25x12 mm | 10    |
| FKB006 | 200 mm | 30x20 mm | 32x15 mm | 50    |
| FKB007 | 230 mm | 30x20 mm | 30x15 mm | -     |

page  
[82]

## ▶ Flat spoon, reinforced



1 | Made of stainless steel

| Code   | Length | AxB      | CxD      | Batch |
|--------|--------|----------|----------|-------|
| FKB008 | 100 mm | 20x15 mm | 22x13 mm | -     |
| FKB009 | 125 mm | 20x14 mm | 18x14 mm | 10    |
| FKB010 | 150 mm | 25x19 mm | 25x19 mm | 10    |
| FKB011 | 200 mm | 30x25 mm | 30x25 mm | 10    |
| FKB012 | 250 mm | 28x21 mm | 90x23 mm | -     |

## ▶ Groove spoon spatula



1 | Made of stainless steel

| Code   | Length | AxB      | CxD      |
|--------|--------|----------|----------|
| FKB015 | 120 mm | 15x13 mm | 15x10 mm |
| FKB016 | 140 mm | 20x15 mm | 17x11 mm |
| FKB017 | 160 mm | 25x18 mm | 17x12 mm |
| FKB018 | 180 mm | 30x20 mm | 20x13 mm |

## ▶ Set of 3 groove spatulas

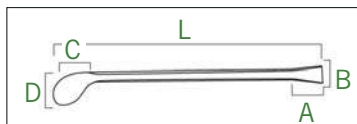


1 | Made of stainless steel

| Code         | FKB019                                                                                    |
|--------------|-------------------------------------------------------------------------------------------|
| Composed of: | Groove spoon spatula 120 mm<br>Groove spoon spatula 140 mm<br>Groove spoon spatula 160 mm |

FKB - Spatula-spoon

Flat-curved spoon spatula



1 | Made of stainless steel

| Code   | Length | AxB      | CxD      |
|--------|--------|----------|----------|
| FKB020 | 195 mm | 20x13 mm | 30x20 mm |



Spoon-spatula, for analysis

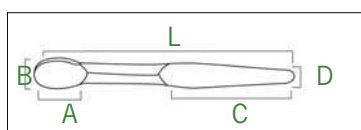


1 | Made of stainless steel

| Code   | Length | AxB      | CxD   |
|--------|--------|----------|-------|
| FKB021 | 224 mm | 40x19 mm | 48x10 |



Trough spatula, groove spoon



1 | Made of stainless steel

| Code   | Length | AxB      | CxD      | Batch |
|--------|--------|----------|----------|-------|
| FKB022 | 200 mm | 30x24 mm | 90x17 mm | 10    |



Spoon spatula



1 | Made of porcelain, glazed

| Code   | Length | Width |
|--------|--------|-------|
| FKB023 | 88 mm  | 13 mm |



Spoon spatula



1 | In glazed porcelain

| Code   | Length |
|--------|--------|
| FKB024 | 103 mm |
| FKB025 | 148 mm |
| FKB026 | 164 mm |
| FKB027 | 187 mm |
| FKB028 | 200 mm |
| FKB029 | 250 mm |





## FKB - Spatula-spoon

## Espátula-cuchara, PP



- 1 | High resistance to chemical agents and solvents
- 2 | They can be sterilized in autoclave

| Code   | Colour | Length | Batch |
|--------|--------|--------|-------|
| FKB030 | Blue   | 16 cm  | 100   |
| FKB031 | Blue   | 18 cm  | 100   |
| FKB032 | Blue   | 20 cm  | 100   |
| FKB033 | Red    | 16 cm  | 100   |
| FKB034 | Red    | 18 cm  | 100   |
| FKB035 | Red,   | 20 cm  | 100   |



## FKD - Microspatula spoon



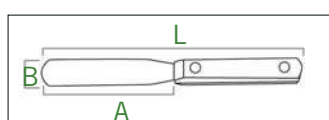
- 1 | In stainless steel

| Code   | Length | Spoon (LxW) | Spatula (LxW) |
|--------|--------|-------------|---------------|
| FKD001 | 190 mm | 35x9 mm     | 50x9 mm       |
| FKD002 | 230 mm | 35x16 mm    | 57x9 mm       |



## FKG - Spatulas

## Spatula with handle



| Code   | Length | AxB       |
|--------|--------|-----------|
| FKG005 | 170 mm | 80x20 mm  |
| FKG001 | 190 mm | 100x20 mm |
| FKG002 | 210 mm | 120x20 mm |

## Spatula with wooden handle



| Code   | Length | Spatula (LxW) |
|--------|--------|---------------|
| FKG006 | 215 mm | 100x20 mm     |
| FKG007 | 270 mm | 150x25 mm     |
| FKG009 | 315 mm | 200x25 mm     |



## FKL - Double spatula

### Flat-flat reinforced



1 | In stainless steel

| Code   | Total length | Spatula (LxW) |
|--------|--------------|---------------|
| FKL001 | 150 mm       | 35x18 mm      |
| FKL002 | 200 mm       | 45x18 mm      |



### Flat-flat



1 | In glazed porcelain

| Code   | Total length | Batch |
|--------|--------------|-------|
| FKL003 | 104 mm       | 5     |
| FKL004 | 186 mm       | 5     |
| FKL005 | 250 mm       | 5     |
| FKL006 | 298 mm       | 5     |



## FKN - Double spatula, micro

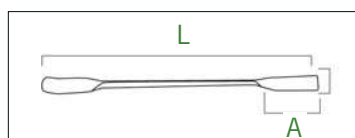


### Flat groove



1 | In stainless steel

| Code   | Total length | Spatula (LxW) |
|--------|--------------|---------------|
| FKN007 | 150 mm       | 30x5 mm       |
| FKN008 | 200 mm       | 30x5 mm       |



| Code   | Length | AxB     | Batch |
|--------|--------|---------|-------|
| FKN001 | 100 mm | 25x8 mm | -     |
| FKN002 | 120 mm | 25x9 mm | -     |
| FKN003 | 150 mm | 25x9 mm | -     |
| FKN004 | 170 mm | 30x9 mm | 10    |
| FKN005 | 150 mm | 28x6 mm | -     |



## FKP - Spoons

### Filled spatula



| Code   | Length | Spoon (LxW) | Spatula (LxW) |
|--------|--------|-------------|---------------|
| FKP001 | 215 mm | 25x11 mm    | 50x9 mm       |





## FKP - Spoons

## ▶ Spoon

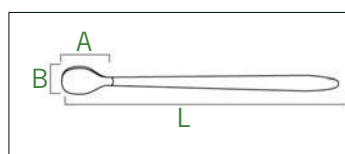


1 | In glazed porcelain

| Code   | Length |
|--------|--------|
| FKP002 | 237 mm |

page  
[86]

## ▶ Spoon

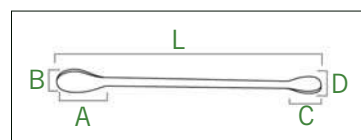


1 | Made of stainless steel

| Code   | Length | AxB      | Batch |
|--------|--------|----------|-------|
| FKP003 | 125 mm | 20x13 mm | 10    |
| FKP004 | 160 mm | 15x15 mm | 10    |
| FKP005 | 180 mm | 25x18 mm | -     |
| FKP006 | 220 mm | 30x18 mm | -     |



## FKR - Double spoon



| Code   | Length | AxB      | CxD      | Batch |
|--------|--------|----------|----------|-------|
| FKR001 | 160 mm | 25x18 mm | 15x11 mm | 10    |
| FKR002 | 200 mm | 30x20 mm | 25x15 mm | 10    |



## FKW - Scoops

## ▶ Measuring scoop



- 1 | Made of high density polyethylene  
2 | For food use, neutral colour

| Code   | Capacity | Total length | Useful length |
|--------|----------|--------------|---------------|
| FKW001 | 1100 ml  | 36 cm        | 24 cm         |
| FKW002 | 250 ml   | 24 cm        | 15,5 cm       |
| FKW003 | 2500 ml  | 40 cm        | 28,5 cm       |
| FKW004 | 600 m    | 30 cm        | 19,5 cm       |

## FM - MATERIAL DE DISECCIÓN



Dissection items are for educational and veterinary use only, not for medical use.  
Except those with the CE mark.

Disinfect before use

Wash hands with antibacterial soap before use

Don't use instruments with rust or corroded in any case

Never left any dirty instrument to dry

Wet immediately

Instruments can be sterilized in autoclave:

1. Use distilled water
2. Remove rests of blood tissue with a nylon brush
3. Leave the instruments open during autoclave process. Place thin and sharp parts in the upper part of the equipment
4. Autoclave 4/6 minutes at 132°C (270°F)
5. Dry 4/5 minutes
6. Don't leave instruments in the autoclave
7. After sterilization, leave a drop of silicone oil for a proper operation

## FMB - Scalpels/Knives



### Histologic folding knife

- 1 | Stainless steel blade

| Code   | Length | Handle  |
|--------|--------|---------|
| FMB001 | 110 mm | Metal   |
| FMB002 | 110 mm | Plastic |



### Scalpel fixed blade

- 1 | In stainless steel

| Code   | Total length | Blade length |
|--------|--------------|--------------|
| FMB003 | 150 mm       | 40 mm        |



### Disposable scalpels

- 1 | Blade of carbon steel, plastic handle
- 2 | Sterile CE0434
- 3 | Individually packed. Supplied in boxes of 10 units

| Code   | Number | Length |
|--------|--------|--------|
| FMB004 | 10     | 135 mm |
| FMB005 | 11     | 135 mm |
| FMB006 | 15     | 135 mm |
| FMB007 | 20     | 160 mm |
| FMB008 | 21     | 160 mm |
| FMB009 | 22     | 160 mm |
| FMB010 | 23     | 160 mm |
| FMB011 | 24,    | 160 mm |





## FMB - Scalpels/Knives

## ▶ Scalpel handle nº3



1 | In stainless steel

| Code   | Number    | Total length |
|--------|-----------|--------------|
| FMB020 | nº 3 long | 200 mm       |
| FMB021 | nº 3      | 125 mm       |

## ▶ Scalpel handle nº4



1 | Scalpel blades

| Code   | Number    | Total length |
|--------|-----------|--------------|
| FMB022 | nº 4 long | 220 mm       |
| FMB023 | nº 4      | 140 mm       |

## ▶ Scalpel blades



- 1 | Made of carbon steel
- 2 | The number assigns a universal form that identifies size and shape
- 3 | Sterile CE0434
- 4 | Individually packed. Supplied in boxes of 100 units

| Code   | Number | For handle nº |
|--------|--------|---------------|
| FMB012 | Nº 10  | 3             |
| FMB013 | Nº 11  | 3             |
| FMB014 | Nº 15  | 3             |
| FMB015 | Nº 20  | 4             |
| FMB016 | Nº 21  | 4             |
| FMB017 | Nº 22  | 4             |
| FMB018 | Nº 23  | 4             |
| FMB019 | Nº 24  | 4             |
| FMB025 | Nº 12  | 4             |

## ▶ Lancets



- 1 | Made of stainless steel
- 2 | Disposable, single use to take capillary blood
- 3 | Sterile CE0434
- 4 | Individually packed. Supplied in boxes of 200 units

| Code   |
|--------|
| FMB024 |



## FMD - Dissection needles

## ▶ Straight pin



- 1 | Stainless steel needle
- 2 | Metal handle

| Code   | Total length |
|--------|--------------|
| FMD001 | 125 mm       |
| FMD002 | 145 mm       |

**FMD - Dissection needles****► Straight pin, lancet shape**

1 | Needle in stainless steel

| Code   | Total length | Handle    |
|--------|--------------|-----------|
| FMD003 | 145 mm       | Stainless |
| FMD004 | 135 mm       | Plastic   |

**► Histologic needle, curved**

1 | Needle in stainless steel

| Code   | Total length |
|--------|--------------|
| FMD005 | 140 mm       |

**► Catheter**

1 | In stainless steel

| Code   | Total length |
|--------|--------------|
| FMD006 | 140 mm       |
| FMD007 | 200 mm       |

**► Grooved probe**

1 | In stainless steel

| Code   | Total length |
|--------|--------------|
| FMD008 | 140 mm       |

**FMG - Curved forceps****► London-College**

1 | Curved tip, in stainless steel

| Code   | Total length |
|--------|--------------|
| FMG001 | 115 mm       |
| FMG002 | 150 mm       |

**► Laboratory forceps**

1 | Curved tip, in stainless steel

| Code   | Total length |
|--------|--------------|
| FMG003 | 110 mm       |





## FMJ - Special forceps

## ▶ Dissecting forceps, without teeth



## 1 | Straight and striated tip

| Code   | Total length |
|--------|--------------|
| FMJ001 | 125 mm       |
| FMJ002 | 140 mm       |
| FMJ003 | 160 mm       |
| FMJ004 | 200 mm       |
| FMJ005 | 250 mm       |

## ▶ Thin tip



## 1 | Sharp tip in stainless steel

| Code   | Total length |
|--------|--------------|
| FMJ006 | 115 mm       |
| FMJ007 | 140 mm       |

## ▶ With teeth



- 1 | Instead of striated tip, they have teeth that fit in the opposite side teeth
- 2 | Used to hold gauzes, they also provide a firm grip in skin and hard tissues

| Code   | Teeth               | Total length |
|--------|---------------------|--------------|
| FMJ008 | 1:2 teeth           | 125 mm       |
| FMJ009 | 1:2 teeth           | 140 mm       |
| FMJ014 | 1:2 teeth, thin tip | 140 mm       |
| FMJ010 | 1:2 teeth           | 160 mm       |
| FMJ011 | 1:2 teeth           | 200 mm       |
| FMJ012 | 2:3 teeth           | 130 mm       |
| FMJ013 | 2:3 teeth           | 145 mm       |



## FML - Pinzas especiales

## ▶ Forceps Feilchenfeld



## 1 | Stainless steel. Suitable for autoclave sterilization, suitable for ultrasonic cleaning.

| Code   | Total length |
|--------|--------------|
| FML002 | 110 mm       |
| FML003 | 90 mm        |

## ▶ Forceps Feilchenfeld



## 1 | In stainless steel

| Code   | Total length |
|--------|--------------|
| FML004 | 140 mm       |



## ▶ FML - Special forceps

### ▶ Forceps "Kocher"



- 1| They have a mechanism with teeth which keeps the forceps fixed without pressing once they are closed. They are released easily
- 2| In stainless steel

| Code   | Model             | Total length |
|--------|-------------------|--------------|
| FML005 | Mosquito straight | 120 mm       |
| FML015 | Curved            | 140 mm       |
| FML016 | Curved            | 160 mm       |
| FML017 | Straight          | 140 mm       |



### ▶ For insects



- 1| In stainless steel

| Code   | Total length |
|--------|--------------|
| FML006 | 100 mm       |



### ▶ Specials



| Code   | Description                   |
|--------|-------------------------------|
| FML007 | Forceps spring effect         |
| FML010 | Forceps for slides (flat tip) |



### ▶ Forceps "Rochester-Pean"



- 1| In stainless steel

| Code   | Total length |
|--------|--------------|
| FML008 | 160 mm       |



### ▶ Forceps very thin tips

- 1| Thin tip, in stainless steel

| Code   | Total length |
|--------|--------------|
| FML009 | 110 mm       |



## ▶ FML - Special forceps

### ▶ Needle holders



- 1 | To pick and hold surgical needles, they have short and strong branches
- 2 | The size of the needle holder must be in accordance with the size of the needle:
  - Baumgartner for thin needles
  - Mayo-Hegar for thick needles

| Code   | Model       | Total length |
|--------|-------------|--------------|
| FML011 | Baumgartner | 140 mm       |
| FML012 | Baumgartner | 180 mm       |
| FML013 | Mayo-Hegar  | 140 mm       |
| FML014 | Mayo-Hegar  | 180 mm       |

## ▶ FMN - Scissors

### ▶ Surgical, curved



- 1 | Made of stainless steel
- 2 | They can be repeatedly cleaned in ultrasonic bath or sterilized in autoclave

| Code   | Model       | Total length |
|--------|-------------|--------------|
| FMN001 | Sharp-sharp | 140 mm       |
| FMN004 | Sharp-blunt | 130 mm       |
| FMN005 | Sharp-blunt | 160 mm       |
| FMN006 | Blunt-blunt | 125 mm       |
| FMN007 | Blunt-blunt | 140 mm       |

### ▶ Surgical, straight



- 1 | Made of stainless steel
- 2 | They can be repeatedly cleaned in ultrasonic bath or sterilized in autoclave

| Code   | Model                 | Total length |
|--------|-----------------------|--------------|
| FMN009 | Straight sharp-sharp  | 115 mm       |
| FMN010 | Straight sharp-sharp  | 140 mm       |
| FMN011 | Straight sharp-sharpa | 160 mm       |
| FMN012 | Straight sharp-blunt  | 125 mm       |
| FMN013 | Straight sharp-blunt  | 140 mm       |
| FMN014 | Straight sharp-blunt  | 160 mm       |
| FMN015 | Straight blunt-blunt  | 140 mm       |
| FMN016 | Straight blunt-blunt  | 160 mm       |

### ▶ Mayo



| Code   | Model    | Total length |
|--------|----------|--------------|
| FMN018 | Curved   | 140 mm       |
| FMN019 | Straight | 140 mm       |
| FMN020 | Straight | 160 mm       |

FMN - Scissors

▶ Tungsten scissors



| Code   | Model       | Total length |
|--------|-------------|--------------|
| FMN021 | Sharp-sharp | 130 mm       |
| FMN022 | Sharp-blunt | 130 mm       |
| FMN023 | Iris        | 110 mm       |
| FMN024 | Metzenbaum  | 140 mm       |



▶ Micro scissors Noye



| Code   | Total length |
|--------|--------------|
| FMN025 | 115 mm       |



▶ Scissors Iris



1 | In stainless steel

| Code   | Total length |
|--------|--------------|
| FMN026 | 116 mm       |



▶ Scissors Metzenbaum



1 | In stainless steel

| Code   | Total length |
|--------|--------------|
| FMN028 | 140 mm       |



▶ Scissor for bandages Lister



1 | In stainless steel

| Code   | Total length |
|--------|--------------|
| FMN029 | 140 mm       |



▶ Scissors Spencer



1 | En acero inoxidable.

| Code   | Total length |
|--------|--------------|
| FMN030 | 130 mm       |





## FMQ - Dissection kits

▶ 15 pieces



Code FMQ001

Includes:

- 1 catheter
- 1 grooved probe
- 1 Baumgartner needle holder
- 1 scalpel handle n°3
- 1 scalpel handle n°4
- 1 surgical scissors, straight, sharp-blunt
- 1 surgical scissors, curved, sharp-blunt
- 1 scissors Mayo, straight
- 1 scissors Mayo, curved
- 1 dissection forceps 1:2 teeth
- 1 dissection forceps without teeth
- 1 hemostatic forceps, curved
- 1 hemostatic forceps, straight
- 1 hemostatic forceps Mosquito, straight
- 1 dissection needle

▶ 9 pieces



Code FMQ002

Includes:

- 1 catheter
- 1 grooved probe
- 1 Baumgartner needle holder
- 1 scalpel handle n°3
- 1 scalpel handle n°4
- 1 scissors curved sharp-blunt
- 1 scissors straight sharp-blunt
- 1 forceps with 1:2 teeth
- 1 forceps without teeth
- 1 dissection case

▶ With snap closure



- 1 | With snap closure
- 2 | Supplied without instruments

| Code   | Model     | Dimensions (LxA) |
|--------|-----------|------------------|
| FMQ004 | 3 pieces  | 160x90 mm        |
| FMQ005 | 6 pieces  | 180x100 mm       |
| FMQ003 | 12 pieces | 168x105 mm       |

▶ Empty case



- 1 | Brown external colour, red inside
- 2 | Supplied without instruments

| Code   | Model     |
|--------|-----------|
| FMQ006 | 9 pieces  |
| FMQ007 | 15 pieces |

## FZB - Stabilizing rings



- 1 | To stabilize bottles, flasks... preventing them from floating when they are immersed
- 2 | Made of PVC coated steel

| Code   | Diameter | Wigth (prox.) |
|--------|----------|---------------|
| FZB001 | 48 mm    | 270 g         |
| FZB002 | 56 mm    | 520 g         |
| FZB003 | 61 mm    | 780 g         |
| FZB004 | 74 mm    | 960 g         |



page  
[95]

## FZD - Glass markers



| Code   | Model                             |
|--------|-----------------------------------|
| FZD003 | Glass marking pencil, diamond tip |
| FZD002 | Glass marking pencil, Chinagraph  |



## FZG - Compasses



| Code   | Description         | Diameter | Batch |
|--------|---------------------|----------|-------|
| FZG001 | Aluminum compass    | 40 mm    | 25    |
| FZG002 | Initiation compass  | 44 mm    | -     |
| FZG003 | Directional compass | 53 mm    | -     |
| FZG004 | Plastic compass     | 55 mm    | 20    |



LABORATORY  
SUPPLIERS

SERVICES

TRADEMARKS

STOCK

COMPETITIVITY

AUXILAB  
+ ROGO  
SAMPAIC



**ENDO**  
glassware

Own brand of the group Auxilab/ Rogo Sampaic.  
Please know the wide range of laboratory glass  
products we offer at your disposal. Glass of quality at a  
competitive price to satisfy all your needs





## [G] INDEX OF CONTENTS CENTRIFUGES

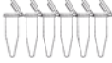
|                                     |            |
|-------------------------------------|------------|
| <b>[GB] Single-rotor .....</b>      | <b>99</b>  |
| GBC - Bench top, analogical .....   | 99         |
| GBF - Bench top, digital .....      | 99         |
| GBK - Accessories .....             | 101        |
| <b>[GD] Minicentrifuges .....</b>   | <b>102</b> |
| GDC - Minicentrifuges .....         | 102        |
| GDF - Accessories .....             | 103        |
| <b>[GG] Microhematocrit .....</b>   | <b>103</b> |
| GGC - Bench top .....               | 103        |
| GGF - Accessories .....             | 104        |
| <b>[GJ] For microtubes .....</b>    | <b>104</b> |
| GJC - Bench top .....               | 104        |
| GJK - Accessories, rotors .....     | 105        |
| <b>[GL] Universal .....</b>         | <b>105</b> |
| GLC - Bench top .....               | 105        |
| GLF - Bench top, refrigerated ..... | 106        |
| GLH - Accessories, rotors .....     | 106        |
| <b>[GN] High capacity .....</b>     | <b>107</b> |
| GNC - Bench top .....               | 107        |
| GNP - Accessories, adapters .....   | 107        |

TRADEMARKS:



### CHARTS: 'Tube compatibility'

Consult the compatibility of our centrifuges with different types of tubes and microtubes

| Description<br>Capacity | Microtube<br>1,5 / 2 mL                                                           | Microtube<br>0,5 mL                                                               | Microtube<br>0,2 mL                                                                 | PCR strips<br>0,2 mL                                                                | Microhematocrit<br>Capillary                                                        | Microplates                                                                         |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                         |  |  |  |  |  |  |
| GBC001                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GBC002                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GBC003                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GBF001                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GBF003                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GBF006                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GBF008                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GDC001                  | 8                                                                                 | 8                                                                                 | 8                                                                                   | 2                                                                                   |                                                                                     |                                                                                     |
| GDC002                  | 8                                                                                 | 8                                                                                 | 8                                                                                   | 2                                                                                   |                                                                                     |                                                                                     |
| GDC003                  | 8                                                                                 | 8                                                                                 | 8                                                                                   | 2                                                                                   |                                                                                     |                                                                                     |
| GDC004                  | 8                                                                                 | 8                                                                                 | 8                                                                                   | 2                                                                                   |                                                                                     |                                                                                     |
| GDC005                  | 8                                                                                 | 8                                                                                 | 8                                                                                   | 2                                                                                   | 12                                                                                  |                                                                                     |
| GGC001                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 24                                                                                  |                                                                                     |
| GGC002                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 24                                                                                  |                                                                                     |
| GJC002                  | 24                                                                                | 36                                                                                |                                                                                     | 4                                                                                   | 24                                                                                  |                                                                                     |
| GJC006                  | 12                                                                                | 12*                                                                               | 12*                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| GLC001                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GLF001                  | 12 or 24                                                                          | 36                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| GNC001                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 4                                                                                   |

| Description<br>Capacity | Tube 15 mL<br>16x100 mm                                                             | Tube 10 mL<br>13x100 mm                                                             | Tube 10 mL<br>16x80 mm                                                              | Tube 5 mL<br>12x75 mm                                                               | Tube 5 mL<br>13x53 mm                                                               | Falcon type<br>15 mL                                                                  | Falcon type<br>50 mL                                                                  | Tube 100 mL<br>40x100 mm                                                              | Tube 250 mL<br>60x130 mm                                                              |
|-------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                         |  |  |  |  |  |  |  |  |  |
| GBC001                  | 12                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                     |                                                                                       |                                                                                       |                                                                                       |
| GBC002                  | 12                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GBC003                  |                                                                                     |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GBF001                  | 6                                                                                   | 6*                                                                                  |                                                                                     | 6*                                                                                  |                                                                                     | 6                                                                                     |                                                                                       |                                                                                       |                                                                                       |
| GBF003                  | 12                                                                                  |                                                                                     |                                                                                     | 12*                                                                                 |                                                                                     | 12                                                                                    |                                                                                       |                                                                                       |                                                                                       |
| GBF006                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GBF008                  | 6                                                                                   | 6                                                                                   |                                                                                     | 6                                                                                   |                                                                                     | 6                                                                                     |                                                                                       |                                                                                       |                                                                                       |
| GBF010                  | 12                                                                                  | 12*                                                                                 |                                                                                     | 12*                                                                                 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GDC001                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GDC002                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GDC003                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GDC004                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GDC005                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GGC001                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GGC002                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GJC002                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 10                                                                                  |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| GLC001                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 16                                                                                    | 8                                                                                     | 4                                                                                     |                                                                                       |
| GLF001                  |                                                                                     |                                                                                     | 12                                                                                  |                                                                                     | 10                                                                                  |                                                                                       | 6                                                                                     |                                                                                       |                                                                                       |
| GNC001                  |                                                                                     | 48                                                                                  |                                                                                     | 72                                                                                  |                                                                                     | 24 or 32                                                                              | 4 or 8                                                                                | 4                                                                                     | 4                                                                                     |

\* with additional adapters

## Comparative charts for centrifuges models

| Code   | Model        | Adjustment | Max. speed (rpm) | Max. RCF(xg) |
|--------|--------------|------------|------------------|--------------|
| GBC001 | 2650         | Analogical | 4000             | 2147         |
| GBC002 | 2690         | Analogical | 5000             | 3130         |
| GBC003 | 2690/5       | Analogical | 5000             | 3130         |
| GBF001 | 2615/1       | Digital    | 4000             | 1790         |
| GBF003 | 2640/12      | Digital    | 4000             | 2432         |
| GBF006 | 2698         | Digital    | 4000             | 2000         |
| GBF008 | Fugelab-GB8  | Digital    | 6500             | 3684         |
| GBF010 | Fugelab-GB10 |            |                  |              |
| GDC001 | 2507/7       |            | 7200             | 3260         |
| GDC002 | 2507/10      |            | 10000            | 5610         |
| GDC003 | 2507/15      |            | 10000            | 5610         |
| GDC004 | 2507/25      |            | 10000            | 5610         |
| GDC005 | Fugevet      |            | 12000            | 5610         |
| GGC001 | 2900         | Analogical | 12000            | 15300        |
| GGC002 | 2924         | Digital    | 12000            | 15300        |
| GJC002 | 2624/2       | Digital    | 15000            | 20375        |
| GJC006 |              | Digital    | 15000            | 15596        |
| GLC001 | Medibas+     | Digital    | 4000             | 2790         |
| GLF001 | Multifrig    | Digital    | 18500            | 25330        |
| GNC001 | Multibas+    | Digital    | 5000             | 4980         |

## GBC - Bench top, analogical



### Series 2600

- 1| Steel casing furnace-painting.
- 2| Angular rotor.
- 3| Elastic rotor suspension with brushes.
- 4| Safety lid device.



| Code                       | GBC001              | GBC002   | GBC003   |
|----------------------------|---------------------|----------|----------|
| Model                      | 2650                | 2690     | 2690/5   |
| Capacity                   | 12x15mL             | 12x15mL  | 16x5mL   |
| Working mode               | Continuous o timer  |          |          |
| Timer (min)                | 1-30                | 1-30     | 1-30     |
| Speed range (rpm)          | 500-4000            | 500-5000 | 500-5000 |
| Adjustment de la velocidad | In steps of 500 rpm |          |          |
| RCF max. (g)               | 2147                | 3130     | 3130     |
| Dimensions approx. (cm)    | 29x36x27            | 41x38x38 | 41x38x38 |
| Weight approx. (Kg)        | 15                  | 15       | 15       |

## GBF - Bench top, digitals



### Series 2615/1

- 1| Steel casing furnace-painting.
- 2| Angular rotor.
- 3| Elastic suspension motor.
- 4| Lid safety device.



| Code                    | GBF001                   |
|-------------------------|--------------------------|
| Capacity                | 6x15mL                   |
| Timer (min)             | 1-59                     |
| Speed range (rpm)       | 1000-4000 (steps of 500) |
| RCF max. (g)            | 1790                     |
| Dimensions approx. (cm) | 28x28x25                 |
| Weight approx. (Kg)     | 5                        |



## GBF - Bench top, digital



► Series 2640 'ECO'



- 1 | External body made of high quality ABS plastic with steel base and sucking feet.
- 2 | Angular rotor.
- 3 | LED display .
- 4 | Motor de suspensión elástica, con escobillas.
- 5 | Electromagnetic safety and system of emergency lid opening in case of block due to accidental power failure.
- 6 | Possibility of programming speed (rpm) or RCF (g).

|                         |                                        |
|-------------------------|----------------------------------------|
| Code                    | GBF003                                 |
| Model                   | 2640/12                                |
| Capacity                | 12x15mL                                |
| Timer                   | 1-99min / continuous mode / short spin |
| Speed range (rpm)       | 200-4000 (steps of 10)                 |
| RCF max. (g)            | 2432                                   |
| Dimensions approx. (cm) | 38x31x29                               |
| Weight approx. (Kg)     | 13                                     |

► Series 2600



- 1 | Steel casing furnace-painting.
- 2 | Angular rotor
- 3 | Safety switch that avoids centrifugation if the lid is open and that automatically stops operation in case of opening the lid.

|                            |                    |
|----------------------------|--------------------|
| Code                       | GBF006             |
| Model                      | 2698               |
| Capacity                   | 8x15mL             |
| Timer (min)                | 1-99               |
| Speed range (rpm)          | 100-4000           |
| Adjustment de la velocidad | (steps of 100 rpm) |
| RCF max. (g)               | 2000               |
| Dimensions approx. (cm)    | 32x32x28           |
| Weight approx. (Kg)        | 15                 |

► Fugelab - GB08



- 1 | Digital display (LED) with time and speed indicators..
- 2 | Possibility of setting speed or RCF..
- 3 | Sound alarm at the end of operation and automatic lid opening.
- 4 | Metallic and autoclavable angle rotor and tube holders.
- 5 | Robust metal base and ABS plastic case. Metal lid with ABS cover..
- 6 | Lid safety device with electromagnetic lock.
- 7 | Maintenance-free induction motor.

|                    |                                                                                                                                   |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Code               | GBF008                                                                                                                            |
| Head               | Angular (angle of 25°)                                                                                                            |
| Max. capacity.     | 8 x 15/20 mL (tubes Ø 18 mm x L 90-120 mm)<br>8 adapters (tubes Ø 13 mm x L 75-100 mm)<br>8 adapters (tubes Ø 13 mm x L 55-75 mm) |
| Speed range        | 500 - 6500 rpm (steps of 100)                                                                                                     |
| RCF máx.           | 3684 g                                                                                                                            |
| Timer              | 1-30 min; mode continuous                                                                                                         |
| Acceleration time  | 25 seconds                                                                                                                        |
| Deceleration time  | 39 seconds                                                                                                                        |
| Dimensions (LxAxH) | 260x244x203 mm                                                                                                                    |
| Weight             | 4 Kg                                                                                                                              |
| Power supply       | 100-230 VAC, 50/60 Hz                                                                                                             |

▶ GBF - Bench top, digital



▶ Centrífuga angular digital Fugelab - GB10

- 1| Case and lid with metal base. Plastic rotor and tube holders.
- 2| Possibility of setting rpm or FCR.
- 3| Memory of the last program run.
- 4| Short spin function.
- 5| Sound alarm and automatic lid opening at the end of operation.
- 6| Emergency lid opening system in case of power failure.
- 7| Lid safety device with double lock (mechanic and electromagnetic locks).
- 8| Maintenance-free induction motor.



|                       |                             |
|-----------------------|-----------------------------|
| Code                  | GBF010                      |
| Rotor                 | Fixed-angle                 |
| Max. capacity         | 12x15 mL                    |
| Speed range           | 100- 4000 rpm (steps of 10) |
| Max. RCF              | 1770 g (steps of 10)        |
| Timer                 | 1-99 min                    |
| Dimensions (LxWxH)    | 485x375x290mm               |
| Weight                | 16 kg                       |
| Power                 | 230 V AC, 50Hz              |
| Noise (maximum speed) | ≤65dB(A)                    |

▶ GBK - Accessories

▶ CHART 1: 'Single-rotor accesories 2615/1 - 2640 - 2650 - 2690 - 2690/5 - 2698/5 - 2698'

|                                                                                     | Code   | Description                                                                          | Model                                                                                |                                                                                      |      |      |        |      |
|-------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------|------|--------|------|
|                                                                                     |        |                                                                                      | 2615/1                                                                               | 2640                                                                                 | 2650 | 2690 | 2690/5 | 2698 |
|  | GBK001 | Set of accessories<br>6 tube holders for 15 mL tubes<br>6 rubber cushions and 1 fuse |   |                                                                                      |      |      |        |      |
|  | GBK002 | Adapter tubes 10 mL<br>Dimensions: 13x100 mm                                         |   |                                                                                      |      |      |        |      |
|  | GBK003 | Adapter tubes 5 - 7 mL                                                               |   |                                                                                      |      |      |        |      |
|  | GBK004 | Brushes                                                                              |   |                                                                                      |      |      |        |      |
|  | GBK005 | Plastic tube holder                                                                  |                                                                                      |  |      |      |        |      |
|  | GBK006 | Adapter for 5 ml tubes<br>Dimentiosn: 12x75 mm                                       |                                                                                      |  |      |      |        |      |
|  | GBK007 | Pair of brush for centrifuges                                                        |  |                                                                                      |      |      |        |      |

 = Accesories **included** with indicated item

 = Accesories **compatible** with indicated item



## GBK - Accessories



## ► CHART 1: 'Single-rotor accesories 2615/1 - 2640 - 2650 - 2690 - 2690/5 - 2698/5 - 2698'

|                                                                                    | Code   | Description                     | Model  |      |                          |                          |                          |                          |      |
|------------------------------------------------------------------------------------|--------|---------------------------------|--------|------|--------------------------|--------------------------|--------------------------|--------------------------|------|
|                                                                                    |        |                                 | 2615/1 | 2640 | 2650                     | 2690                     | 2690/5                   | 2698/5                   | 2698 |
|   | GBK008 | Brushes                         |        |      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |      |
|   | GBK009 | Alluminium tube holder 15 mL    |        |      |                          | <input type="checkbox"/> |                          |                          |      |
|   | GBK010 | Aluminium holder tubes 5 mL     |        |      |                          |                          | <input type="checkbox"/> | <input type="checkbox"/> |      |
|   | GBK011 | Rubber ferrule for tubes 16x100 |        |      | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |      |
|  | GBK012 | Rubber ferrule for tubes 12x75  |        |      |                          |                          | <input type="checkbox"/> | <input type="checkbox"/> |      |

= Accesories **included** with indicated item= Accesories **compatible** with indicated item

## GDC - Minicentrifuges



## ► Series 2507



- 1| Very useful in PCR, sample preparation for HPLC and microfiltration.
- 2| Included angle rotor with adapters abd strip rotor.
- 3| Rotors can be changed easily and quickly without using a key.
- 4| Interruptor de seguridad en tapa que detiene el rotor en caso de apertura.
- 5| Very silent and stable thanks to their suction pads.
- 6| Switched source 85-240V, 50/60Hz, except model 2507/25 suitable for car (DC12V).

| Code                   | GDC001 | GDC002                            | GDC003          | GDC004        |
|------------------------|--------|-----------------------------------|-----------------|---------------|
| Model                  | 2507/7 | 2507/11                           | 2507/15         | 2507/25 (car) |
| <b>Capacity</b>        |        |                                   |                 |               |
| Angular rotor          |        | 8x1,5/2mL<br>8x0,5mL*<br>8x0,2mL* |                 |               |
| Strip rotor            |        | 2 strips of 8x0.2 mL              |                 |               |
| Speed (rpm)            | 7200   | 10000                             | 4000/7000/10000 |               |
| RCF max. (g)           | 3260   | 5610                              | 990/2910/5610   |               |
| Dimensions aprox. (cm) |        | 16x18x13                          |                 |               |
| Weight approx. (Kg)    |        | 0.8                               |                 |               |

\* Using the included adapters



## GDC - Minicentrifuges



### Fugevet model

- 1 | Designed for the veterinary sector.
- 2 | With 1 rotor for microhematocrit tubes, 1 angle rotor with adapters and 1 stripes rotor.
- 3 | 'Click system' to change rotors.
- 4 | Lid safety system that stops the rotor when open.
- 5 | Silent and stable thanks to its suction feet.
- 6 | Power supply 85-240 V, 50/60 Hz.



|                   |                                                                                                                                                                        |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Code              | GDC005                                                                                                                                                                 |
| Capacity          | Rotor for 12 microhematocrit tubes<br>Rotor for 8 microtubes: 8x1.5/2 mL, 8x0.5 mL*, 8x0.2 mL*<br>Rotor for 4 cryotubes: 4x5 mL, 4x1.8 mL*<br>Stripes rotor (8x0.2 mL) |
| Speed             | 4000/7000/12000 rpm                                                                                                                                                    |
| RCF               | 990/ 2910/ 5610 g                                                                                                                                                      |
| Dimensions aprox. | 155 x 175 x 125 mm                                                                                                                                                     |
| Weight approx.    | ±0,8 Kg                                                                                                                                                                |
| Powe supply       | AC 85-240V, 50/60Hz                                                                                                                                                    |

\* Using the included adapters

page  
[103]

## GDF - Accessories



### CHART 2: 'Minicentrifuges accessories 2507/7 - 2507/10 - 2507/15 - 2507/25 - Fugevet'

|  | Code   | Capacity                      | Model  |         |         |         |         |
|--|--------|-------------------------------|--------|---------|---------|---------|---------|
|  |        |                               | 2507/7 | 2507/11 | 2507/15 | 2507/25 | Fugevet |
|  | GDF001 | Adapter for microtubes 0.2 mL |        |         |         |         |         |
|  | GDF002 | Adapter for microtubes 0.5 mL |        |         |         |         |         |

= Accesories **included** with indicated item

= Accesories **compatible** with indicated item

## GGC - Microhematocrit, bench top



### Models 2900 and 2924

- 1 | Microhaematocrit rotor with numerated positions to identify samples easily.
- 2 | Security switch to avoid centrifue operation when safety-lid is open.
- 3 | Maitenance-free induction motor (model 2924).

|                         |                            |          |
|-------------------------|----------------------------|----------|
| Code                    | GGC001                     | GGC002   |
| Control                 | Analogical                 | Digital  |
| Capacity                | 24 capillary               |          |
| Timer (min)             | 1-10                       | 1-99     |
| Speed range (rpm)       | 500 - 12000 (steps of 100) |          |
| RCF max. (g)            | 15300                      |          |
| Dimensions approx. (cm) | 31x31x27                   | 27x27x20 |
| Weight approx. (Kg)     | 15                         | 12       |





## GGF - Accessories



## ▶ CHART 3: 'Microhematocrit accessories 2900 - 2924'

|                                                                                   | Code   | Description                   | Model                                                                               |                                                                                     |
|-----------------------------------------------------------------------------------|--------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                   |        |                               | 2900                                                                                | 2924                                                                                |
|  | GGF001 | Brushes                       |  |  |
|  | GGF002 | Silicone joint for centrifuge |  |  |

 = Accessories **included** with indicated item

 = Accessories **compatible** with indicated item



## GJC - For microtubes, bench top

## ▶ Model 2624/2



- 1 | Furnace painted steel casing and base. The lid is equipped with suspension mechanisms.
- 2 | Multiple optional rotors, agular and for microhematocrit
- 3 | LED display and y selector mono-mando.
- 4 | It's induction motor without brushes makes this equipment free of periodic maintenance.
- 5 | The lid is equipped with suspension mechanisms to avoid accidents during the centrifuge loaded or emptied.

|                         |                               |
|-------------------------|-------------------------------|
| Code                    | GJC002                        |
| Timer                   | 1-99s / 1-99min / Short spins |
| Speed range (rpm)       | 100-15000 (steps of 10)*      |
| RCF max. (g)            | 20375 g*                      |
| Capacity                | check available rotors        |
| Dimensions approx. (cm) | 36x28x26                      |
| Weight approx. (kg)     | 15                            |

\* Refer to rotor chart

## ▶ Digital centrifuge for microtubes, HiFuge-GJ6



- 1 | Large backlit LCD display
- 2 | Fixed angle rotor made of high strength plastic
- 3 | Possibility of setting speed or RCF. Short spin function
- 4 | Max. capacity 12 microtubes of 2/1.5 mL
- 5 | Overspeed protection system
- 6 | Maintenance-free brushless motor

|                           |                                  |
|---------------------------|----------------------------------|
| Reference                 | GJC006                           |
| Rotor                     | Fixed-angle rotor with lid       |
| Speed range               | 500-15000 rpm (steps of 100 rpm) |
| Max. RCF                  | 15100 xg                         |
| Timer                     | 30 sec – 99 min/Continuous mode  |
| Max. capacity             | 12 x 2/1.5 mL                    |
| Acceleration/Braking time | 11 sec / 9 sec                   |
| Dimensions                | 255x245x140 mm                   |
| Weight                    | 4.6 Kg                           |
| Power                     | 110-240V, 50-60Hz                |

▶ GJK - Accessories, rotors



▶ **TABLA 4:** 'Accessories for microtubes centrifuge 2624/2 '

|                                                                                    | Code   | Description                    | Max. speed | RCF      | Model<br>2624/2                                                                      |
|------------------------------------------------------------------------------------|--------|--------------------------------|------------|----------|--------------------------------------------------------------------------------------|
|   | GJK001 | 24 microtubes 1.5 - 2 mL       | 1500 rpm   | 20375 g  |   |
|   | GJK002 | 24 capillaries microhematocrit | 12000 rpm  | 15455 g  |   |
|   | GJK003 | 10 tubes of 5 mL               | 13500 rpm  | 192000 g |   |
|   | GJK004 | 32 microtubes of 0.2 mL (PCR)  | 14800 rpm  | 16200 g  |   |
|  | GJK005 | 36 microtubes of 0.5 mL        | 14800 rpm  | 16200 g  |  |

 = Accessories **included** with indicated item

 = Accessories **compatible** with indicated item

page  
[105]

▶ GLC - Universal, bench top



▶ **Model 2741, Medibas+**

- 1| External case and base made of steel and inner chamber made of stainless steel.
- 2| LED displays for control and adjustment of the different centrifugation parameters: and a multifunctional single button to set all parameters.
- 3| Supplied complete with swing-out rotor and adapters for different type of tubes; both swing-out rotor and adapters are autoclavable.
- 4| Electromechanical lock to avoid opening the lid during operation and safety mechanism that avoids operation if the lid is open.
- 5| Maintenance-free induction motor.
- 6| Adapters code GBK003 are suitable for 5-7 mL tubes.

|                            |                                                                            |
|----------------------------|----------------------------------------------------------------------------|
| Code                       | GLC001                                                                     |
| Capacity                   | 4 x 100mL (100x40 mm)<br>8 x 50mL (Falcon type)<br>16 x 15mL (Falcon type) |
| Timer (min)                | 1-99 / shorts spin                                                         |
| Speed range (rpm)          | 100-4000                                                                   |
| RCF max. (g)               | 2630 / 2720 / 2790                                                         |
| Rampas aceleración/frenado | 9                                                                          |
| Dimensions approx. (cm)    | 28x50x32                                                                   |
| Weight approx. (Kg)        | 34,5                                                                       |





## GLF - Bench top, refrigerated



## Model 2850, Multifrig



- 1| External case made of high quality ABS plastic with base made of steel and large sucker feet .
- 2| Admite una amplia selección de cabezales angulares opcionales.
- 3| Large back-lit LCD display and a multifunctional single button to set all parameters.
- 4| Electromechanical lock con sistema de apertura manual.
- 5| Protection system that stops centrifugation in case of over speed and rotor imbalance. Over temperature protection system
- 6| Maintenance-free induction motor.

|                         |                                    |
|-------------------------|------------------------------------|
| Code                    | GLF001                             |
| Timer                   | 1h 59' 59" / Shorts spin           |
| Speed range (rpm)       | 3000-18500 (steps of 100)*         |
| Max. RCF                | 25330 g                            |
| Temperature range (°C)  | -20 a +40                          |
| Pre-cooling function    | Yes                                |
| Programs                | 10 memories                        |
| Acceleration rates      | 0-9 (< 35 from zero to max. speed) |
| Deceleration rates      | 0-9 (< 30 from max. speed to zero) |
| Dimensions approx. (cm) | 61x52x37                           |
| Weight approx. (Kg)     | 55                                 |

\* refer to rotor table



## GLH - Accessories



## CHART 5: 'Multifrig, refrigerated centrifuge accessories'

|                                                                                     | Code   | Description                 | Max. speed | RCF     | Model Multifrig                                                                       |
|-------------------------------------------------------------------------------------|--------|-----------------------------|------------|---------|---------------------------------------------------------------------------------------|
|  | GLH001 | 12 microtubes of 1.5 - 2 mL | 18500 rpm  | 25330 g |  |
|  | GLH002 | 24 microtubes of 1.5 - 2 mL | 16000 rpm  | 23210 g |  |
|  | GLH003 | 36 microtubes of 0.5 mL     | 13500 rpm  | 13250 g |  |
|  | GLH004 | 10 tubes of 5 mL            | 1600 rpm   | 18140 g |  |
|  | GLH005 | 12 tubes of 50 mL           | 13000 rpm  | 15120 g |  |
|  | GLH006 | 6 tubes of 50 mL            | 12000 rpm  | 13750 g |  |
|  | GLH007 | 4 tubes of 100 mL           | 12000 rpm  | 14890 g |  |

= Accesories **included** with indicated item= Accesories **compatible** with indicated item

▶ GNC - Sobremesa



▶ Modelo 2751 Multibas+

- 1 | External case made of high quality ABS plastic with base made of steel .
- 2 | Available different angle rotors (not included) with different capacity and for different type of tubes.
- 3 | Large back-lit LCD display and a multifunctional single button to set all parameters.
- 4 | Electromechanical lock to avoid opening the lid during operation and safety mechanism that avoids operation if the lid is open.
- 5 | Maintenance-free induction motor.

|                         |                                    |
|-------------------------|------------------------------------|
| Code                    | GNC001                             |
| Timer                   | 1h 59' 59" / Short spin            |
| Speed range (rpm)       | 100-5000*                          |
| RCF max. (g)            | 4980*                              |
| Programs                | 9 memories                         |
| Acceleration rates      | 0-9 (<35s from zero to max. speed) |
| Deceleration rates      | 0-9 (<30s from max. speed to zero) |
| Dimensions approx. (cm) | 59x47x35                           |
| Weight approx. (Kg)     | 32                                 |

\* Check rotors chart



page  
[107]

▶ GNP - Accessories



▶ CHART 6: 'Adapters for Multibas+ centrifuge'

|  | Code   | Description                                      | Max. speed | RCF    | Model<br>Multibas+       |
|--|--------|--------------------------------------------------|------------|--------|--------------------------|
|  | GNP001 | Bottles with cap PP                              | -          | -      | <input type="checkbox"/> |
|  | GNP002 | Rotor for 4 bottles<br>with cap of 250 mL        | 5000 rpm   | 2120 g | <input type="checkbox"/> |
|  | GNP003 | Adapter set for 4 plastic tubes<br>of 100 mL     | 5000 rpm   | 4600 g | <input type="checkbox"/> |
|  | GNP004 | Adapter set for 4 tubes<br>Falcon type of 50 mL  | 5000 rpm   | 4980 g | <input type="checkbox"/> |
|  | GNP005 | Adapter set for 8 tubes<br>Falcon type of 50 mL  | 4000 rpm   | 3040 g | <input type="checkbox"/> |
|  | GNP006 | Adapter set for 24 tubes<br>Falcon type of 15 mL | 4000 rpm   | 3040 g | <input type="checkbox"/> |
|  | GNP007 | Adapter set for 32 tubes<br>Falcon type of 15 mL | 4000 rpm   | 3040 g | <input type="checkbox"/> |

= Accessories **included** with indicated item

☐ = Accessories **compatible** with indicated item



► **CHART 6:** 'Adapters for Multibas+ centrifuge'

|                                                                                   | Code   | Descripción                                                                   | Max. speed | RCF    | Model<br>Multibas+                                                                  |
|-----------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------|------------|--------|-------------------------------------------------------------------------------------|
|  | GNP008 | Adapter set for 48 tubes<br>for blood extraction 7 mL<br>Dimensions 13x100 mm | 4000 rpm   | 3040 g |  |
|  | GNP009 | Adapter set for 72 tubes<br>for blood extraction 7 mL<br>Dimensions 12x75 mm  | 4000 rpm   | 3040 g |  |
|  | GNP010 | Swing-out rotor 4 microtiter plates                                           | 3500 rpm   | 2120 g |  |



= Accesories **included** with indicated item



= Accesories **compatible** with indicated item





## [H] INDEX OF CONTENTS OPTICAL EQUIPMENTS

|                                         |            |
|-----------------------------------------|------------|
| <b>[HB] Microscopes .....</b>           | <b>110</b> |
| HBB - Education .....                   | 110        |
| HBC - Professional .....                | 111        |
| HBD - Digital .....                     | 113        |
| HBF - Fluorescence .....                | 114        |
| HBG - Polarization .....                | 115        |
| HBH - Metallurgical .....               | 116        |
| HBJ - Inverted biological .....         | 117        |
| HBK - Operation .....                   | 118        |
| HBL - Accessories, condensers .....     | 120        |
| HBM - Accessories, phase contrast ..... | 120        |
| HBN - Accessories, polarization .....   | 120        |
| HBP - Accessories, objectives .....     | 121        |
| HBQ - Accessories, eyepieces .....      | 121        |
| HBR - Accessories, others .....         | 121        |
| <b>[HD] Stereomicroscopes .....</b>     | <b>122</b> |
| HDB - Education .....                   | 122        |
| HDD - With zoom .....                   | 123        |
| HDG - Accessories, objectives .....     | 125        |
| HDH - Accessories, eyepieces .....      | 125        |
| HDJ - Accessories, supports .....       | 125        |
| HDK - Accessories, others .....         | 126        |
| <b>[HG] Videocameras .....</b>          | <b>126</b> |
| HGD - Videocameras C-mount .....        | 126        |

|                                              |            |
|----------------------------------------------|------------|
| <b>[HJ] Spectrophotometers .....</b>         | <b>127</b> |
| HJB - Visible .....                          | 127        |
| HJD - UV/Visible .....                       | 128        |
| HJG - Checking standards .....               | 131        |
| HJH - Accessories .....                      | 132        |
| HJK - Cells, glass .....                     | 133        |
| HJL - Cells, quartz .....                    | 135        |
| HJM - Cells, others .....                    | 136        |
| <b>[HM] Polarimeters .....</b>               | <b>137</b> |
| HMB - Polarimeters .....                     | 137        |
| HMF - Polarimeters, Calibration pieces ..... | 138        |
| HMG - Accessories .....                      | 138        |
| <b>[HP] Refractometers .....</b>             | <b>139</b> |
| HPB - Abbe .....                             | 139        |
| HPD - Hand, Brix scale .....                 | 139        |
| HPF - Hand, salinity .....                   | 142        |
| HPH - Hand, oenology .....                   | 143        |
| HPK - Hand, batteries .....                  | 144        |
| HPM - Hand, clinical .....                   | 145        |
| HPP - Hand, others .....                     | 145        |
| <b>[HR] Magnifying glasses .....</b>         | <b>148</b> |
| HRB - Hand .....                             | 148        |
| HRD - Table .....                            | 148        |
| HRG - Thread counters .....                  | 148        |

TRADEMARKS:





## HBB - Education

## ► Series 116



- 1| Monocular microscope with LED illumination. Operation with adapter (included) or with batteries
- 2| Monocular head inclined 45° and rotary 360°.
- 3| Coaxial coarse and fine focusing knobs .
- 4| Fix condenser with single with iris diaphragm and filter holder.

|                        |                                                                  |
|------------------------|------------------------------------------------------------------|
| Code                   | HBB003                                                           |
| Model                  | 116                                                              |
| Head                   | Monocular inclined 45° and rotary 360°                           |
| Eyepieces              | WF10x/18 mm (Ø 23 mm)                                            |
| Diopter correction     | No                                                               |
| Nosepiece              | Triple                                                           |
| Objectives             | Achromatic<br>4x (NA:0,10)<br>10x (NA:0,25)<br>40x (R) (NA:0,65) |
| Stage                  | 110 x 110 mm (clamps)                                            |
| Focus                  | Coaxial knobs                                                    |
| Condenser              | Fix single lens (A.N.: 0,65)                                     |
| Diaphragm              | Iris                                                             |
| Filter holde / Filters | Blue (Ø 32 mm)                                                   |
| Illumination           | LED diode (adjustable)                                           |
| Power                  | Adaptor (220V, 50/60Hz)<br>Batteries 3x1,5V (AA)                 |

## ► Serie 'E'



- 1| Available with monocular (model M-HB10) and binocular head (model B-HB11). The head is 30° inclined and 360° rotary. Binocular model presents interpupillary distance regulation and diopter adjustment in one of the eyepieces.
- 2| The eyepieces are provided with fixing screws to avoid being removed from the eyepiece tube..
- 3| Quadruple inverted nosepiece to make changing the sample easier and more comfortable..
- 4| Double layer mechanical stage with coaxial translation knobs; the microscope is equipped with a safety screw to fix the maximum upper position of the stage and avoid it to hit and damage the objectives.
- 5| Built-in rechargeable batteries that allows a cordless operation.

|              |                                                                                               |           |
|--------------|-----------------------------------------------------------------------------------------------|-----------|
| Code         | HBB010                                                                                        | HBB011    |
| Model        | M-HB10                                                                                        | B-HB11    |
| Head         | Monocular                                                                                     | Binocular |
|              | Siedentopf type; inclined 30° and rotary 360°<br>Interpupillary distance adjustable (55-75mm) |           |
| Eyepieces    | WF10x/18 mm                                                                                   |           |
| Nosepiece    | Quadruple inverted                                                                            |           |
| Objectives   | Achromatic objectives: 4X, 10X, 40X (R), 100X (R) (I)                                         |           |
| Stage        | Double layer mechanical stage, size 115x 125 mm ,<br>movement 75x50mm                         |           |
| Condenser    | Abbe (NA 1.25) with iris diaphragm and filter holder                                          |           |
| Focus        | Coarse and fine focusing coaxial knobs. Focusing scale 0.002mm                                |           |
| Illumination | LED 3W/4V, adjustable intensity                                                               |           |
| Power        | 100-240V; 50-60Hz<br>Rechargeable batteries 3x NiMH AA1400mAH 1.2V                            |           |

## ▶ HBC - Professionales

### ▶ Serie 100



- 1| Useful and robust microscopes available in different models to cover a wide range of applications.
- 2| Head inclined 45° and rotary 360° with interpupillary distance adjustment and diopter correction
- 3| Coaxial coarse and fine focusing knobs with tension adjustment ring and focus upper limit locking device.
- 4| Double layer mechanical stage with clamp to hold up to 2 slides.

|                      |                                                                                          |
|----------------------|------------------------------------------------------------------------------------------|
| Code                 | HBC002                                                                                   |
| Model                | 107                                                                                      |
| Head                 | Binocular                                                                                |
| Eyepieces            | WF10x/18 mm (Ø23 mm) + WF16x/11mm (Ø23 mm)                                               |
| Interpupillary dist. | 53-72 mm                                                                                 |
| Diopter correction   | ±2 diopters (one or both)                                                                |
| Nosepiece            | Quadruple                                                                                |
| Objectives           | Achromatic<br>4x (NA:0.10)<br>10x (NA:0.25)<br>40x (R) (NA:0.65)<br>100x (R)(I)(NA:1.25) |
| Stage                | 130 x 140 mm double layer mechanical                                                     |
| Condenser            | Abbe (AN: 1.25)                                                                          |
| Diaphragm            | Iris                                                                                     |
| Filters              | Blue and Green (Ø 32 mm)                                                                 |
| Lamp                 | LED                                                                                      |
| Power                | 100-240V, 50/60 Hz                                                                       |



### ▶ Serie 'P'



- 1| Available with binocular (model B-HC15) and trinocular (model T-HC16) Siedentopf head, 30° inclined and 360° rotary. They are provided with diopter correction adjustment in both eyepieces and regulation of the interpupillary distance.
- 2| Quadruple inverted nosepiece to make changing the sample easier and more comfortable.
- 3| Double layer mechanical stage with coaxial translation knobs and a clamp to hold up to 2 slides at the same time; the microscope is equipped with a safety screw to fix the maximum upper position of the stage and avoid it to hit and damage the objectives.
- 4| Coarse and fine focusing coaxial knobs at an ergonomic position and equipped with tension adjustment ring.
- 5| Built-in rechargeable batteries that allows a cordless operation.

|              |                                                                                               |            |
|--------------|-----------------------------------------------------------------------------------------------|------------|
| Code         | HBC015                                                                                        | HBC016     |
| Model        | B-HC15                                                                                        | T-HC16     |
| Head         | Binocular                                                                                     | Trinocular |
|              | Siedentopf type; inclined 30° and rotary 360°<br>Interpupillary distance adjustment (55-75mm) |            |
| Eyepieces    | WF10x/18 mm                                                                                   |            |
| Nosepiece    | Quadruple inverted                                                                            |            |
| Objectives   | Achromatic objectives:<br>4X, 10X, 40X (R), 100X (R) (I).                                     |            |
| Stage        | Double layer mechanical stage, size 132x 142 mm ,<br>movement 75x50mm                         |            |
| Condenser    | Abbe (NA 1.25) with iris diaphragm and filter holder                                          |            |
| Focusing     | Coarse and fine focusing coaxial knobs. Focusing scale 0.002 mm                               |            |
| Illumination | LED 3W/4V, adjustable intensity                                                               |            |
| Power        | 100-240V; 50-60Hz                                                                             |            |
|              | Rechargeable batteries 3x NiMH AA1400mAh 1.2V                                                 |            |





## HBC - Professional

## ► Serie 100



Mod. HBC007



- 1| Coobservation profesional microscopes.
- 2| Stage double layer mechanical

|            |                             |                             |
|------------|-----------------------------|-----------------------------|
| Code       | HBC007                      | HBC006                      |
| Model      | 204                         | 155                         |
| Head       | 2 Bineyepieces              | 5 Bineyepieces              |
|            | 45° 360°                    | 45° 360°                    |
| Eyepieces  | WF10x/18 mm                 | WF10x/18 mm*                |
| Nosepiece  | Quadruple                   | Quadruple                   |
| Objectives | Achromatic                  | Achromatic                  |
|            | 4x (NA:0.10)                | 4x (NA:0.10)                |
|            | 10x (NA:0.25)               | 10x (NA:0.25)               |
|            | 40x (R) (NA:0.65)           | 40x (R) (NA:0.65)           |
|            | 100x (R)(I)(NA:1.25)        | 100x (R) (I) (NA:1.25)      |
| Stage      | 140x140 mm                  | 130x140 mm                  |
| Focus      | Coaxial knobs               | Coaxial knobs               |
| Condenser  | Abbe (AN:1,25)              | Abbe (AN:1,25)              |
| Diaphragm  | Iris                        | Iris                        |
| Filters    | Blue and Green<br>(Ø 32 mm) | Blue and Green<br>(Ø 32 mm) |
| Lamp       | Halogen (6V, 20W)           | Halogen (24V, 100W)         |
| Power      | 220V, 50Hz                  | 220V, 50Hz                  |

\* bright pointer

## ► Serie 122



Mod. HBC010



Mod. HBC011



- 1| Siedentopf-type binocular head, rotary in 360° and 30° inclined .
- 2| Wide mechanical stage (180x150 mm) that can be moved around 75(X) x 50(Y) mm and presents scales along both axes for an easier localization of structures of interest.
- 3| Coaxial knobs at both sides of the stative for coarse and fine focusing adjustment. The knobs are provided with a friction control ring and with a focusing upper limit blocking lever
- 4| Köhler illumination system for a higher control of illumination thanks to the presence of graduated diaphragms.
- 5| Replacing the lamp is also easy and trouble-free.

|                      |                                          |            |                           |            |
|----------------------|------------------------------------------|------------|---------------------------|------------|
| Code                 | HBC008                                   | HBC009     | HBC010                    | HBC011     |
| Model                | 122/107                                  | 122/108    | 122/147                   | 122/148    |
| Head                 | Binocular                                | Trinocular | Binocular                 | Trinocular |
| Eyepieces            | WF10x/18mm (Ø23mm)<br>WF16x/11mm (Ø23mm) |            | WF10x/20mm (Ø30mm)        |            |
| Interpupillary dist. | 55-75mm                                  |            |                           |            |
| Diopter correction   | ±5 diopters (left eyepiece)              |            |                           |            |
| Nosepiece            | Quadruple inverted                       |            |                           |            |
| Objectives           | Achromatic                               |            | Plano achromatic          |            |
|                      | 4x (NA:0,10)                             |            | infinity corrected        |            |
|                      | 10x (NA:0,25)                            |            | 4x, ∞ (NA:0,10)           |            |
|                      | 40x (R) (NA:0,65)                        |            | 10x, ∞ (NA:0,25)          |            |
|                      | 100x (R) (I) (NA:1,25)                   |            | 40x, ∞ (R) (NA:0,65)      |            |
|                      |                                          |            | 100x, ∞ (R) (I) (NA:1,25) |            |
| Stage                | 180 x 150mm double layer mechanical      |            |                           |            |
| Illumination         | Köhler                                   |            |                           |            |
| Condenser            | Abbe (AN: 1,25)                          |            |                           |            |
| Diaphragm            | Field and aperture                       |            |                           |            |
| Filters              | Blue and Green (Ø 32 mm)                 |            |                           |            |
| Lamp                 | Halogen                                  | LED        | LED                       | LED        |
| Power                | 85V-240V/50-60Hz                         |            |                           |            |

## HBC - Professional

### ► Serie 158



- 1| The highest features and some ergonomic and sturdiness characteristics that make them especially suitable for daily work in research laboratories.
- 2| Quintuple inverted nosepiece with plan achromatic objectives.
- 3| Double layer mechanical stage of large dimensions (160x180 mm).
- 4| Coaxial knobs at both sides of the stative for coarse and fine focusing adjustment. The knobs are provided with a friction control ring and with a focusing upper limit blocking lever.
- 5| Köhler illumination system with field and aperture diaphragms.
- 6| Abbe condenser with a swing-out upper lens.
- 7| Lamp placed in accesible comparmnt with centering knobs.

|                      |                                                                                                                                                    |            |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Code                 | HBC013                                                                                                                                             | HBC014     |
| Model                | 158/7                                                                                                                                              | 158/8      |
| Head                 | Siedentopf type, 0-40° (adjustable) 360°<br>Binocular                                                                                              | Trinocular |
| Eyepieces            | WF10x/22mm (Ø30mm)                                                                                                                                 |            |
| Interpupillary dist. | 55-75mm                                                                                                                                            |            |
| Diopter correction   | ±5 diopters (left eyepiece)                                                                                                                        |            |
| Nosepiece            | Quintuple inverted                                                                                                                                 |            |
| Objectives           | Plano achromatic<br>infinity corrected<br>4x, ∞ (NA:0,10); 10x, ∞ (NA:0,25)<br>20x, ∞ (NA:0,40); 40x, ∞ (R) (NA:0,65)<br>100x, ∞ (R) (I) (NA:1,25) |            |
| Stage                | 160 x 180 mm double layer mechanical                                                                                                               |            |
| Diaphragm            | Field and aperture                                                                                                                                 |            |
| Filters              | Blue, Green and Yellow (Ø 32 mm)                                                                                                                   |            |
| Lamp                 | Halogen (12V, 50W)                                                                                                                                 |            |
| Power                | 110V-220V/ 50-60 Hz                                                                                                                                |            |

Mod. HBC013



Mod. HBC014



page  
[113]

## ► HBD - Digital

### ► Serie 135



- 1| Available monocular and binocular models.
- 2| Mechanical stage with traslation knobs and with graduated scale both sides.
- 3| Coaxial coarse and fine focusingknobs to operate easier and faster. Provided with tension ring and focusing upper limit blocking lever.
- 4| Includes TSView.

|                      |                                                              |               |
|----------------------|--------------------------------------------------------------|---------------|
| Code                 | HBD001                                                       | HBD002        |
| Model                | 135/6                                                        | 135/7         |
| Head                 | Monocular                                                    | Binocular     |
|                      | 30° 360°                                                     |               |
| Interpupillary dist. | -                                                            | 55-75mm       |
| Diopter correction   | -                                                            | left eyepiece |
| Eyepieces            | WF10x/18 mm (Ø23 mm)                                         |               |
| Nosepiece            | Quadruple (1 free)                                           |               |
| Objectives           | Achromatic<br>4x (NA:0,10); 10x (NA:0,25); 40x (R) (NA:0,65) |               |
| Stage                | 140 x 140 mm double layer mechanical                         |               |
| Focus                | Coaxial fine and coarse                                      |               |
| Condenser            | Abbe (AN: 1,25)                                              |               |
| Diaphragm            | Iris                                                         |               |
| Filters              | Blue, Green and Yellow (Ø 32 mm)                             |               |
| Lamp                 | LED diode (Adjustable)                                       |               |
| Power                | 100-240V, 50/60Hz                                            |               |
| Camera               | 1,3 Mp, 1280 x 1024 pixeles                                  |               |
| Output               | USB 2.0, Software TS View                                    |               |

Mod. HBD001



Mod. HBD002







## HBD - Digital

## Serie 148



- 1| Siedentopf-type binocular head, 30° inclined with interpupillary distance adjustment and diopter correction.
- 2| Inverted quadruple nosepiece for handling the slides more easily.
- 3| Large dimension mechanical stage (180x150 mm).
- 4| Coaxial fine and coarse focusing knobs. Provided with tension ring and focusing upper limit blocking lever. Fine focusing knobs are graduated.
- 5| Köhler illumination system with Field and aperture diaphragms and height-adjustable Abbe condenser.
- 6| Includes TSView .

|                      |                                                                                          |
|----------------------|------------------------------------------------------------------------------------------|
| Code                 | HBD003                                                                                   |
| Model                | 148/7                                                                                    |
| Head                 | Binocular                                                                                |
| Interpupillary dist. | 55 - 75 mm                                                                               |
| Diopter correction   | left eyepiece                                                                            |
| Eyepieces            | WF10x/22 mm (Ø30 mm)                                                                     |
| Nosepiece            | Quadruple inverted                                                                       |
| Objectives           | Achromatic<br>4x (NA:0,10) - 10x (NA:0,25)<br>40x (R) (NA:0,65) - 100x (R) (I) (NA:1,25) |
| Stage                | 180 x 150 mm double layer mechanical                                                     |
| Focus                | Coaxial fine and coarse                                                                  |
| Condenser            | Abbe (AN: 1,25)                                                                          |
| Diaphragm            | Field and aperture (Köhler type)                                                         |
| Filters              | Blue, Green and Yellow (Ø 32 mm)                                                         |
| Lamp                 | LED diode 1W (Adjustable)                                                                |
| Power                | 100-240V, 50/60Hz                                                                        |
| Camera               | 3,0 Mp, 2048 x 1536 pixels                                                               |
| Output               | USB 2.0, Software TS View                                                                |



## HBF - Fluorescence

## Epi-fluorescence microscope



- 1| Broad and solid base that provides great stability.
- 2| Inclined head 45° , interpupillary adjustment and diopter correction.
- 3| Sixdruple nosepiece with 4 plane achromatic objectives with infinity corrected optical, specially designed for fluorescence applications.
- 4| Turret with different interchangeable positions to select excitation filter of cube and emission of wavelength more appropriate for the used .
- 5| Köehler system for transmitted lighting with field diaphragms and opening and Abbe condenser with sliding lens of the optical way.
- 6| Mercury high pressure lamp of 100W for fluorecence through reflected light; housed in a separate compartment and with centering screws.

|                      |                                                                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Code                 | HBFO01                                                                                                                                   |
| Model                | 158/358                                                                                                                                  |
| Head                 | Trinocular; 360°                                                                                                                         |
| Interpupillary dist. | 50-75 mm with diopter correction                                                                                                         |
| Nosepiece            | Séxtuple                                                                                                                                 |
| Objectives           | Plano apo-achromatic Infinity correcte<br>4x, ∞ (A.N.: 0,15) - 10x, ∞ (A.N.: 0,35)<br>40x, ∞ (R) (A.N.: 0,75) - 100x, ∞ (R) (A.N.: 0,90) |
| Stage                | 180x160 mm / double layer mechanical (80x50 mm)                                                                                          |
| Illumination         | Köhler type, diaphragm Field and aperture                                                                                                |
| Condenser            | Abbe (AN: 1,25) slideable                                                                                                                |
| Lamp                 |                                                                                                                                          |
| Epi-fluorescence     | Mercury high pressure lamp 20V, 100W                                                                                                     |
| Transmitted          | Halogen lamp 12V, 50W (adjustable)                                                                                                       |
| Power                | 100-240V, 50/60Hz                                                                                                                        |



## HBG - Polarization

### ► Polarizing microscope, model 146 P

- 1| Rotary and circular stage, 160 mm diameter and a graduation from 0° to 360° with Vernier, resolution of 0.1° and mechanism to fix the stage position.
- 2| Siedentopf binocular head inclined 30°.
- 3| With rotary and graduated polarized and analyzer filter.
- 4| Bertrand lens sliding from the optical path for conoscopic observations and crack for the insertion of compensative plaques. Supplied with gypsum (1  $\lambda$ ), mica (1/4  $\lambda$ ) and quartz wedges.
- 5| Quadruple nosepiece with plan achromatic objectives.
- 6| Köhler illumination system with field.

|                      |                                                                                                                                                     |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Code                 | HBG001                                                                                                                                              |
| Model                | 146P                                                                                                                                                |
| Head                 | Binocular - Siedentof type                                                                                                                          |
| Eyepieces            | 2uds WF10x/22mm (Ø30mm)<br>1ud WF10x/20mm graduated (Ø30mm)                                                                                         |
| Interpupillary dist. | Yes                                                                                                                                                 |
| Diopter correction   | Left eyepiece                                                                                                                                       |
| Nosepiece            | Quadruple                                                                                                                                           |
| Objectives           | Plan achromatic, Infinity correcte<br>4x, $\infty$ (NA:0,10) - 10x, $\infty$ (NA:0,25)<br>40x, $\infty$ (R) (NA:0,65) - 60x, $\infty$ (R) (NA:0.85) |
| Polarizer            | Rotary 360°                                                                                                                                         |
| Analyzer             | Rotary 90° (Vernier graduated)                                                                                                                      |
| Bertrand Lens        | Sliding from the optical path                                                                                                                       |
| Supplementary wedges | gypsum (1 $\lambda$ ), mica (1/4 $\lambda$ ) and quartz                                                                                             |
| Stage                | Circular (160mm) and rotary 360°                                                                                                                    |
| Illumination         | Köhler type                                                                                                                                         |
| Condenser            | Abbe (AN: 1,25)                                                                                                                                     |
| Diaphragm            | Field and aperture                                                                                                                                  |
| Lamp                 | Halogen (6V, 20W)                                                                                                                                   |
| Power                | 100V-240V/50-60 Hz                                                                                                                                  |



### ► Polarizing microscope 501

- 1| Monocular head inclined 30°
- 2| Rotary and circular stage, 160 mm diameter and a graduation from 0° to 360° with Vernier, resolution of 0.1° and mechanism fix the sage position.
- 3| With rotary and graduated polarized and analyzer filter.
- 4| Bertrand lens sliding from the optical path for conoscopic observations and crack for the insertion of compensative plaques. Supplied with gypsum (1  $\lambda$ ), mica (1/4  $\lambda$ ) and quartz wedges.
- 5| Height adjustable Abbe condenser with iris diaphragm.

|                      |                                                                |
|----------------------|----------------------------------------------------------------|
| Code                 | HBG002                                                         |
| Model                | 501                                                            |
| Head                 | Monocular                                                      |
| Eyepieces            | WF10x/20mm (Ø23mm)                                             |
| Interpupillary dist. | Yes                                                            |
| Diopter correction   | Left eyepiece                                                  |
| Nosepiece            | Quadruple                                                      |
| Objectives           | Achromatic<br>4x (NA:0,10) - 10x (NA:0,25) - 40x (R) (NA:0,65) |
| Polarizer            | Rotary 360°                                                    |
| Analyzer             | Rotary 90° (Vernier graduated)                                 |
| Lens Bertrand        | Sliding from the optical path                                  |
| Supplementary wedges | gypsum (1 $\lambda$ ), mica (1/4 $\lambda$ ) and quartz        |
| Stage                | Circular (160mm) and rotary 360°                               |
| Illumination         | Köhler type                                                    |
| Condenser            | Abbe (AN: 1,25)                                                |
| Diaphragm            | Iris                                                           |
| Lamp                 | Halogen (12V, 30W)                                             |
| Power                | 85-230V, 50/60Hz                                               |





## HBH - Metallurgical

## Metallurgical



- 1| Very robust and large equipment with a high stability and a wide range of applications.
- 2| 30° inclined trinocular Siedentopf-Type head with interpupillary distance adjustment and diopter correction.
- 3| Three layer mechanical stage, very large (250x230 mm) and with a movement of 154 mm. Provided with a third layer for quick movements.
- 4| Köhler illumination system with field and aperture diaphragms.
- 5| Filter holder with green, yellow, blue and matt glass to get a high image quality.
- 6| Equipped with analyzer and polarizer that can be removed from the optical path.
- 7| The lamp is provided with a centering mechanism to get a correct adjustment.

|                      |                                                                                                                             |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Code                 | HBH004                                                                                                                      |
| Model                | 101                                                                                                                         |
| Head                 | Trinocular Siedentopf type, 30°                                                                                             |
| Eyepieces            | WF10x/22 mm wide field (Ø23 mm)                                                                                             |
| Interpupillary dist. | 55-75 mm                                                                                                                    |
| Diopter correction   | ±5 diopter compensation in left eyepiece holder                                                                             |
| Revolver             | Quintuple Rotary 360°                                                                                                       |
| Objectives           | Plan Achromatic<br>5x (A.N.: 0,12) - 10x (A.N.: 0,25)<br>20x (A.N.: 0,40) - 40x (R) (A.N.: 0,60) - 80x (R) (I) (A.N.: 0,80) |
| Stage                | 250 x 230 mm three layer mechanical (154 x 154 mm)                                                                          |
| Illumination         | Köhler type                                                                                                                 |
| Condenser            | Abbe (A.N.: 1,25) adjustable                                                                                                |
| Diaphragm            | Field and aperture                                                                                                          |
| Filters              | Mate, blue, green and yellow                                                                                                |
| Lamp                 | Halogen 6V, 20W                                                                                                             |
| Polarizing system    | Polarizer and analyzer can be removed from the light path                                                                   |
| Power                | 110-220V, 50/60 Hz                                                                                                          |

## Metallurgical microscope



- 1| Trinocular head type Siedentopf.
- 2| Quadruple nosepiece with plan achromatic objectives, infinity corrected optics.
- 3| Reflected or transmitted light:

**Reflected light system:** halogen lamp with regulator of intensity, field and aperture diaphragms and filter-holder that includes green, yellow and blue filters. With polarizer and analyzer rotary in 360° that can be removed from the light path.

**Transmitted light system:** halogen lamp with Abbe condenser (N.A.: 1.25) field and aperture diaphragms and mobile filter holder that includes green, blue and yellow filters.

|                          |                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Code                     | HBH005                                                                                                                           |
| Model                    | 146 M                                                                                                                            |
| Head                     | Trinocular Siedentopf type, inclined 30° and rotary 360°                                                                         |
| Eyepieces                | 2 uds WF10x/22 mm (Ø23 mm)<br>1 ud WF10x/20 mm with 0,1 mm reticle                                                               |
| Interpupillary dist.     | 55-75 mm                                                                                                                         |
| Diopter correction       | ±5 diopters in left eyepiece holder                                                                                              |
| Revolver                 | Quadruple                                                                                                                        |
| Objectives               | Plano achromatic infinity corrected<br>4x, ∞ (A.N.: 0,10) - 10x, ∞ (A.N.: 0,25)<br>20x, ∞ (A.N.: 0,40) - 40x, ∞ (R) (A.N.: 0,65) |
| Stage                    | 160 x 180 Double layer mechanical                                                                                                |
| Reflected illumination   |                                                                                                                                  |
| Lamp                     | Halogen 12 V, 30 W                                                                                                               |
| Diaphragms               | Field and aperture                                                                                                               |
| Filter holder            | Rotary; green, blue and yellow filters and polarizer filter                                                                      |
| Polarizing system        | Polarizer in filter holder and analyzer rotary 360°                                                                              |
| Transmitted illumination |                                                                                                                                  |
| Lamp                     | Halogen 12 V, 30 W                                                                                                               |
| Diaphragms               | Field diaphragm in precondenser and graduated aperture diaphragm                                                                 |
| Condenser                | Abbe (A.N. 1.25); adjustable height                                                                                              |
| Filter holder            | Mobile; filters green, blue and yellow                                                                                           |
| Power                    | 85-220V, 50/60 Hz                                                                                                                |

## HBH - Metallurgical

### ► Metalográfico invertido, model 403



- 1| Hight features metallurgical microscope. With inverted design, infinity corrected optics and incident light.
- 2| 45° inclined trinocular head.
- 3| Fixed stage with movable platform for sample movement.
- 4| Quadruple nosepiece with plan achromatic objectives that provides with infinity corrected optics.
- 5| Köhler illumination system with field and aperture diaphragms.
- 6| Equipped with polarizing filter and rotary and graduated analyzer.

|                         |                                                                                                                            |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Code                    | HBH006                                                                                                                     |
| Model                   | 403                                                                                                                        |
| Head                    | Trinocular; Siedentopf; inclined 45°                                                                                       |
| Eyepieces               | WF10x/22 mm gran campo Ø 23 mm                                                                                             |
| D. Interpupillary dist. | 50-75 mm                                                                                                                   |
| Diopter correction      | Right                                                                                                                      |
| Nosepiece               | Quadruple                                                                                                                  |
| Objectives              | Plano achromatic infinity corrected<br>4x, ∞ (A.N.: 0,10) - 10x, ∞ (A.N.: 0,25)<br>20x, ∞ (A.N.:0,40) - 40x, ∞ (A.N.:0,65) |
| Stage                   | Fija 242 x 172 mm with movable platform 128x186 mm                                                                         |
| Illumination            | Epi-Köhler                                                                                                                 |
| Condenser               | Abbe slideable                                                                                                             |
| Diaphragm               | Field and aperture                                                                                                         |
| Filters                 | Blue, green and yellow                                                                                                     |
| Lamp                    | 12V 30W                                                                                                                    |
| Power                   | 85-220V, 50/60Hz                                                                                                           |



page  
[117]

## ► HBJ - Inverted biological

### ► Serie 180



- 1| Inclined head with interpupillary distance adjustment and diopter correction.
- 2| Quadruple nosepiece with plan achromatic objectives. With 10x long distance objective for phase contrast.
- 3| Long distance condenser, centrable and adjustable with iris diaphragm and filter holder.
- 4| Large rectangular stage.

|                      |                                                                                                                                  |                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Code                 | HBJ001                                                                                                                           | HBJ002                                                                                                                           |
| Model                | 181                                                                                                                              | 182                                                                                                                              |
| Head                 | Trinocular, 30°                                                                                                                  | Binocular, 45°                                                                                                                   |
| Eyepieces            | WF10x/18mm (Ø23mm)                                                                                                               | WF10x/20mm (Ø23mm)                                                                                                               |
| Interpupillary dist. | 55-75mm                                                                                                                          | 55-75mm                                                                                                                          |
| Diopter correction   | ± 5 diopters (left eyepiece)                                                                                                     |                                                                                                                                  |
| Nosepiece            | Quadruple                                                                                                                        |                                                                                                                                  |
| Objectives           | Plan achromatic long distance<br>10x (A.N.: 0,25) phase contrast<br>10x (A.N.: 0,25)<br>25x (A.N.: 0,40)<br>40x (R) (A.N.: 0,65) | Plan achromatic long distance<br>25x (A.N.: 0,40) phase contrast<br>10x (A.N.: 0,25)<br>25x (A.N.: 0,40)<br>40x (R) (A.N.: 0,65) |
| Stage                | 200 x 150 mm<br>Movement 70x30 mm                                                                                                | 180x155 mm<br>Movement 75x50 mm                                                                                                  |
| Condenser            | Long distance with diaphragm and filter holder                                                                                   |                                                                                                                                  |
| Diaphragm            | Field                                                                                                                            | Iris                                                                                                                             |
| Filter               | Blue, yellow, green and neutral                                                                                                  |                                                                                                                                  |
| Lamp                 | Halogen (6V, 20W) adjustable intensity                                                                                           |                                                                                                                                  |
| Power                | 220V/50 Hz                                                                                                                       |                                                                                                                                  |



Code HBJ001

## HBK - Operation

## Serie 191



- 1| Long distance pantographic arm to move the head of the microscope up and down; it is provided with fixation screws to hold the head at the desired position. .
- 2| Star shaped base with 5 wheels and brake to easily move the microscope and fix it at the adequate place.
- 3| The head is provided with 3 magnification positions easily interchangeable .
- 4| Model 191/120 is supplied with C-mount for attaching a video camera and thus allowing visualization through a computer or monitor.
- 5| Illumination system: Coaxial illumination with cold light source and fiber optic cable

| Code                         | HBK001                                                            | HBK002       | HBK003   |
|------------------------------|-------------------------------------------------------------------|--------------|----------|
| Model                        | 191/101                                                           | 191/102      | 191/120  |
| Head                         | Straight                                                          | Inclined 45° | Straight |
| Magnification of observation | 6x                                                                | 6x           | 6x       |
| Magnification changer        | 3 positions: 0.6x, 1x, 1.6x                                       |              |          |
| Total magnification          | 3x-12x                                                            |              |          |
| Diopter adjustment           | +/-5D                                                             |              |          |
| Interpupillary distance      | 52-78 mm                                                          |              |          |
| Beamsplitter                 | No                                                                | No           | 50:50    |
| Coobservation tube           | No                                                                | No           | Optional |
| Video adapter                | No                                                                | No           | Rosca C  |
| Fine focusing range          | 10 mm                                                             |              |          |
| Filter                       | Built-in green and yellow filters                                 |              |          |
| Illumination system          | Coaxial illumination with cold light source and fiber optic cable |              |          |
| Halogen lamp                 | 21V, 150W; adjustable intensity                                   |              |          |
| Fiber-optic cable            | 1600 mm                                                           | 1600 mm      | 1700 mm  |
| Power                        | 110/220 V, 50/60 Hz                                               |              |          |
| Potency output               | <200W                                                             |              |          |

## Chart of magnification and field of view

## NOMINAL VALUE

| Objectives                     | F=200 mm |      |      | F=250* mm |      |      | F=300 mm |      |      | F=400* mm |      |      |
|--------------------------------|----------|------|------|-----------|------|------|----------|------|------|-----------|------|------|
| Magnification changer position | 1.6x     | 1x   | 0.6x | 1.6x      | 1x   | 0.6x | 1.6x     | 1x   | 0.6x | 1.6x      | 1x   | 0.6x |
| Total magnification            | 12x      | 7.5x | 4.7x | 9.6x      | 6x   | 3.7x | 8x       | 5x   | 3x   | 6x        | 3.8x | 2.3x |
| Field of view (mm)             | 15.8     | 25.3 | 40.6 | 19.7      | 31.6 | 50.7 | 23.6     | 37.9 | 60.8 | 31.5      | 50.5 | 81   |
| Exit pupil diameter (mm)       | 1.04     | 1.66 | 1.04 | 1.66      | 1.04 | 1.66 | 1.04     | 1.66 |      |           |      |      |
| Exit pupil distance (mm)       | 15.3     |      |      | 15.3      |      |      | 15.3     |      |      | 15.3      |      |      |
| Resolution (LP/mm)             | 67       | 44.5 | 29.7 | 60        | 35.4 | 27   | 47.2     | 31.5 | 23.6 | 35        | 27   | 19.8 |

\* optional

## HBK - Operation

### Colposcope Model 192/2



- 1| Long distance pantographic arm to move the head of the microscope up and down; it is provided with fixation screws to hold the head at the desired position. .
- 2| Star shaped base with 5 wheels and brake to easily move the microscope and fix it at the adequate place.
- 3| The head is provided with 5 magnification positions easily interchangeable by turning the corresponding knob; see chart of magnification and field of view for more information.
- 4| Supplied with C-mount for attaching a video camera and thus allowing visualization through a computer or monitor.

|                       |                                                |
|-----------------------|------------------------------------------------|
| Code                  | HBK004                                         |
| Model                 | 192/2                                          |
| Head                  | Binocular straight                             |
| Eyepieces             | WF16x (diopter correction)                     |
| Magnification changer | 5 positions (0,4x 0,66x, 1x, 1,5x y 2,5x)      |
| Total magnification   | Min 2,9x y máx. 21,7x                          |
| Working distance      | 230 mm y 280 mm                                |
| Lamp                  | Coaxial illumination, halogen lamp 15 V, 150 W |
| Diameter beam         | 60 mm                                          |
| Filters               | Blue and green                                 |
| Power                 | 110-220V, 50Hz                                 |



| Objectives    | Objectives I<br>f' = 230 |       |       |        |       | Objectives II<br>f' = 280 mm |       |       |        |       |
|---------------|--------------------------|-------|-------|--------|-------|------------------------------|-------|-------|--------|-------|
|               | 2,5 x                    | 1,5 x | 1,0 x | 0,66 x | 0,4 x | 2,5 x                        | 1,5 x | 1,0 x | 0,66 x | 0,4 x |
| Zoom          | 21,7x                    | 13,2x | 8,7x  | 5,7x   | 3,5x  | 17,8x                        | 10,8x | 7,1x  | 4,7x   | 2,9x  |
| Magnification | 11,0                     | 18,2  | 27,6  | 42,1   | 69,0  | 13,4                         | 22,0  | 33,6  | 51,1   | 84,0  |
| Field Ø       | 86,0                     | 68,0  | 52,0  | 35,0   | 27,0  | 80,0                         | 63,0  | 42,0  | 31,0   | 22,3  |
| Resolution    |                          |       |       |        |       |                              |       |       |        |       |

### Motorized Model 195



- 1| Fine focusing motorized system, by foot control switch with 2 switches for moving the head up or down.
- 2| Long distance pantographic arm to move the head of the microscope up and down; it is provided with fixation screws to hold the head at the desired position.
- 3| The head is provided with 3 magnification positions easily interchangeable.
- 4| H-shaped base with 4 wheels and brake to easily move the microscope and fix it at the adequate place.

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| Code                      | HBK005                                             |
| Model                     | 195                                                |
| Head                      | Binocular inclined 45°                             |
| Eyepieces                 | 12.5x16B (wide field)                              |
| Objective lens            | f=200 mm                                           |
| Working distance          | 190 mm                                             |
| Magnification             | 5.3x, 8x, 12x                                      |
| Field diameter            | 37 mm, 25 mm, 16.7 mm                              |
| Diopter correction        | ± 6 D                                              |
| Interpupillary distance   | 50-80 mm                                           |
| Max. resolution           | 100 LP/mm                                          |
| Coaxial illumination      | ≥30000lx con with cold light and fiber optic cable |
| Reflective lamp           | 12V, 100W                                          |
| Reaching radius of arm    | 870 mm                                             |
| Vertical adjustment range | 700-1100 mm                                        |
| Fine focusing range       | 30 mm                                              |
| Voltage                   | AC220V±22V / 50Hz±1Hz                              |



**HBL - Accessories, condensers****CHART 1:** 'accessories condensers 100 y 122'

|                                                                                    | Code   | Capacity                                                      | Model                                                                               |                                                                                     |
|------------------------------------------------------------------------------------|--------|---------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                    |        |                                                               | 100                                                                                 | 122                                                                                 |
|   | HBL001 | Abbe Condenser, 1,25 A.N.                                     |  |                                                                                     |
|   | HBL002 | Dry dark field condenser<br>Numerical aperture 0,9            |                                                                                     |  |
|   | HBL003 | Immersion dark field condenser<br>Numerical aperture 1,25     |                                                                                     |  |
|   | HBL004 | Dark field condenser dry<br>Numerical aperture 0,9            |  |                                                                                     |
|  | HBL005 | Dark Field Condenser Oil immersion<br>Numerical aperture 1,25 |  |                                                                                     |



=Accessories included with indicated item



=Accessories compatible with indicated item

**HBM - Accessories, phase contrast****CHART 2:** 'accessories phase contrast 122/107, 122/108, 122/147, 122/148 and 158'

|                                                                                     | Code   | Description                                                                                                                | Model                                                                                 |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                                                                                                            | 122/107                                                                               | 122/108                                                                               | 122/147                                                                               | 122/148                                                                               | 158                                                                                   |
|  | HBM001 | Single annular phase contrast Kit<br>Achromatic objectives 10x,<br>40x (R), 100x (R) (I). Centring eyepiece (Ø 23 mm)      |  |  |                                                                                       |                                                                                       |                                                                                       |
|  | HBM002 | Turret phase contrast equipment<br>Plan achromatic objective 4x, 10x, 40x (R) 100x (R) (I).<br>Centring eyepiece (Ø 30 mm) |                                                                                       |                                                                                       |  |  |  |



=Accessories included with indicated item



=Accessories compatible with indicated item

**HBN - Accessories, polarization****CHART 3:** 'polarization 100 and 122'

|                                                                                     | Code   | Capacity                                                                          | Model                                                                                 |                                                                                       |
|-------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                                                                   | 100                                                                                   | 122                                                                                   |
|  | HBN001 | Basic polarization set<br>Filter analyzer: Ø 23 mm<br>Filter polarizer: Ø 55 mm   |  |                                                                                       |
|  | HBN003 | EqBasic polarization set<br>Filter analyzer: Ø 18 mm<br>Filter polarizer: Ø 55 mm |                                                                                       |  |



=Accessories included with indicated item



=Accessories compatible with indicated item



## ▶ HBP - Accessories objectives

| Code   | Description                                                                        |
|--------|------------------------------------------------------------------------------------|
| HBP001 | Achromatic objectives 4x Numerical aperture (A.N.) 0.10                            |
| HBP002 | Achromatic objectives 10X Numerical aperture (A.N.) 0.25                           |
| HBP003 | Achromatic objectives 20X Numerical aperture (A.N.) 0.40                           |
| HBP004 | Achromatic objectives 40x (R) Numerical aperture (A.N.) 0.65                       |
| HBP005 | Achromatic objectives 60x (R) Numerical aperture (A.N.) 0.85                       |
| HBP006 | Achromatic objectives 100x (R) (I) Numerical aperture (A.N.) 1.25                  |
| HBP007 | Plan achromatic objectives 4x Numerical aperture (A.N.) 0.10                       |
| HBP008 | Plan achromatic objectives 10x Numerical aperture (A.N.) 0.25                      |
| HBP009 | Plan achromatic objectives 20x Numerical aperture (A.N.) 0.40                      |
| HBP010 | Plan achromatic objectives 40x (R) Numerical aperture (A.N.) 0.65                  |
| HBP011 | Plan achromatic objectives 100x (R) (I) Numerical aperture (A.N.) 1.25             |
| HBP012 | Semi-plan achromatic objectives 4x                                                 |
| HBP013 | Semi-plan achromatic objectives 10X                                                |
| HBP014 | Semi-plan achromatic objectives .40x/R                                             |
| HBP015 | Semi-plan achromatic objectives. 100X R/I                                          |
| HBP016 | Fluorescence plan apo-chromatic objective, 20x (R). Numerical aperture (A.N.) 0.25 |
| HBP017 | Achromatic objectives 4x for series 170                                            |
| HBP018 | Achromatic objectives 10x for series 170                                           |
| HBP019 | Achromatic objectives 20x for series 170                                           |
| HBP020 | Achromatic objectives 40x for series 170                                           |
| HBP021 | Achromatic objectives 100x for series 170                                          |
| HBP022 | Achromatic Objective 4x. Short Numerical aperture (A.N.) 0.10                      |
| HBP023 | Achromatic Objective 10x. Short Numerical aperture (A.N.) 0.25                     |
| HBP024 | Achromatic Objective 40x (R) Short Numerical aperture (A.N.) 0.65                  |
| HBP025 | Achromatic Objective 100x (R) (I) Short Numerical aperture (A.N.) 1.25             |
| HBP026 | Objectives F250, for series 191                                                    |
| HBP027 | Objectives F400, for series 191                                                    |

## ▶ HBQ - Accessories, eyepieces

| Code   | Description                                                         |
|--------|---------------------------------------------------------------------|
| HBQ001 | Wide field eyepiece WF 10x/18 mm. Diameter 23 mm                    |
| HBQ002 | Wide field eyepiece WF16x /11 mm. Diameter 23 mm                    |
| HBQ003 | Wide field eyepiece WF10x point for Microscope 100. Diameter 23 mm  |
| HBQ004 | Wide Field eyepiece WF 10x/18 mm with 0,1 micrometer Diameter 23 mm |
| HBQ005 | Photographic eyepiece 4x. Diameter 23 mm                            |
| HBQ006 | Extra wide field eyepiece WF10x/21 mm. Diameter 23 mm               |
| HBQ007 | High point eyepiece WF10x/18,5 mm. Diameter 23 mm                   |
| HBQ008 | Eyepiece WF10x /22 mm. Diameter 30mm                                |
| HBQ009 | Eyepiece WF16x. Diameter 30 mm                                      |
| HBQ010 | Micrometric eyepiece WF10x/22 mm. Diameter 30 mm                    |

## ▶ HBR - Accessories, others

### ▶ Stages

| Code   | Description                                                                                               |
|--------|-----------------------------------------------------------------------------------------------------------|
| HBR010 | Heating stage for series 100 / 122. Range of temperature adjustable: T <sup>a</sup> environmental - 50 °C |
| HBR014 | Mechanical stage for series 128 / 116 / 119                                                               |

### ▶ Video photography

| Code   | Description                                            |
|--------|--------------------------------------------------------|
| HBR006 | Photographic attachment T mount                        |
| HBR007 | Video Attachment without lens (C-lens)                 |
| HBR018 | Photography Attachment with viewfinder for 170         |
| HBR019 | Video attachment C mount for model 170 (Metallurgical) |

**HBR - Accessories, others****► Condenser, diaphragm, illumination**

| Code   | Description                                                             |
|--------|-------------------------------------------------------------------------|
| HBR004 | Diaphragm iris for series 100                                           |
| HBR005 | Halogen lamp 6V, 20W                                                    |
| HBR008 | Filter for green condenser (Ø 32 mm) for models 116/128/119/100/122/158 |
| HBR009 | Filter for blue condenser (Ø 32 mm) for models 116/128/119/100/122/158  |
| HBR012 | Halogen lamp 6V, 15W                                                    |
| HBR015 | Epi-fluorescence lamp                                                   |
| HBR016 | Halogen lamp 24V, 100W                                                  |
| HBR017 | Halogen lamp 12V, 50W                                                   |
| HBR021 | Dicroic halogen lamp 15V 150W                                           |

**► For operation microscopes**

| Code   | Description                                     |
|--------|-------------------------------------------------|
| HBR022 | Wall stand for model 191                        |
| HBR023 | Table stand for model 191                       |
| HBR024 | Coobservation monocular tube for models 191/120 |

**► Others**

| Code   | Description                                      |
|--------|--------------------------------------------------|
| HBR002 | Lens tissues 110x85 mm, b/50                     |
| HBR003 | Microscope cleaning kit                          |
| HBR011 | Plastic dust cover for professional microscopes  |
| HBR013 | AC/DC adapter 230V/5.5V 200mA for microscope 116 |
| HBR020 | Dust cover inverted microscope                   |

**HDB - Education****► Serie 200**

Code. HDB004

- 1 | Use in teaching for the mineral or little animal observation.
- 2 | Binocular head with adjustable interpupillary distance and dioptic correction.
- 3 | Bilateral controls for focusing through rack and pinion mechanism.
- 4 | Black and white contrast stage and ground glass stage.

| Code                    | HDB002                               | HDB004                |
|-------------------------|--------------------------------------|-----------------------|
| Model                   | 218/2                                | 220                   |
| Head                    | Binocular<br>45° 360°                | Binocular<br>45° 360° |
| Eyepieces               | WF10x/20mm                           | WF10x/18mm            |
| interpupillary distance | 55-75mm                              |                       |
| Diopter correction      | ± 5 mm diopters                      |                       |
| Nosepiece               | Quadruple                            | Quadruple             |
| Objectives              | 2x/4x                                | 2x/4x                 |
| Working distance        | 60 mm                                | 76 mm                 |
| Stage                   | B/N ground glass with clamps (95) mm |                       |
| Illumination            | Incident and transmitted*            |                       |
| Power                   | 220V, 50/60Hz                        |                       |

\* adjustable code HDB004

## HDD - Zoom

### Series 234



- 1| To be used in industrial or research laboratories.
- 2| Head inclined 45° and rotary 360°.
- 3| Rod-type support to adjust height of head (max. 200 mm).
- 4| Incident and transmitted light with independent or joined regulation (3 positions)

|                         |                                                  |
|-------------------------|--------------------------------------------------|
| Code                    | HDD006                                           |
| Model                   | 235                                              |
| Head                    | Trinocular                                       |
|                         | 45° 360°                                         |
| Interpupillary distance | 55-75 mm                                         |
| Dipoter correction      | ± 5 diopters                                     |
| Eyepieces               | WF 10x-20 mm                                     |
| Objectives              | 1x                                               |
| Zoom                    | 1x a 4x (coaxial knobs)                          |
| Zoom ratio              | 4                                                |
| Working distance        | 85 mm                                            |
| Stage                   | Black and white ground glass (95 mm) with clamps |
| Filter                  | Blue (40 mm)                                     |
| Illumination            | Incident (12V/10W) and transmitted (12V/10W)     |
| Power                   | 100-240V, 50/60Hz                                |



Chart of magnification Mod. 235

| Zoom  | Objectives | Eyepiece WF10X |              | Eyepiece WF15X |              | Eyepiece WF20x |              |
|-------|------------|----------------|--------------|----------------|--------------|----------------|--------------|
|       |            | Magnification  | field Ø (mm) | Magnification  | field Ø (mm) | Magnification  | field Ø (mm) |
| 1x-4x | 1.0x       | 10x - 40x      | 23 - 5.5     | 15x - 60x      | 15.5 - 4     | 20x - 80x      | 10.5 - 3     |
|       | 0.5x       | 5x - 20x       | 52 - 12      | 7.5x - 30x     | 36 - 8.5     | 10x - 40x      | 25 - 5.8     |
|       | 1.5x       | 15x - 60x      | 15 - 4.8     | 22.5x - 90x    | 10.5 - 2.5   | 30x - 120x     | 7 - 1.8      |
|       | 2.0x       | 20x - 80x      | 11 - 5.3     | 30x - 120x     | 8 - 2        | 40x - 160x     | 5.5 - 1.5    |

### Zoom stereomicroscopes, series Z



- 1| Handle for easy transport
- 2| 45° inclined and 360° rotary head with interpupillary distance adjustment and dioptre correction
- 3| Possibility of placing the head at two different heights thus allowing observation of samples of a wide range of sizes.
- 4| Zoom range from 0.7x to 4.5x
- 5| Working distance 100 mm
- 6| Incident and transmitted LED lights with independent intensity regulation

|                         |                                     |            |
|-------------------------|-------------------------------------|------------|
| Code                    | HDD011                              | HDD012     |
| Model                   | B-HD11                              | T-HD12     |
| Head                    | Binocular                           | Trinocular |
|                         | 45 ° inclined and 360° rotatable    |            |
| Interpupillary distance | 55-75 mm                            |            |
| Zoom ration             | 1:6.4                               |            |
| Eyepieces               | WF10x/20 mm                         |            |
| Objective               | 1x                                  |            |
| Zoom                    | 0.7x-4.5x                           |            |
| Working distance        | 100 mm                              |            |
| Illumination            | Incident and transmitted LED lights |            |
| Power supply            | 110-240 V; 50/60 Hz                 |            |





## HDD - Zoom

## Serie 240



- 1 | Large stage and very robust design. Large dimensions stage Ø 120 mm.
- 2 | Working distance of 95 mm. Adjustable zoom from 0.65x to 6x.

|                         |                                                     |                     |
|-------------------------|-----------------------------------------------------|---------------------|
| Code                    | HDD007                                              | HDD008              |
| Model                   | 240/2                                               | 240/3               |
| Head                    | Binocular 45° 360°                                  | Trinocular 45° 360° |
| Interpupillary distance | 55-75 mm                                            |                     |
| Diopter correction      | ± 5 diopters                                        |                     |
| Eyepieces               | WF 10x-23 mm (Ø23mm)                                |                     |
| Objectives              | 1x                                                  |                     |
| Zoom                    | 0.65x a 6x (bilateral controls)                     |                     |
| Working distance        | 95 mm                                               |                     |
| Stage                   | White and black ground glass (Ø 120 mm) with clamps |                     |
| Illumination            | Incident (6V/15W) and transmitted (6V/12W)          |                     |
| Power                   | 220V, 50Hz                                          |                     |

Chart of magnification Mod. 240

| Zoom     | Objectives | Eyepiece WF10X |              | Eyepiece WF15X |              | Eyepiece WF20x |              |
|----------|------------|----------------|--------------|----------------|--------------|----------------|--------------|
|          |            | Magnification  | field Ø (mm) | Magnification  | field Ø (mm) | Magnification  | field Ø (mm) |
| 0.65x-6x | 1.0x       | 6.5x - 60x     | 35.4 - 3.8   | 9.75x - 90x    | 23.1 - 2.5   | 13x - 120x     | 18.5x - 2.0  |
|          | 0x         | 13x - 120x     | 7.69 - 1.91  | 19.5x - 180x   | 11.5 - 1.3   | 26x - 240x     | 9.2 - 1      |

page  
[124]

## Video-microscopes



REF. HDD009



REF. HDD10

- 1 | Equipped with a 1/3" CCD camera and a 0.5x coupler.
- 2 | Lateral control panel with buttons to adjust brightness, turn on the laser pointer or make the white balance.
- 3 | Built-in LED ring whose intensity can be adjusted.
- 4 | With a laser pointer (5V 650 nm).
- 5 | Body presents a standard diameter of 7 mm, it can be configured with the objectives and stands or base that are more appropriate for user necessities (see accessories)
- 6 | For observation of samples in 3D (optional).

|                                            |                                                       |                       |
|--------------------------------------------|-------------------------------------------------------|-----------------------|
| Code                                       | HDD009                                                | HDD010                |
| Model                                      | 290/8                                                 | 290/10                |
| Head                                       | Binocular                                             | Trinocular            |
| LCD monitor                                |                                                       |                       |
| Screen size                                | 8"                                                    | 10,4"                 |
| Resolution                                 | 800 x 600 1024 x 768                                  |                       |
| Contrast                                   | 300:1                                                 | 350:1                 |
| Viewing angle                              | 150°                                                  | 150°                  |
| Response time                              | ≤ 25ms                                                | ≤ 25ms                |
| Brightness                                 | 250 cd/m <sup>2</sup>                                 | 300 cd/m <sup>2</sup> |
| Video output Conector BNC/Conector S-VIDEO |                                                       |                       |
| Optical specifications                     |                                                       |                       |
| Total magnifications                       | 3,3x-147x                                             | 3,2x-198x             |
| Zoom range                                 | 0,7x - 4,5x                                           | 0,7x - 4,5x           |
| Zoom ratio                                 | 1:6,5                                                 | 1:6,5                 |
| Objectives                                 | 1x standar<br>0,3x, 0,5x, 0,75x, 1,5x y 2x (optional) |                       |
| Power                                      | 100-240V, 50/60 Hz                                    |                       |

Chart of magnifications model 290/8 (8" LCD monitor)

| Objectives      | Magnification  | Field Ø     | Working dist. |
|-----------------|----------------|-------------|---------------|
| 0.3x            | 3.6x - 22.9x   | 57.1-8.9 mm | 331 mm        |
| 0.5x            | 5.9x - 38.1x   | 34.3-5.3 mm | 198 mm        |
| 0.75x           | 8.9x - 57.1x   | 22.8-3.6 mm | 131 mm        |
| 1.0x (standard) | 11.9x - 76.2x  | 17.1-2.7 mm | 96 mm         |
| 1.5x            | 17.8x - 114.3x | 11.4-1.8 mm | 63 mm         |
| 2.0x            | 23.7x - 152.4x | 8.6-1.3 mm  | 46 mm         |

Chart of magnifications model 290/10 (10.4" LCD monitor)

| Objectives      | Magnification  | Field Ø     | Working dist. |
|-----------------|----------------|-------------|---------------|
| 0.3x            | 3.6x - 22.9x   | 57.1-8.9 mm | 331 mm        |
| 0.5x            | 5.9x - 38.1x   | 34.3-5.3 mm | 198 mm        |
| 0.75x           | 8.9x - 57.1x   | 22.8-3.6 mm | 131 mm        |
| 1.0x (standard) | 11.9x - 76.2x  | 17.1-2.7 mm | 96 mm         |
| 1.5x            | 17.8x - 114.3x | 11.4-1.8 mm | 63 mm         |
| 2.0x            | 23.7x - 152.4x | 8.6-1.3 mm  | 46 mm         |

## HDG - Accessories, objectives

| Code   | Description                                 |
|--------|---------------------------------------------|
| HDG001 | Objectives 1x for series 200                |
| HDG002 | Objectives 2x for series 200                |
| HDG003 | Objectives 3x for series 200                |
| HDG004 | Objectives 4x for series 200                |
| HDG005 | Objectives 0.5x for series 230              |
| HDG006 | Objectives 2x for series 230/240            |
| HDG007 | Objectives 0.5x for series 234 (pole stand) |
| HDG008 | Objectives 1.5x for series 234 (pole stand) |
| HDG009 | Objectives 2x for series 234 (pole stand)   |
| HDG010 | Objectives 0.3x for LCD microscopes         |
| HDG011 | Objectives 0.5x for LCD microscopes         |
| HDG012 | Objectives 0.75x for LCD microscopes        |
| HDG013 | Objectives 1.5x for LCD microscopes         |
| HDG014 | Objectives 2x for LCD microscopes           |
| HDG015 | 35° 3D attachment with objective 0.75x      |

## HDH - Accessories, eyepieces

| Code   | Description                                  |
|--------|----------------------------------------------|
| HDH001 | Eyepiece 5x for series 200/234               |
| HDH002 | Eyepiece 10x for series 200/234              |
| HDH003 | Eyepiece 15x for series 200/234              |
| HDH004 | Eyepiece 20x for series 200/234              |
| HDH005 | Eyepiece micrometer 10x for series 200/234   |
| HDH006 | Eyepiece 10X for series 230/240              |
| HDH007 | Eyepiece 15x for series 230/240              |
| HDH008 | Eyepiece 20x for series 230/240              |
| HDH009 | Micrometric eyepiece 10x for serie 230 240   |
| HDH010 | Photographic eyepiece 2,5x for serie 230/240 |
| HDH011 | Photographic eyepiece 5x for serie 230/240   |

## HDJ - Accessories, support



REF. HDJ002



REF. HDJ006



REF. HDJ005

| Code   | Description                            |
|--------|----------------------------------------|
| HDJ001 | Articulated Base for stereo series 234 |
| HDJ002 | Post stand 76 mm, for LCD microscope   |
| HDJ003 | Track stand 76 mm for LCD microscope   |
| HDJ004 | Halogen light base for LCD microscope  |
| HDJ005 | Big Base Boom stand for microscope LCD |
| HDJ006 | Pneumatic stand 76 mm f/LCD microscope |



## HDK - Accessories, others

## ▶ Cold light source



- 1 | For microscopic examinations, illumination of certain regions or observation of heat-sensitive samples.
- 2 | Equipped with a high power lamp, without colour change and without heat release.
- 3 | Double flexible arm and a mechanism for continuous adjustment of illumination intensity.
- 4 | Included two Köhler condenser and slot for inserting colour filter.

|                |                    |
|----------------|--------------------|
| Code           | HDK001             |
| Spectral range | 450-700 nm         |
| Halogen lamp   | 21 V / 150 W       |
| Dimensions     | 208x105x124 mm     |
| Height         | 1 kg               |
| Power          | CA 220 V, 50-60 Hz |

## ▶ Illumination

| Code   | Description                             |
|--------|-----------------------------------------|
| HDK002 | 24 V 150 W lamp cold light source       |
| HDK003 | Halogen lamp 12V 10W for series 200/234 |
| HDK012 | Halogen lamp 6V 12W for series 230/240  |
| HDK013 | Dicroic halogen lamp 6V 15W             |
| HDK017 | Dicroic halogen lamp 12V 10W            |

## ▶ Others

| Code   | Description                                            |
|--------|--------------------------------------------------------|
| HDK004 | Pair of clips for holding slides for series 200        |
| HDK005 | White/Black contrast stage plate series 200/234, 95 mm |
| HDK006 | Pair of blinkers for stereomicroscope                  |
| HDK007 | Ground glass stage plate for series 200/234, 95 mm     |
| HDK008 | Plastic dust cover                                     |
| HDK009 | Ground glass stage plate for serie 220, 60 mm          |
| HDK014 | Black/white contrast stage for 230                     |
| HDK015 | Ground stage series 230                                |
| HDK019 | Ground stage series 240 (diam. 120 mm)                 |



## HGD - C mount

## ▶ Eyepiece video cameras



| Code                           | HGB002                                        | HGB003    | HGB004     | HGB005     |
|--------------------------------|-----------------------------------------------|-----------|------------|------------|
| Sensor                         | 1/2"CMOS                                      | 1/2"CMOS  | 1/2.2"CMOS | 1/2.5"CMOS |
| Max. resolution                | 1280x1024                                     | 2048x1536 | 2592x1944  | 3264x2448  |
| Speed máx. resolution          | 20 FPS                                        | <11 FPS   | <7 FPS     | <1 FPS     |
| Sensibility (v/lux-s a 550 nm) | 1.8                                           | 1.5       | 1.2        | 1.3        |
| Dynamic range                  | 65 dB                                         | 75 dB     | 67 dB      | 75 dB      |
| Wavelength                     | 400-600 nm (with IR-cut filter)               |           |            |            |
| Eyepiece Ø                     | 23 mm (adapters of 30 and 30.5 mm)            |           |            |            |
| Dimensions                     | Cylindrical-shaped metal body, 50 mm diameter |           |            |            |
| White balance                  | Automatic / Manual                            |           |            |            |
| Interface                      | USB 2.0, 480 Mb/s; legth of wire 2.5 m        |           |            |            |



## HJB - Visible

### ► Serie 4100



- 1| Manual wavelength selector and digital display .
- 2| Blank (0% Abs) and auto zero (0% T) easy to perform.
- 3| Measurements of absorbance and transmittance in the visible spectral range.
- 4| Model 4111RS allows quantitative analysis by taking a sample of known concentration as reference or by entering the F factor value ( $Abs = F \cdot Conc$ ). Is provided with RS232 output to connect to a computer and application software based on Windows that allows calculation of concentration curves using up to 12 reference samples, and kinetics curves
- 5| Includes 2 glass cells, 10 mm path length and black cell for autocero.

|                       |                                                    |        |
|-----------------------|----------------------------------------------------|--------|
| Code                  | HJB001                                             | HJB002 |
| Model                 | 4101                                               | 4111RS |
| Wavelength adjustment | Manual                                             |        |
| Wavelength range      | 330 – 1000nm                                       |        |
| Optical system        | Single beam, grating 1200 lines / mm               |        |
| Bandwidth             | 8nm                                                |        |
| Wavelength accuracy   | ±2nm                                               |        |
| Wavelength resolution | ±1nm                                               |        |
| Photometric accuracy  | 0-100%T<br>0-1,999A<br>0-1999C; 0-1999F            |        |
| Detector              | Silicon photodiode                                 |        |
| Cell holder           | 2 cells of 10 mm path length                       |        |
| Output                | ---                                                | RS232  |
| Power                 | 110V 60Hz / 220V 50Hz trough an external exchanger |        |

REF. HJB001



REF. HJB002

page  
[127]

### ► Serie 4201/20



- 1| Manually setting wavelength.
- 2| Auto-zero and blank, easy to use. Press one button for easy switching of Transmittance, Absorbance and Concentration modes.
- 3| Windows based Software included that can expand the applications to standard curve calculations through the USB port.

|                       |                                          |
|-----------------------|------------------------------------------|
| Code                  | HJB003                                   |
| Model                 | 4201/20                                  |
| Wavelength adjustment | Manual                                   |
| Wavelength range      | 325-1000nm                               |
| Optical system        | Single beam, grating 1200 lines/mm       |
| Bandwidth             | 4nm                                      |
| Wavelength accuracy   | ±2nm                                     |
| Wavelength resolution | ±1nm                                     |
| Photometric accuracy  | -0,097 - 1,999A,   0 - 125%T             |
| Detector              | Silicon photodiode                       |
| Cell holder           | 4-position 10 mm cell changer            |
| Output                | USB and parallel port (printer)          |
| Lamps                 | Tungsten                                 |
| Power                 | 110V 60Hz/220V 50Hz (external exchanger) |





## HJB - Visible

## Serie 4211/20



- 1| Memory to save up to 200 absorbance and transmittance data. The memory can also store up to 200 different standard curves .
- 2| Software MWave Basic included. Compatible with software MWave Professional (not included)
- 3| Reading: absorbance, transmittance and concentration (standard curve and coefficient methods)

|                       |                                                |
|-----------------------|------------------------------------------------|
| Code                  | HJB004                                         |
| Wavelength range      | 325-1000nm                                     |
| Optical system        | Single beam, grating 1200 lines/mm             |
| Bandwidth             | 4nm                                            |
| Wavelength accuracy   | $\pm 1$ nm                                     |
| Wavelength resolution | $\pm 1$ nm                                     |
| Photometric accuracy  | -0,097 - 2,5 A   0 - 125% T                    |
| Lamps                 | Tungsten                                       |
| Detector              | Silicon photodiode                             |
| Standard cell holder  | 4 cells standar de 10 mm                       |
| Output                | USB and parallel port (printer)                |
| Power                 | 110 V 60 Hz / 220 V 50 HZ (external exchanger) |

## Portable



- 1| Windows CE embedded operating system and touch screen TFT interface
- 2| Data can be transferred from internal instrument storage to a PC via USB connection and the 4430 Data Viewer Software.
- 3| The 4431 differentiates itself from the standard 4430 by means of pre-programmed test methods for the Spectroquant® series of reagent test kits from Merck Chemicals.
- 4| Operating system and workspace: quantitative, spectrum, photometric and kinetic.

|                          |                                                |                     |
|--------------------------|------------------------------------------------|---------------------|
| Code                     | HJB005                                         | HJB006              |
| Model                    | 4430                                           | Pre-programmed 4431 |
| Wavelength range         | 380 – 800nm                                    |                     |
| Optical system           | Polychromatic with concave holographic grating |                     |
| Bandwidth                | $4 \pm 0,8$ nm                                 |                     |
| Wavelength accuracy      | $\pm 1$ nm                                     |                     |
| Wavelength resolution    | 0,4nm                                          |                     |
| Wavelength repeatability | $\leq 0,1$ nm                                  |                     |
| Stray light              | $\leq 0.5\%$                                   |                     |



## HJD - UV/Visible

## Model 4201/50



- 1| Auto-zero and black easy to use.
- 2| Reading: absorbance, transmittance and concentration (standard curve method).
- 3| Can display and save 50 groups of data, 3 groups per screen.
- 4| MWave Basic Software included.

|                       |                                                |
|-----------------------|------------------------------------------------|
| Code                  | HJD001                                         |
| Wavelength adjustment | Digital                                        |
| Wavelength range      | 200-1000nm                                     |
| Bandwidth             | 4nm                                            |
| Optical system        | Simple beam, grating 1200 lines/mm             |
| Wavelength accuracy   | $\pm 2$ nm                                     |
| Wavelength resolution | $\pm 1$ nm                                     |
| Photometric accuracy  | -0,097 - 1,999A, 0 - 125%T                     |
| Detector              | Silicon photodiode                             |
| Cell holder           | 4-position 10 mm cell changer                  |
| Output                | USB and parallel port (printer)                |
| Power                 | 110 V 60 Hz / 220 V 50 HZ (external exchanger) |
| Lamps                 | Tungsten and deuterium                         |



## HJD - UV/Visible

## ► Model 4211/50



- 1| Memory to save up to 200 absorbance and transmittance data. The memory can also store up to 200 different standard curve.
- 2| They allow qualitative (absorbance and transmittance measurements) and quantitative (concentration measurements) analysis in the visible and UV-visible range respectively.
- 3| MWave Basic Software included, compatible with software MWave Professional (not included).

|                            |                                                |
|----------------------------|------------------------------------------------|
| Code                       | HJD002                                         |
| Model                      | 4211/50                                        |
| Wavelength range           | 200-1000nm                                     |
| Optical system             | Simple beam, grating 1200 lines/mm             |
| Bandwidth                  | 4nm                                            |
| Wavelength accuracy        | ± 1nm                                          |
| Wavelength resolution      | ± 1nm                                          |
| Wavelength reproducibility | 0,5nm                                          |
| Photometric accuracy       | -0,097 - 2,5 A, 0 - 125% T                     |
| Lamps                      | Tungsten and deuterium                         |
| Detector                   | Silicon photodiode                             |
| Standard cell holder       | 4 cells standar de 10 mm                       |
| Output                     | USB and parallel port (printer)                |
| Power                      | 110 V 60 Hz / 220 V 50 Hz (external exchanger) |

page  
[129]

## ► Model 4251/50



- 1| Memory to save up to 200 groups of data. The memory can also store and reload up to 200 different standard curves.
- 2| Reading: absorbance, transmittance, concentration (standard curve and coefficient methods) and kinetics.
- 3| MWave Basic Software included, compatible with software MWave Professional (not included).

|                            |                                                |
|----------------------------|------------------------------------------------|
| Code                       | HJD003                                         |
| Model                      | 4251/50                                        |
| Wavelength range           | 190-1100nm                                     |
| Optical system             | Simple beam, grating 1200 lines/mm             |
| Bandwidth                  | 2nm                                            |
| Wavelength accuracy        | ± 0,5nm                                        |
| Wavelength resolution      | ± 0,1nm                                        |
| Wavelength reproducibility | 0,3nm                                          |
| Photometric accuracy       | -0,3 - 3 A, 0 - 200% T                         |
| Lamps                      | Tungsten and deuterium                         |
| Detector                   | Silicon photodiode                             |
| Standard cell holder       | 4 cells standar de 10 mm Path lengt            |
| Output                     | USB and parallel port (printer)                |
| Power                      | 110 V 60 Hz / 220 V 50 Hz (external exchanger) |





## HJD - UV/Visible



► Model 4255/50



- 1 | Memory to save data and curves.
- 2 | Advanced and complete functions to cover all range of applications: basic mode (Absorbance and transmittance), qualitative, wavelength scan, kinetics, DNA/proteins and multi-wavelength analysis.
- 3 | Compatible with software UV/Vis Analyst (not included)

|                          |                                                |
|--------------------------|------------------------------------------------|
| Code                     | HJD004                                         |
| Wavelength range         | 190-1100 nm                                    |
| Optical system           | Simple beam, grating 1200 lines/mm             |
| Bandwidth                | 2nm                                            |
| Wavelength accuracy      | ±0,5nm                                         |
| Wavelength resolution    | ±0,1nm                                         |
| Wavelength repeatability | 0,3 nm                                         |
| Scan speed               | High, medium, low (max. 3000nm/min)            |
| Photometric accuracy     | -0,3 - 3 A, 0 - 200% T, 0 - 9999 C             |
| Lamps                    | Tungsten and deuterium                         |
| Detector                 | Silicon photodiode                             |
| Standard cell holder     | 4 position 10 mm cell charger                  |
| Output                   | USB and parallel port (printer)                |
| Power                    | 110 V 60 Hz / 220 V 50 Hz (external exchanger) |

page  
[130]

► Model 4481/1



- 1 | Large color touch screen 7 " LCD (153x85 mm).
- 2 | The spectrophotometer provides a large memory capacity; 10 concentration curves, 10 spectrum scanning curves and 10 kinetic curves.
- 3 | Motorised automatic 8-cells holder for 10 mm path-length cells.
- 4 | Testing and processing data provided by the equipment: photometric measurement, quantitative analysis, chemical kinetic analysis, multi-wavelength determination, spectrum scanning, zoom in/out of spectrum graph, saving and recalling of curve, calibration and search and printing of peak value
- 5 | Compatible with software UVWin 8 (not included).

|                          |                    |
|--------------------------|--------------------|
| Code                     | HJD006             |
| Beam                     | Simple             |
| Wavelength range         | 190 – 1000 nm      |
| Bandwidth                | 2nm                |
| Wavelength accuracy      | ±0,5nm             |
| Wavelength repeatability | 0,2 nm             |
| Photometric accuracy     | -0,3 – 4Abs        |
| Scan speed               | High, medium, low  |
| Detector                 | Silicon photodiode |
| Power                    | 220V 50 Hz         |

► UV-VIS 4419



- 1 | Czerny-Turner monochromator with holographic grating that reduces stray light to a minimum and offers excellent optical resolution. .
- 2 | Double beam optical system coupled with a high specification holographic grating gives excellent wavelength separation allowing the user to measure close adjacent wavelengths with excellent sensitivity.
- 3 | Continuous selection of bandwidth .
- 4 | Operational and data processing capabilities: photometric measurements, multiple wavelength analysis, quantitative analysis, kinetics, scanning and DNA/protein analysis.
- 5 | Included software UVWin (continuous mode not available).

|                            |                                                |
|----------------------------|------------------------------------------------|
| Code                       | HJD005                                         |
| Optical system             | Double beam                                    |
| Wavelength                 | 190 – 900nm                                    |
| Bandwidth                  | Continuous slit 0.1-5nm (with 0.1 nm interval) |
| Wavelength accuracy        | ±0,3nm                                         |
| Wavelength reproducibility | 0,1nm                                          |
| Photometric accuracy       | -0,4 – 4Abs                                    |
| Detector                   | Photomultiplier tube                           |
| Power                      | 120-230 V CA, 50-60 Hz                         |

## HJD - UV/Visible



### Double beam model 460/50

- 1| Double beam optical system with two detectors that measure sample and reference respectively and simultaneously for optimizing precision of measurement.
- 2| This equipment presents different operation modes for performing quantitative analysis, kinetics, scanning, multiple wavelength analysis and DNA/protein analysis thus being a suitable equipment for applications in Pharmaceuticals, Biochemistry, Quality control, research and clinical laboratories.
- 3| Measurement range 190-1100 nm with a variable bandwidth (0.5/1/2/4/5 nm)
- 4| The spectrophotometer is supplied with UV/Vis Analyst application software based in Windows for total control of equipment through computer



|                          |                                                                                                                        |
|--------------------------|------------------------------------------------------------------------------------------------------------------------|
| Code                     | HJD007                                                                                                                 |
| Wavelength range         | 190-1100 nm                                                                                                            |
| Wavelength accuracy      | ± 0.3 nm                                                                                                               |
| Wavelength repeatability | 0.2 nm                                                                                                                 |
| Spectral bandwidth       | Variable: 0.5/1/2/4/5 nm                                                                                               |
| Photometric accuracy     | 0-200% T, -0.3 – 3 A                                                                                                   |
| Photometric accuracy     | ± 0.3% T o ± 0.003 A @ 1 A                                                                                             |
| Optical system           | Double beam, grating 1200 lines/mm                                                                                     |
| Scan speed               | High, medium, low (max. 3000 nm/min)                                                                                   |
| Stray light              | 0.04% T @ 220 nm, 360 nm                                                                                               |
| Stability                | 0.0003 A/h @ 500 nm                                                                                                    |
| Baseline flatness        | ± 0.0005 A                                                                                                             |
| Display                  | 5 inches LCD (320x240 dots)                                                                                            |
| Standard cell holder     | 10 mm single cell holder (sample and reference)                                                                        |
| Cells                    | 4 glass cells and 2 quartz cells included                                                                              |
| Light source             | Tungsten and Deuterium lamps (pre-aligned)                                                                             |
| Outputs                  | USB type A for USB memory device (right side)<br>USB type B for PC connection (back side)<br>Parallel port for printer |
| Power                    | AC 110/220 V, 50/60 Hz                                                                                                 |
| Dimensions (LxWxA)       | 589x428x200 mm                                                                                                         |
| Weight                   | 22 Kg                                                                                                                  |

page  
[131]

## HJG - Checking standards

- 1| These standards are used to verify absorbance measurements in visible range and wavelength in visible UV ranges.
- 2| Each filter is mounted in a case, wich is compatible with the 1 cm cell holder generally supplied with the spectrophotometers.
- 3| With absorbance and wavelength data certificate.

### Didimium glass filter



- 1| Solid filter to test the accuracy un the wavelength in the visible range and UV (from 329 nm to 875 nm) and check the photometry accuracy.

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| Code               | HJG001                                                       |
| Description        | Didimio (F5)                                                 |
| Peak position (nm) | 327, 473, 513, 684, 875                                      |
| Nominal absorbance | 5.0 (280 nm)<br>3.0 (300 nm)<br>0.5 (320 nm)<br>0.2 (340 nm) |





## HJG - Checking standards

## Neutral density glass filters



- 1| Grey glass filter to verification of photo metry accuracy (absorbance) in the visible range (440 nm a 635 nm).
- 2| Show a quite constant transmission along the visible spectro being calibrated in different wavelength.
- 3| The thickness of the glass filter has been adjusted to give nominal absorbance values from 0.25 A, 0.5 A y 1 A.

| Code   | Des. | Nominal absorbance | Absorbance measured at (nm) |
|--------|------|--------------------|-----------------------------|
| HJG003 | F2   | 0.25 A             | 440, 465, 546, 590, 635     |
| HJG004 | F3   | 0.5 A              | 440, 465, 546, 590, 635     |
| HJG005 | F4   | 1.0 A              | 440, 465, 546, 590, 635     |

## Filter set



- 1| It includes a holmium oxide glass filter (HO<sub>2</sub>O<sub>3</sub>) for wavelength accuracy verification and 3 glass filter with neutral density for photometric accuracy verification.
- 2| All together, with an empty filter mount in a wood case.
- 3| The absorbance and wavelength values for the peaks are registred in the calibration certificate that goes with each filter set. A copy of these values, for ordinary use, is in the internal part of the case lid.

|             |        |                    |                             |
|-------------|--------|--------------------|-----------------------------|
| Code        | HJG007 |                    |                             |
| Composed of | Filter | Description        | Absorbance measured at (nm) |
|             | F1     | Holmium oxide      | 279, 364, 454, 536, 638     |
|             | F2     | Grey glass density | 440, 465, 546, 590, 635     |
|             | F3     | Grey glass density | 440, 465, 546, 590, 635     |
|             | F4     | Grey glass density | 440, 465, 546, 590, 635     |

## Filters accessories

| Code   | Description              |
|--------|--------------------------|
| HJG002 | Empty filter mount       |
| HJG006 | Empty case for 5 filters |



## HJH - Accessories

**CHART 4:** 'accessories spectrophotometers 4100, 4419, 4201/20, 4200, 4481/1, 4211/20, 4211/50, 4251/50, 4255/50, 4481/1'

| Code   | Description                                       |
|--------|---------------------------------------------------|
| HJH001 | Cell holder, series 4100                          |
| HJH002 | Dust cover spectrophotometer 4100                 |
| HJH003 | Halogen lamp 6 V 10 W, Series 4100 and 4201/20    |
| HJH004 | Blanck cell, 10 mm                                |
| HJH005 | Dust cover spectrophotometer 4200                 |
| HJH006 | Halogen lamp 12 V 20 W, series 4200               |
| HJH007 | Deuterium lamp, series 4200                       |
| HJH010 | Hamamatsu deuterium lamp L6302-40                 |
| HJH017 | Sipper pump system, model 4419                    |
| HJH018 | Thermostatizable cell holder 2 cells, 4419        |
| HJH019 | Cell holder f/cells 5-50 mm, model 4419           |
| HJH021 | Deuterium lamp for spectrophotometer model 4481/1 |
| HJH022 | Adapter for cells 1 to 5 mm                       |
| HJH024 | Tugsten lamp for spectrophotometer model 4481     |



## HJH - Accessories

| Code   | Description                                                       |
|--------|-------------------------------------------------------------------|
| HJH008 | Software MWave Professional, for models 4211/20, 4211/50, 4251/50 |
| HJH009 | Software UV/Vis Analyst, for model 4255/50                        |
| HJH020 | Software spectrophotometer for model 4481/1                       |

## HJK - Cells, glass

Cells are supplied in paired up units and their main features are the following:

1| Material specifications: two types, optical glass for the visible spectrum (340-2500 nm) and synthetic quartz for ultraviolet spectrum (190-2500 nm).

3| Cells construction: made up by sinering its walls, that is, thanks to a heating process the melting point, of glass or quartz powder so that its articles adhere to each other pressure.

3| General features:

- Resistant to alcali, 6 mol/L of NOH kept in cells for 24 hours, with neither breakage nor leakage.

-Resistant to acids, 6 mol/L of HC1 kept in cells for 24 hours, with neither breakage nor leakage.

- Resistant to organic solvents as ethanol (C<sub>5</sub>H<sub>5</sub>OH), carbon tetrachloride (CCl<sub>4</sub>) or benzene (C<sub>6</sub>H<sub>6</sub>) kept in cells for 24 hours with neither breakage nor leakage.

### Macro standard (10 mm)



1| The most common in analytic Chemistry.

2| They have two polished walls and are open at the top, though they are supplied with a plastic stopper (non hermetic).

3| External dimensions 12.5 x B x 45mm.

| Code   | Path length | Volume   | Lot |
|--------|-------------|----------|-----|
| HJK001 | 1 mm        | 0.35 mL  | 2   |
| HJK002 | 2 mm        | 0.70 mL  | 2   |
| HJK003 | 5 mm        | 1.70 mL  | 2   |
| HJK004 | 10 mm       | 3.50 mL  | 2   |
| HJK005 | 20 mm       | 7.00 mL  | 2   |
| HJK006 | 40 mm       | 14.00 mL | 2   |
| HJK007 | 50 mm       | 17.50 mL | 2   |



### Macro standard with hermetic stopper (10 mm)



1| Included PTFE stopper, which seals the cells hermetically thus making them better for volatile fluids.

2| External dimensions: 12.5 x 12.5 x 48 mm.

| Code   | Path length | Volume  | Lot |
|--------|-------------|---------|-----|
| HJK008 | 10 mm       | 3.50 mL | 2   |



### Semi-micro with black walls and non hermetic stopper (4 mm)



1| For reducing the volume of sample necessary to make a reading.

2| Their black walls improve sensitivity by eliminating stray light of reading.

3| External dimensions 12.5 x B x 45 mm

4| With stopper (non hermetic).

| Code   | Path length | Volume  | Lot |
|--------|-------------|---------|-----|
| HJK009 | 5 mm        | 0.50 mL | 2   |
| HJK010 | 10 mm       | 1.00 mL | 2   |
| HJK011 | 20 mm       | 2.00 mL | 2   |





## HJK - Cells, glass



► Semi-micro with black walls and hermetic stopper (4 mm)



1 | Included PTFE stopper, which seals the cells hermetically thus making them better for volatile fluids.

2 | External dimensions 12.5 x 12.5 x 48 mm.

| Code   | Path length | Volume  | Lot |
|--------|-------------|---------|-----|
| HJK012 | 10 mm       | 1.00 mL | 2   |

► Micro with black walls (2 mm)



1 | For small sample volume.

2 | External dimensions 12.5 x 12.5 x 48 mm .

3 | With stopper (non hermetic).

| Code   | Path length | Volume  | Lot |
|--------|-------------|---------|-----|
| HJK013 | 10 mm       | 0.50 mL | 2   |

► Micro with black walls and stopper (2 mm)

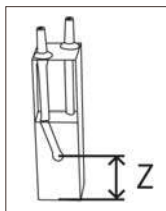


1 | Included PTFE stopper, which seals the cells hermetically thus making them better for volatile fluids.

2 | External dimensions 12.5 x B x 48mm

| Code   | Path length | Volume  | Lot |
|--------|-------------|---------|-----|
| HJK014 | 5 mm        | 0.25 mL | 2   |
| HJK015 | 10 mm       | 0.50 mL | 2   |

► Flow-through cells



1 | Made of optical glass (G).

2 | Are used in those spectrophotometrical applications that require a measuring range from 340 nm to 2.5 mm.

3 | The cells present inlet and outlet tubes and two polished windows .

4 | Each model is supplied in a case with two units.

5 | External dimensions 12.5 x 12.5 x 45mm

| Glass  | Height Z | Path length | Volume  | Lot |
|--------|----------|-------------|---------|-----|
| HJK016 | 8.5 mm   | 10 mm       | 0.07 mL | 2   |
| HJK017 | 15 mm    | 10 mm       | 0.07 mL | 4   |

## HJL - Cells, quartz

Cells are supplied in paired up units and their main features are the following:

1| Material specifications: two types, optical glass for the visible spectrum (340-2500 nm) and synthetic quartz for ultraviolet spectrum (190-2500 nm).

2| Cells construction: made up by sinering its walls, that is, thanks to a heating process the melting point, of glass or quartz powder so that its articles adhere to each other pressure.

3| General features:

- Resistant to alcali, 6 mol/L of NaOH kept in cells for 24 hours, with neither breakage nor leakage.

-Resistant to acids, 6 mol/L of HCL kept in cells for 24 hours, with neither breakage nor leakage.

- Resistant to organic solvents as ethanol (C<sub>5</sub>H<sub>5</sub>OH), carbon tetrachloride (CCl<sub>4</sub>) or benzene (C<sub>6</sub>H<sub>6</sub>) kept in cells for 24 hours with neither breakage nor leakage.

### Standard macro (10 mm)



1| The most common in analytic Chemistry.

2| They have two polished walls and are open at the top, though they are supplied with a plastic stopper (non hermetic).

3| External dimensions 12.5 x B x 45mm.

| Code   | Path length | Volume   | Lot |
|--------|-------------|----------|-----|
| HJL001 | 1 mm        | 0.35 mL  | 2   |
| HJL002 | 2 mm        | 0.70 mL  | 2   |
| HJL003 | 5 mm        | 1.70 mL  | 2   |
| HJL004 | 10 mm       | 3.50 mL  | 2   |
| HJL005 | 20 mm       | 7.00 mL  | 2   |
| HJL006 | 40 mm       | 14.00 mL | 2   |
| HJL007 | 50 mm       | 17.50 mL | 2   |



### Macro standard with hermetic stopper (10 mm)



1| Included PTFE stopper, which seals the cells hermetically thus making them better for volatile fluids.

2| External dimensions: 12.5 x 12.5 x 48 mm.

| Code   | Path length | Volume  | Lot |
|--------|-------------|---------|-----|
| HJL008 | 10 mm       | 3.50 mL | 2   |



### Semi-micro with black walls (4 mm)



1| For reducing the volume of sample necessary to make a reading.

2| Their black walls improve sensitivity by eliminating stray light of reading.

3| Dimensiones exteriores 12.5 x B x 45 mm

4| With stopper (non hermetic).

| Code   | Path length | Volume  | Lote |
|--------|-------------|---------|------|
| HJL009 | 5 mm        | 0.50 mL | 2    |
| HJL010 | 10 mm       | 1.00 mL | 2    |
| HJL011 | 20 mm       | 2.00 mL | 2    |





## HJL - Cells, quartz

## Semi-micro quartz cell with stopper (4 mm)



1 | Included PTFE stopper, which seals the cells hermetically thus making them better for volatile fluids.

2 | External dimensions: 12.5x12.5x48 mm

| Code   | Path length | Volume  | Lote |
|--------|-------------|---------|------|
| HJL012 | 10 mm       | 1.00 mL | 2    |

## Micro with black walls (2 mm)



1 | For small sample volume.

2 | External dimensions 12.5 x 12.5 x 48mm .

3 | With stopper (non hermetic).

| Code   | Path length | Volume  | Lote |
|--------|-------------|---------|------|
| HJL013 | 10 mm       | 0.50 mL | 2    |

## Micro with black walls and stopper (2 mm)



1 | Included PTFE stopper , which seals the cells hermetically thus making them better for volatile fluids.

2 | External dimensions 12.5 x B x 48mm

| Code   | Path length | Volume  | Lote |
|--------|-------------|---------|------|
| HJL014 | 5 mm        | 0.25 mL | 2    |
| HJL015 | 10 mm       | 0.50 mL | 2    |



## HJM - Cells, others

## Glass tube for spectrophotometer (vis)



| Code   | Dimensions | Path length | Models        |
|--------|------------|-------------|---------------|
| HJM001 | 12x100 mm  | 10 mm       | 4101 y 4111RS |

## HMB - Polarimeters

### Models 404 and 404-LED



- 1| Inclined sample compartment for glass tube up to 220 nm.
- 2| Double reading scale with Vernier to avoid differences due to eccentricity.
- 3| Eyepiece provided with dioptric adjusting ring.
- 4| Two lateral 4x magnifying glasses facilitate scale readings.
- 5| Supplied with two samples tubes of 100 and 200 mm long respectively.

|                 |                    |              |
|-----------------|--------------------|--------------|
| Code            | HMB001             | HMB002       |
| Model           | 404                | 404-LED      |
| Illumination    | Sodium vapour lamp | LED + filter |
| Wavelegth       | 589,4 nm           | 589,4 nm     |
| Nº scales       | 2                  |              |
| Measuring range | 2 scales (0-180°)  |              |
| Scale division  | 1°                 |              |
| Vernier reading | 0,05°              |              |



REF. HMB001



REF. HMB002

### Model 412



- 1| Photoelectric detection, with RS 232 output.
- 2| Repetition of measurement 3 times and calculation of average value.
- 3| High sensitivity suitable for samples of low optical rotation which are difficult to analyzed by the optical polarimeter.
- 4| Supplied with two samples tubes of 100 and 200 mm long respectively.

|                              |                                                  |
|------------------------------|--------------------------------------------------|
| Code                         | HMB003                                           |
| Model                        | 412                                              |
| Range                        | From +45° a -45°                                 |
| Accuracy                     | $\pm(0,001 + \text{medium valor} \times 0,05\%)$ |
| Min. transmittance of sample | 10%                                              |
| Illumination                 | LED + filter (589,4nm)                           |
| Speed                        | 1,3°/s                                           |



### Model 418



- 1| Advanced digital circuit and microprocess or control RS 232 output.
- 2| Repetition of measurement 3 times and calculation of average value.
- 3| Measure those dark coloured sample with transmittance near than 1%
- 4| Supplied with two samples tubes of 100 and 200 mm long respectively.

|                              |                                |
|------------------------------|--------------------------------|
| Code                         | HMB004                         |
| Model                        | 418                            |
| Range                        | from +45° a -45°               |
| Accuracy                     | $\pm 0,001^\circ$              |
| Min. transmittance of sample | 1%                             |
| Illumination                 | Sodium lamp + filter (589,4nm) |
| Speed                        | 1°/s                           |



## HMB - Polarimeters



## Model 430



- 1 | Photoelectric detection and microprocessor control with RS232 output.
- 2 | Measurement of specific rotation, optical rotation and sugar degree.
- 3 | Repetition of measurement 3 times and calculation of average value and root mean square.
- 4 | Supplied with two samples tubes of 100 and 200 mm long respectively.

|                              |                                                                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Code                         | HMB005                                                                                                                               |
| Model                        | 430                                                                                                                                  |
| Range                        | De +45° a -45° / De +130°Z a -130°Z                                                                                                  |
| Accuracy                     | $\pm 0,01^\circ + (\text{medium valve} \times 0,05\%) / n10000$<br>$\pm 0,03^\circ Z + (\text{medium valve} \times 0,05\%) / n10000$ |
| Min. transmittance of sample | 10%                                                                                                                                  |
| Illumination                 | Sodium lamp + filter (589,4nm)                                                                                                       |
| Speed                        | 1°/s                                                                                                                                 |

## HMF - Calibration pieces



- 1 | For checking the accuracy of measurements obtained with polarimeter.
- 2 | Quartz piece with metal mount.
- 3 | Supplied in case.

| Code   | Description                                      |
|--------|--------------------------------------------------|
| HMF001 | Quartz piece for calibration of polarimeter +5°  |
| HMF002 | Quartz piece for calibration of polarimeter -5°  |
| HMF003 | Quartz piece for calibration of polarimeter +17° |
| HMF004 | Quartz piece for calibration of polarimeter -17° |
| HMF005 | Quartz piece for calibration of polarimeter +35° |
| HMF006 | Quartz piece for calibration of polarimeter -35° |

## HMG - Accessories

REF. HMG005



REF. HMG006



| Code   | Description                          |
|--------|--------------------------------------|
| HMG001 | Sodium vapor lamp 589.3 nm           |
| HMG002 | Rubber joint for test tubes          |
| HMG003 | Test tube stopper                    |
| HMG004 | Test tube circular glass disk 15 mm. |
| HMG005 | Test tube for polarimeter 100 mm.    |
| HMG006 | Test tube for polarimeter 200 mm.    |



## ▶ HPB - Abbe

### ▶ Abbe model 315RS, digital



- 1 | Application on chemical, petroleum, food and pharmaceutical industries, universities and research..
- 2 | For measuring the refractive index (nD) of transparent or translucent liquids and solids as well as sugar concentration (° Bx).
- 3 | Automatic temperature compensation on the Brix scale.



|                        |                    |
|------------------------|--------------------|
| Code                   | HPB001             |
| Range                  |                    |
| Refractive index       | 1,3000-1,7000 nD   |
| Brix                   | 0-95%              |
| Accuracy               |                    |
| Refractive index       | ±0,0002 nD         |
| Brix                   | ± 0,1              |
| Size                   | 330 x180x380 mm    |
| Temperature correction | 15/45 °C           |
| Weight                 | 10 kg              |
| Power                  | CA 220 V, 50-60 Hz |

### ▶ Abbe model 325



- 1 | To measure refractive index and sugar concentration (Brix).
- 2 | With metal body, it is prepared to joint up a circulation thermostat; with digital thermometer.
- 3 | The scale is illuminated by means of natural light and the illumination can be incident transmitted.
- 4 | Magnifications of the optical system: 2x.

|                  |                  |
|------------------|------------------|
| Code             | HPB002           |
| Range            |                  |
| Refractive index | 1,3000-1,7000 nD |
| Brix             | 0-95%            |
| Accuracy         |                  |
| Refractive index | ±0,0005 nD       |
| Brix             | 0,25%            |
| Size             | 100x200x240 mm   |
| Weight           | 2.6 kg           |



## ▶ HPD - hand, Brix scale



metal body



plastic body

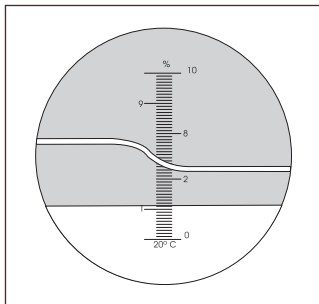
1 | Each refractometer is supplied in a grey plastic box with a plastic pipette, a screwdriver, rubber eyecup and rubber handle.

2 | With metallic body except ECO model (plastic body).



## HPD - hand, Brix scale

## ▶ 0-10% Brix

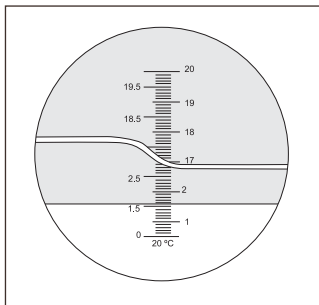


1 | Suitable for samples with low concentration of dissolved solids (lower than 10%) as for example tomatoes, low concentrated juices and industrial oils.

2 | Calibration is performed with distilled water adjusting to zero.

| Code   | Range    | Accuracy | ATC (10-30°C) |
|--------|----------|----------|---------------|
| HPD001 | 0-10% Bx | 0.1%     | No            |
| HPD012 | 0-10% Bx | 0.1%     | Yes           |

## ▶ 0-20% Brix

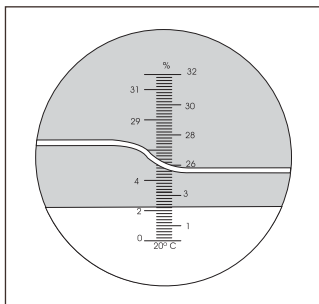


1 | Suitable for low concentrations (juices of fruits, alcohol-free beverages) except grape juice.

2 | Calibration is performed with distilled water.

| Code   | Range    | Accuracy | ATC (10-30°C) |
|--------|----------|----------|---------------|
| HPD002 | 0-20% Bx | 0.1%     | No            |
| HPD013 | 0-20% Bx | 0.1%     | Yes           |

## ▶ 0-32% Brix

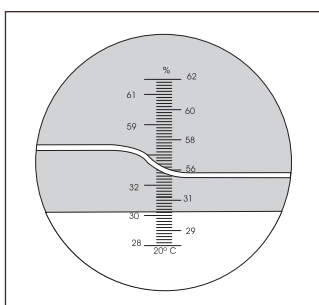


1 | Suitable for low concentrations usually used for fruits, juices, beverages, dairy products, milk products, industrial oils...

2 | Calibration is performed with distilled water.

| Code   | Range    | Accuracy | ATC (10-30°C) |
|--------|----------|----------|---------------|
| HPD003 | 0-32% Bx | 0.2%     | No            |
| HPD014 | 0-32% Bx | 0.2%     | Yes           |

## ▶ 28-62% Brix



1 | Suitable for mild-range concentrations as for example are concentrated juices, jams, canned foods...

2 | Calibration is performed with a 28% sugar solution in distilled water, that means 28 g of sugar in a 100 ml of solution.

| Code   | Range     | Accuracy | ATC (10-30°C) |
|--------|-----------|----------|---------------|
| HPD004 | 28-62% Bx | 0.2%     | No            |
| HPD015 | 28-62% Bx | 0.2%     | Yes           |

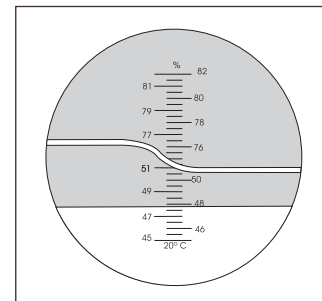
## HPD - hand, Brix scale

### 40-82% Brix



- 1 | Model suitable for high concentration as for example condensed milk, liquid caramel, high concentrated juices, jams, etc.
- 2 | Calibration is performed with a 45% sugar solution in distilled water, that means 45 g of sugar in a 100 ml of solution.

| Code   | Range     | Accuracy | ATC (10-30°C) |
|--------|-----------|----------|---------------|
| HPD005 | 40-82% Bx | 0.5%     | No            |
| HPD016 | 40-82% Bx | 0.5%     | Yes           |

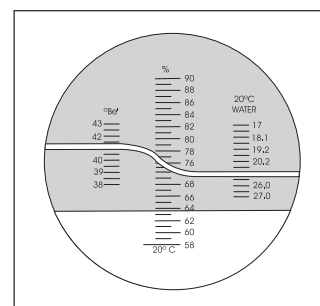


### 58-92% Brix



- 1 | Model for high concentrations of sugar in honey.
- 2 | Calibration is performed with 58% sugar solution in distilled water, that means 58 g of sugar in a 100 ml of solution.

| Code   | Range     | Accuracy | ATC (10-30°C) |
|--------|-----------|----------|---------------|
| HPD006 | 58-92% Bx | 0.5%     | No            |
| HPD017 | 58-92% Bx | 0.5%     | Yes           |

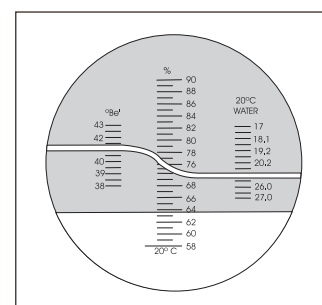


### 58-92% Brix | 38-43 ° Baume | 12-27% Water



- 1 | This refractometer is specially suited for analyzing the three main values in honey; sugar content, Baumé degrees and water content.
- 2 | Calibration is performed with a test piece and bromonaphtalene, both included.

| Code          | HPD007                               | HPD018 |
|---------------|--------------------------------------|--------|
| Range         | 58-92% Bx   38-43 °Bé   12-27% Water |        |
| Accuracy      | 0.5%   0.5°   0.5%                   |        |
| ATC (10-30°C) | No                                   | Yes    |

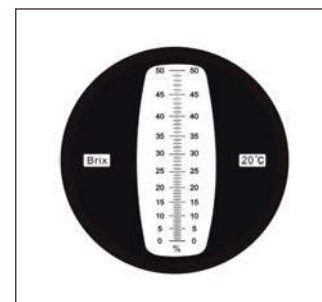


### 0-50% Brix



- 1 | Model used for concentrated solutions of grape juice.
- 2 | Calibration is performed with distilled water.

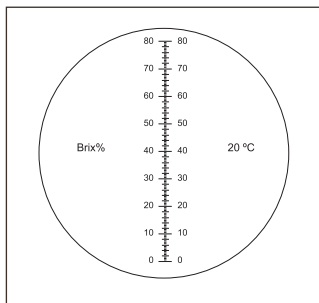
| Code   | Range    | Accuracy | ATC (10-30°C) |
|--------|----------|----------|---------------|
| HPD008 | 0-50% Bx | 0.5%     | No            |
| HPD019 | 0-50% Bx | 0.5%     | Yes           |





## HPD - hand, Brix scale

▶ 0-80% Brix | 0-80% Brix (2 scales)



- 1 | This refractometer has a wide range 0-80% Brix, suitable for analyzing very different types of samples.
- 2 | The line in this model is in blue or white.
- 3 | It is used for fruit juices, alcohol-free beverages or even industrial oils.
- 4 | Calibration of models HPD009 and HPD020 is performed with distilled water.

| Code   | Range                        | Accuracy | ATC (10-30°C) |
|--------|------------------------------|----------|---------------|
| HPD009 | 0-80% Bx                     | 0.5%     | No            |
| HPD020 | 0-80% Bx                     | 0.5%     | Yes           |
| HPD021 | 0-80% Bx<br>(0-50%   50-80%) | 1%       | No            |

▶ 0-90% Brix | 0-90% Brix (3 scales)



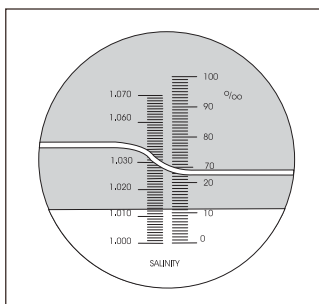
- 1 | Has a wide range 0-80% Brix, it allows the measurement of very different types of samples.
- 2 | Calibration is performed with distilled water (model HPD011)

| Code   | Range                                 | Accuracy | ATC (10-30°C) |
|--------|---------------------------------------|----------|---------------|
| HPD011 | 0-90% Bx                              | 0.5%     | No            |
| HPD010 | 0-90% Bx<br>(0-42%   42-71%   71-90%) | 0.2%     | No            |



## HPF - hand, salinity

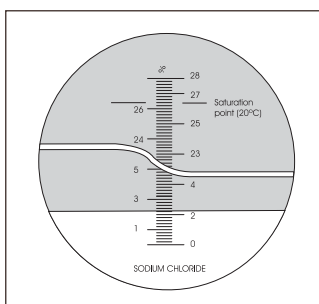
▶ 0-100‰ Salt



- 1 | Suitable for mild-range salt concentrations in sea water, food products... they have a specific gravity scale.
- 2 | Calibration is performed with distilled water.

| Code   | Range                                   | Accuracy          | ATC (10-30°C) |
|--------|-----------------------------------------|-------------------|---------------|
| HPF001 | 0-100‰ Sal<br>1000-1070 mg/L            | 1‰   0.001        | No            |
| HPF004 | 0-100‰ Sal<br>1000-1070 mg/L            | 1‰   0.001        | Yes           |
| HPF007 | 0-100‰ Sal<br>0-10% Bx   1000-1070 mg/L | 1‰   0.1%   0.001 | Yes           |

▶ 0-28% Salt



- 1 | Suitable to measure salt concentration of sea water, fish farms, aquariums, brines...
- 2 | Calibration is performed with distilled water.

| Code   | Range     | Accuracy | ATC (10-30°C) |
|--------|-----------|----------|---------------|
| HPF002 | 0-28% Sal | 0.2%     | No            |
| HPF005 | 0-28% Sal | 0.2%     | Yes           |

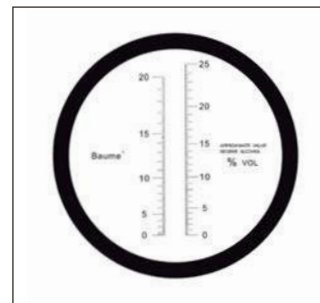
## ▶ HPH - Hand, oenology

### ▶ 2 scales (% alcohol y Baumé)



- 1| Suitable for measuring the alcohol content and Baumé grade in grape juice. It has no temperature compensation.
- 2| Calibration is performed with distilled water.

| Code   | Range                              | Accuracy  | ATC (10-30°C) |
|--------|------------------------------------|-----------|---------------|
| HPH001 | 0-25% probable alcohol<br>0-22° Bé | 0.2% 0.2° | No            |

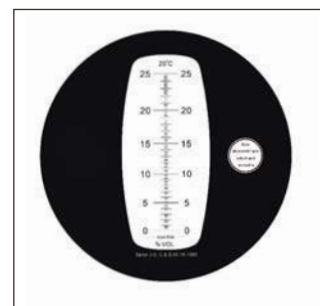


### ▶ 0-25% probable alcohol



- 1| Designed to perform the measurement of alcohol in grapes.
- 2| It has temperature compensation between 10-30°C.
- 3| Calibration is performed with distilled water.

| Code   | Range                  | Accuracy | ATC (10-30°C) |
|--------|------------------------|----------|---------------|
| HPH002 | 0-25% probable alcohol | 0.2%     | Yes           |



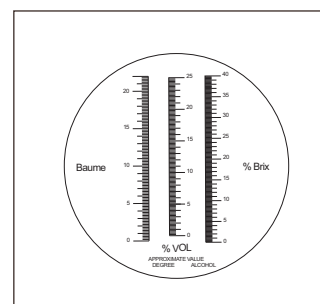
page  
[143]

### ▶ 3 scales



- 1| Suitable to measure alcohol content in grape juice, Baumé degrees and Brix degrees, thus allowing to check the ripening level of grapes before and during the harvest.
- 2| Calibration is performed with distilled water.

| Code   | Range                                             | Accuracy     | ATC (10-30°C) |
|--------|---------------------------------------------------|--------------|---------------|
| HPH003 | 0-25% probable alcohol<br>0-22° Bé 0-40% Bx       | 0.2% 0.2° 1% | Yes           |
| HPH004 | 0-25% probable alcohol<br>0-22° Bé 0-40% Bx (ECO) | 0.2% 0.2° 1% | Yes           |

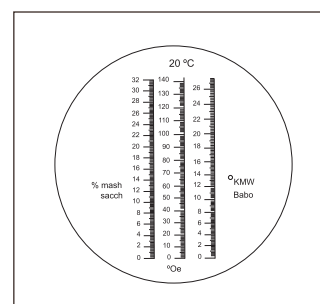


### ▶ 3 scales



- 1| Suitable for fruit juice concentration, with three different scales
- 2| Calibration is performed with distilled water.

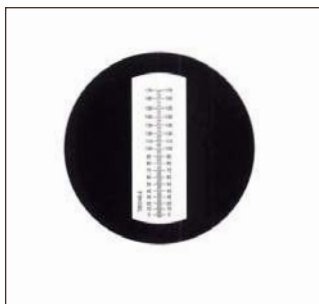
| Code   | Range                                        | Accuracy     | ATC (10-30°C) |
|--------|----------------------------------------------|--------------|---------------|
| HPH005 | 0-140° Oe 0-25° KMW Babo<br>0-32% mash sacch | 1° 0.2° 0.2% | Yes           |





## HPH - hand, oenology

## 0-170° Oe



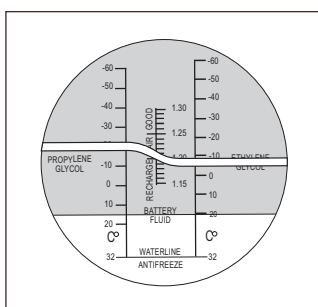
- 1 | Suitable to measure the concentration of fruit juice in Oe degrees.
- 2 | Calibration is performed with distilled water.
- 3 | Temperature compensation between 10-30 degrees.

| Code   | Range     | Accuracy | ATC (10-30°C) |
|--------|-----------|----------|---------------|
| HPH007 | 0-170° Oe | 2° Oe    | Yes           |



## HPK - hand, batteries

## Batteries refractometers

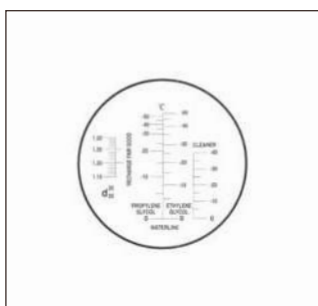


- 1 | Suitable for measuring the freezing point of antifreezes based on propylene glycol and ethylene glycol, as well as the state of electrolytic solutions of batteries and cleaning liquids.
- 2 | Calibration is performed with distilled water.

| Code   | Range                                            | Accuracy        | ATC (10-30°C) |
|--------|--------------------------------------------------|-----------------|---------------|
| HPK001 | -60/32 °F (EG)<br>-50/32 °F (PG)<br>1.15-1.30 sg | 10 °F   0.01 sg | No            |



## Batteries refractometers

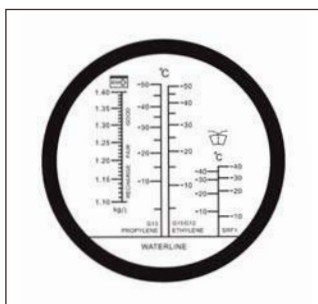


- 1 | Suitable to measure the freezing point of antifreezes based on propylene glycol and ethylene glycol, as well as the state of electrolytic solutions of batteries and cleaning liquids.
- 2 | It is also especially suited for measuring the urea content in petrol thanks by using reducing agents (AdBlue, EcoBlue).
- 3 | Calibration is performed with distilled water.

| Code   | Range                                            | Accuracy         | ATC (10-30°C) |
|--------|--------------------------------------------------|------------------|---------------|
| HPK002 | -50 a 0 °C (EG/PG)<br>1.15-1.30 sg<br>-40 a 0 °C | 5 °C 0.01 sg 5°C | No            |



## Batteries refractometer



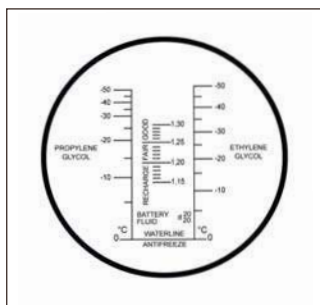
- 1 | Suitable to measure the freezing point of antifreezes based on propylene glycol and ethylene glycol, as well as the state of electrolytic solutions of batteries and cleaning liquids.
- 2 | Calibration is performed with distilled water.

| Code   | Range                                              | Accuracy           | ATC (10-30°C) |
|--------|----------------------------------------------------|--------------------|---------------|
| HPK005 | -50 a 0 °C (EG/PG)<br>1.10-1.40 Kg/L<br>-40 a 0 °C | 5°C 0.01 Kg/L 10°C | Yes           |



## ▶ HPH - hand, batteries

### ▶ Batteries refractometer

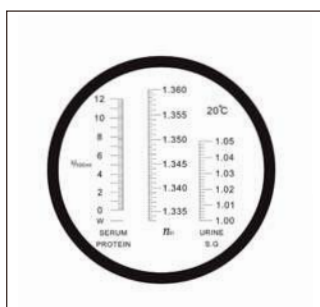


- 1| Suitable to measure the freezing point of antifreezes based on propylene glycol and ethylene glycol, as well as the state of electrolytic solutions of batteries.
- 2| Calibration is performed with distilled water.

| Code   | Range                              | Accuracy       | ATC (10-30°C) |
|--------|------------------------------------|----------------|---------------|
| HPK006 | -50 a 0 °C (EG/PG)<br>1.15-1.30 sg | 5 °C   0.01 sg | Yes           |

## ▶ HPM - Hand, clinical

### ▶ Hand, clinical 3 scales



- 1| It has three scales; proteins in serum, urine specific gravity and refractive index.
- 2| Calibration is performed with distilled water (the separating line must match the value 1.333 of the refractive index scale).

| Code   | Range          | Accuracy   | ATC (10-30°C) |
|--------|----------------|------------|---------------|
| HPM001 | 0 - 12 g/dl    | 0.2 % g/dL | No            |
|        | 1.000-1.050 sg | 0.002 sg   |               |
|        | 1.333-1.360 nD | 0.005 nD   |               |
| HPM002 | 0 - 12 g/dl    | 0.2 % g/dL | Yes           |
|        | 1.000-1.050 sg | 0.002 sg   |               |
|        | 1.333-1.360 nD | 0.005 nD   |               |

### ▶ Hand, clinical URIVET

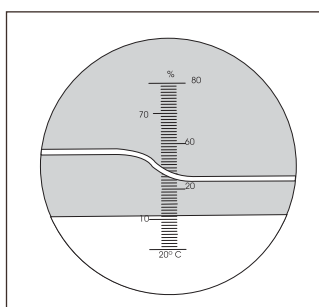


- 1| Designed for veterinary use, especially for the analysis of cats and dogs serum. Simple, easy and fast, only with a drop it gives you a result.

| Code   | Range                           | Accuracy                 | ATC (10-30°C) |
|--------|---------------------------------|--------------------------|---------------|
| HPM003 | 2-14 g/100 mL<br>1.000-1.060 sg | 0.1 g/100 mL<br>0.001 sg | YES           |

## ▶ HPP - Hand, others

### ▶ Hand refractometer



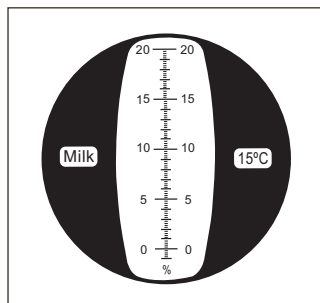
- 1| Suitable to measure the alcohol degree in a solution, it can be used for wines and spirits taking into consideration other parameters.
- 2| Calibration is performed with distilled water.

| Code   | Range               | Accuracy | ATC (10-30°C) |
|--------|---------------------|----------|---------------|
| HPP001 | 0-80% Alcohol (w/w) | 1%       | No            |



## HPP - Hand, others

## ▶ Refractometer for milk



1 | Suitable for measuring the water content in milk.

2 | Calibration is performed with distilled water.

| Code   | Range   | Accuracy | ATC (10-30°C) |
|--------|---------|----------|---------------|
| HPP002 | -1%-20% | 0.2%     | Yes           |

## ▶ Refractometer 1.333-1.520 nD, 3 scales



1 | For measuring the dissolved solid concentration (%Brix) or refractive index (nD) of aqueous solutions.

2 | Allow the analysis of a large variety of samples since they are provided with 3 scales that cover a wide range of measurement.

| Code   | Range                                                                             | Accuracy  | ATC (10-30°C) |
|--------|-----------------------------------------------------------------------------------|-----------|---------------|
| HPP003 | 1.333-1.515 nD (3 escalas)<br>(1.333-1.400 nD<br>1.400-1.470 nD<br>1.470-1520 nD) | 0.0005 nD | No            |

## ▶ Hand refractometers, accessories



| Code   | Description                                        |
|--------|----------------------------------------------------|
| HPP004 | Cover prism plate, two pieces                      |
| HPP005 | Blinker for hand refractometers                    |
| HPP006 | Plastic Box for hand refractometers                |
| HPP007 | Test Piece for the calibration of Abbe Refractomet |
| HPP008 | Lamp 6.3v, 2.5w for ABBE Refractometer 315         |
| HPP009 | Digital thermometer f/refractometer 325            |



## RESUME CHART OF REFRACTOMETERS

| Type                       | No ATC | ATC (10-30°C) | Range                                                                                                         | Accuracy                            | Calibration                     |
|----------------------------|--------|---------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------|
| BRIX                       | HPD001 | HPD012        | 0 - 10%                                                                                                       | 0.1 %                               | Distilled water                 |
|                            | HPD002 | HPD013        | 0 - 20%                                                                                                       | 0.1 %                               | Distilled water                 |
|                            | HPD003 | HPD014        | 0 - 32%                                                                                                       | 0.2 %                               | Distilled water                 |
|                            | HPD004 | HPD015        | 28 - 62%                                                                                                      | 0.2 %                               | Solution 28%sugar/water         |
|                            | HPD005 | HPD016        | 40 - 82%                                                                                                      | 0.5 %                               | Solution 45%sugar/water         |
|                            | HPD006 | HPD017        | 58-92%                                                                                                        | 0.5 %                               | Solution 58%sugar/water         |
|                            | HPD007 | HPD018        | 58 - 92% Bx<br>38 - 43 ° Bé<br>12 - 27% Water                                                                 | 0.5 % Bx<br>0.5 ° Bé<br>0.5 % Water | Bromonaphtalene<br>+ test piece |
|                            | HPD008 | HPD019        | 0 - 50%                                                                                                       | 0.5 %                               | Distilled water                 |
|                            | HPD009 | HPD020        | 0 - 80%                                                                                                       | 0.5 %                               | Distilled water                 |
|                            | HPD021 |               | 0-50% Bx<br>50-80% Bx                                                                                         | 1 %                                 | Distilled water                 |
|                            | HPD011 |               | 0 - 90%                                                                                                       | 0.5 %                               | Distilled water                 |
| SALINITY                   | HPF001 | HPF004        | 0 - 100‰ Salt<br>1000-1070 g/mL                                                                               | 1‰<br>0.001 g/mL                    | Distilled water                 |
|                            | HPF002 | HPF005        | 0 - 28% Salt                                                                                                  | 0.2 %                               | Distilled water                 |
|                            |        | HPF007        | 0 - 100‰ Salt<br>0 - 10% Bx<br>1000-1070 g/mL                                                                 | 1 ‰<br>0.1 %<br>0.001 g/mL          | Distilled water                 |
|                            |        |               |                                                                                                               |                                     |                                 |
| CLINICAL                   | HPM001 | HPM002        | 0 - 12 g/dl de Proteins in serum<br>1.000 - 1.050 Specific weight (sg)<br>1.333 - 1.360 nD (refraction index) | 0.2 % g/dL<br>0.002 sg<br>0.005 nD  | Distilled water                 |
|                            |        |               |                                                                                                               |                                     |                                 |
| VETERINARY                 | HPM003 |               | 2 - 14 g/100 mL de Proteins in serum<br>1.000 - 1.060 Specific weight                                         | 0.1<br>0.001                        |                                 |
| MOSTOS Y ALCOHOLES         | HPP001 |               | 0 - 80% Alcohol (w/w)                                                                                         | 1 %                                 | Distilled water                 |
|                            |        | HPH003        | 0 - 25% probable alcohol                                                                                      | 0.2 % probable alcohol              |                                 |
|                            |        | HPH004 (ECO)  | 0-22° Bé<br>0-40% Bx                                                                                          | 0.2° Bé<br>1 % Bx                   | Distilled water                 |
|                            |        | HPH001 (ECO)  | 0 - 25% probable alcohol<br>0-22°Bé                                                                           | 0.2 % probable alcohol<br>0.2° Bé   | Distilled water                 |
|                            |        | HPH002        | 0 - 25% probable alcohol                                                                                      | 0.2 % probable alcohol              | Distilled water                 |
| FRUIT JUICE                |        | HPH005        | 0-140° Oe                                                                                                     | 1° Oe                               | Distilled water                 |
|                            |        |               | 0-25° KMW Babo                                                                                                | 0.2° KMW Babo                       |                                 |
|                            |        |               | 0-32% mash sacch                                                                                              | 0.2% mash sacch                     |                                 |
|                            |        | HPH007        | 0-170° Oe                                                                                                     | 2° Oe                               | Distilled water                 |
| MILK                       |        | HPP002        | -1%-20%                                                                                                       | 0.2%                                | Distilled water                 |
| BATTERIES AND ANTI-FREEZES | HPK001 |               | - 60 a 32°F (EG)<br>-50 a 32 °F (PG)                                                                          | 10 °F<br>0.01 sg                    | Distilled water                 |
|                            |        |               | 1.15 - 1.30 sg (Batteries)                                                                                    |                                     |                                 |
|                            |        |               | -50 a 0 °C (EG/PG)                                                                                            | 5 °C                                | Distilled water                 |
|                            |        |               | 1.15 - 1.30 sg (Batteries)                                                                                    | 0.01 sg                             |                                 |
|                            |        |               | -40 a 0 °C (Cleaning)                                                                                         | 5°C                                 |                                 |
|                            |        | HPK005        | -50 a 0 °C (EG/PG)                                                                                            | 5 °C                                | Distilled water                 |
|                            |        |               | 1.10 – 1.40 Kg/L (Batteries)                                                                                  | 0.01 Kg/L                           |                                 |
|                            |        |               | -40 a 0 °C (Cleaning)                                                                                         | 10°C                                |                                 |
|                            |        | HPK006        | -50 a 0 °C (EG/PG)                                                                                            | 5 °C                                | Distilled water                 |
|                            |        |               | 1.15 – 1.30 sg (Batteries)                                                                                    | 0.01 seg                            |                                 |

## HRB - Hand

### Folding handles



1 | With glass lens and plastic folding handle.

| Code   | Description | Diameter | Magnification |
|--------|-------------|----------|---------------|
| HRB008 | 1 lens      | 50 mm    | 3x            |

### Metal ring



1 | With black handle that can be separated from the rest of the magnifying glass. The lens is made of glass.

| Code   | Diameter | Magnification |
|--------|----------|---------------|
| HRB010 | 60 mm    | 6x            |
| HRB011 | 75 mm    | 5x            |

## HRD - Desktop

### With clamps



1 | Small magnifying glasses with metal structure and a pair of clamps to hold the object to be observed. The lens is made of glass.

| Code   | Diameter | Magnification |
|--------|----------|---------------|
| HRD001 | 60 mm    | 7x            |

### Desktop



1 | Metallic base and flexible arm to be fixed at the most adequate position.  
2 | Large diameter glass lens.

| Code   | Diameter | Magnification |
|--------|----------|---------------|
| HRD002 | 92 mm    | 3x            |

## HRG - Thread counters



1 | Made in plastic, the thread counters presents a base graduated in millimeters and inches.

| Code   | Diameter | Magnification |
|--------|----------|---------------|
| HRG003 | 110 mm   | 3x            |
| HRG004 | 50 mm    | 5x            |



[J]

## INDEX OF CONTENTS HEATING - COOLING

|                                                  |            |
|--------------------------------------------------|------------|
| <b>[JB] Ovens.....</b>                           | <b>150</b> |
| JBB - Incubators .....                           | 150        |
| JBD - Drying ovens.....                          | 150        |
| JBG - Incubators/Drying ovens, accessories ..... | 151        |
| <b>[JD] Baths.....</b>                           | <b>151</b> |
| JDB - Water/Oil baths, analogical .....          | 151        |
| JDD - Water/Oil baths, digital.....              | 151        |
| JDG - Water/Oil baths, accessories .....         | 152        |
| JDS - Thermoblocks.....                          | 152        |
| JDV - Thermoblocks, accessories.....             | 154        |
| <b>[JG] Heating mantles .....</b>                | <b>155</b> |
| JGB - Mantles with stirring .....                | 155        |
| JGD - Mantles without stirring.....              | 155        |

TRADEMARKS:





## JBB - Incubators



## Incubator series 636 PLUS



- 1| Made of furnace painted steel, external metal structure covered with epoxy and interior of stainless steel
- 2| Door with double glazed widow for external control without temperature variations in the inner chamber
- 3| Air circulation system by natural convection
- 4| Supplied with two height adjustable grid trays

| Code                   | JBB005                     | JBB001   | JBB002   | JBB003   | JBB004   |
|------------------------|----------------------------|----------|----------|----------|----------|
| Capacity               | 18 L                       | 30 L     | 45 L     | 65 L     | 125 L    |
| T range                | RT + 5-80°C                |          |          |          |          |
| Resolution             | 1°C (adjustable at 0.1°C)* |          |          |          |          |
| T fluctuation          | ± 0.5 °C                   |          |          |          |          |
| Homogeneity            | 2%                         |          |          |          |          |
| Consumption            | 0.3 Kw                     | 0.3 Kw   | 0.3 Kw   | 0.4 Kw   | 0.5 Kw   |
| Aprox. dimensions (cm) |                            |          |          |          |          |
| External               | 44x38x55                   | 46x51x69 | 50x55x73 | 55x55x84 | 64x68x91 |
| Internal               | 26x26x26                   | 31x31x31 | 35x35x35 | 40x36x45 | 50x45x55 |
| Aprox. weight          | 20 Kg                      | 39 Kg    | 42 Kg    | 53 Kg    | 58 Kg    |

\* consult



## JBD - Drying



## Drying ovens natural convection, series 631 PLUS



- 1| External metal structure covered with epoxy and interior of stainless steel. Adjustable legs to facilitate installation and levelling of the oven
- 2| 180° opening door with double thermic safety glass window for external control, without temperature variations in the inner chamber
- 3| Air circulation system by natural convection (by density changes)
- 4| Supplied with two height adjustable grid trays

| Code                 | JBD009                     | JBD001   | JBD002   | JBD003   | JBD004   |
|----------------------|----------------------------|----------|----------|----------|----------|
| Capacity             | 18 L                       | 30 L     | 45 L     | 65 L     | 125 L    |
| T range              | ~80 - 250°C                |          |          |          |          |
| Resolution           | 1°C (adjustable at 0.1°C)* |          |          |          |          |
| T fluctuation        | ± 1,0°C                    |          |          |          |          |
| Homogeneity          | 3%                         |          |          |          |          |
| Consumption          | 0.6 kW                     | 0.8 Kw   | 1.0 Kw   | 1.5Kw    | 2.3Kw    |
| Aprox. dimensions cm |                            |          |          |          |          |
| External             | 44x38x55                   | 46x51x69 | 50x55x73 | 55x55x84 | 64x68x91 |
| Internal             | 26x26x26                   | 31x31x31 | 35x35x35 | 40x36x45 | 50x45x55 |
| Aprox. weight        | 20 Kg                      | 39 Kg    | 42 Kg    | 53 Kg    | 58 Kg    |

\* consult

## Drying ovens forced air, series 632 PLUS



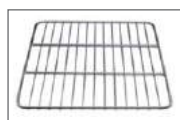
- 1| Same as drying oven series 631 PLUS
- 2| Forced air circulation system with switch air circulation

| Code                 | JBD005                     | JBD006   | JBD007   | JBD008   |
|----------------------|----------------------------|----------|----------|----------|
| Capacity             | 30 L                       | 45 L     | 65 L     | 125 L    |
| T range              | ~80 - 250°C                |          |          |          |
| Resolution           | 1°C (adjustable at 0.1°C)* |          |          |          |
| T fluctuation        | ± 1,0°C                    |          |          |          |
| Homogeneity          | 2%                         |          |          |          |
| Consumption          | 0.8 Kw                     | 1.0 Kw   | 1.5Kw    | 2.3Kw    |
| Aprox. dimensions cm |                            |          |          |          |
| External             | 46x51x69                   | 50x55x73 | 55x55x84 | 64x68x91 |
| Internal             | 31x31x31                   | 35x35x35 | 40x36x45 | 50x45x55 |
| Aprox. weight        | 39 Kg                      | 42 Kg    | 53 Kg    | 58 Kg    |



## JBG - Incubators-drying, accessories

### CHART 1: 'accessories incubators and drying ovens'



| Code   | Description     | Model |     |     |      |
|--------|-----------------|-------|-----|-----|------|
|        |                 | 30L   | 45L | 65L | 125L |
| JBG001 | Tray 28x28 cm   | i     |     |     |      |
| JBG002 | Tray 32x32 cm   |       | i   |     |      |
| JBG003 | Tray 37x42 cm   |       |     | i   |      |
| JBG004 | Tray 47x42 cm   |       |     |     | i    |
| JBG005 | Fastening guide | i     |     |     |      |
| JBG006 | Fastening guide |       | i   | i   |      |
| JBG007 | Fastening guide |       |     |     | i    |

**i** Accessory **included** with the indicated equipment  = Accessory **compatible** with the indicated equipment

## JDB - Water-oil analogical

### For education RS 3.5

- 1| Polycarbonate tank, lacquered metal body and stainless steel heating device
- 2| Adjustable temperature, it has a safety thermostat
- 3| Rack SS (AISI 316) included: 20 tubesx Ø 16 mm.

|                        |                          |
|------------------------|--------------------------|
| Code                   | JDB001                   |
| Model                  | RS 3.5                   |
| Volume                 | 3.5 Liters               |
| Temperature            | Environment +5°C > +90°C |
| Temperature regulation | Analogical               |
| Operation indication   | Yes                      |
| Consumption            | 350 W                    |



page  
[151]

## JDD - Water-oil digital



### Digital water bath

- 1| Inside chamber designed in stainless steel, made of a single piece free of welds, assembled to an external metallic structure covered with epoxy
- 2| Acoustic signal at the end of the selected time, in continuous mode operation or programmed periods
- 3| Acoustic signal that indicates overheating of the bath (> 5°C of the selected temperature)
- 4| Electric draining pump with drainpipe (except model 601/3)
- 5| Removable rack with holes, lid and reduction rings included

|                              |                 |          |          |          |
|------------------------------|-----------------|----------|----------|----------|
| Code                         | JDD001          | JDD002   | JDD003   | JDD004   |
| Modelo                       | 601/3           | 601/5    | 601/12   | 601/19   |
| Capacity                     | 2,5 L           | 5 L      | 12 L     | 19 L     |
| T range                      | RT +5°C – 100°C |          |          |          |
| Resolution                   | 1 °C            |          |          |          |
| Timer                        | 1' - 9 h 59'    |          |          |          |
| Holes                        | 1               | 2        | 4        | 6        |
| Aprox. useful dimensions(cm) | 15x13x10        | 30x15x10 | 32x30x10 | 50x30x10 |
| Aprox. weight                | 4 kg            | 7 kg     | 10 kg    | 7 Kg     |





## JDD - Water-oil digital



## ▶ Digital oil baths



- 1 | Acoustic signal at the end of the selected time, in continuous mode operation or programmed periods
- 2 | Acoustic signal that indicates overheating of the bath ( $>5^{\circ}\text{C}$  of the selected temperature)
- 3 | Removable rack with holes. Lid and reduction rings included

| Code                     | JDD005         | JDD006         |
|--------------------------|----------------|----------------|
| Modelo                   | 602/3          | 602/5          |
| Capacity                 | 3 L            | 5 L            |
| Temperature range        | RT+5°C – 200°C | RT+5°C – 200°C |
| Resolution               | 1°C            | 1°C            |
| Timer                    | 1' - 9 h 59'   | 1' - 9 h 59'   |
| Holes                    | 1              | 2              |
| Aprox. useful dimensions | 17x17x7 cm     | 32x17x7 cm     |
| Aprox. weight            | 4 kg           | 7 kg           |



## JDG - Water-oil accessories



## ▶ Rings for waterbad



- 1 | High resistance to acids and alkalines
- 2 | Thermal conductivity 1.3

| Code   | Density              | Maximum Ø |
|--------|----------------------|-----------|
| JDG001 | 2,4g/cm <sup>3</sup> | 145mm     |



## JDS - Thermoblock



## ▶ Mini 'T'



- 1 | Compact design
- 2 | Simultaneous display of actual and set time and temperature in the LCD screen
- 3 | Several aluminum blocks available (not included) to cover a wide range of tubes (from 0.2 mL to 50 mL) and other type of containers

**NOTE: Blocks not included, consult section: JDV-Thermoblocks accessories**

| Code                          | JDS001                |
|-------------------------------|-----------------------|
| Temperature range             | RT+5- 80°C            |
| Temperature control precision | 0,5°C                 |
| Screen resolution             | 0,1°C                 |
| Heating time (20°C to max. T) | <12 min               |
| Timer                         | 0-999 seg o 0-999 min |
| Aprox. dimensions             | 110 x 150 x 80 mm     |
| Aprox. weight                 | 0,5 Kg                |

## ► JDS - Thermoblock

### ► Modelo 603/3

- 1 | Simultaneous display of actual and set time and temperature in the LED screen
- 2 | Several blocks available (not included) to cover a wide range of tubes (from 0.2 mL to 1.5 mL)

**NOTE:** Blocks not included, consult section:  
JDV-Thermoblocks accessories



|                               |                    |
|-------------------------------|--------------------|
| Code                          | JDS002             |
| Temperature range             | RT+5- 100°C        |
| Temperature control precision | ±0,5°C             |
| Screen resolution             | 0,1°C              |
| Heating time (20°C to max. T) | <25 min            |
| Timer                         | 1 min – 99h 59min  |
| Aprox. dimensions             | 225 x 160 x 197 mm |
| Aprox. weight                 | 3 Kg               |

### ► Model 603/10 and 603/20

- 1 | Simultaneous display of actual and set time and temperature in the LCD screen
- 2 | Several blocks available (not included) to cover a wide range of tubes (from 0.2 mL to 2 mL)

**NOTE:** Blocks not included, consult section:  
JDV-Thermoblocks accessories



|                               |                    |               |
|-------------------------------|--------------------|---------------|
| Code                          | JDS003             | JDS004        |
| Temperature range             | RT+5 a 100°C       | -10°C a 100°C |
| Temperature control precision | ± 0,5 °C           | ± 0,5 °C      |
| Screen resolution             | 0,1 °C             | 0,1 °C        |
| Heating time (20°C to max. T) | <12 min            | <20 min       |
| Cooling time (20°C to -10°C)  | <30 min            |               |
| Timer                         | 1 min – 99h 59min  |               |
| Aprox. dimensions             | 300 x 210 x 180 mm |               |
| Aprox. weight                 | 2,5 Kg             | 4,6 Kg        |

### ► Thermoshaker, model 603/100

- 1 | Simultaneous display of actual and set time, temperature and speed in the LCD screen
- 2 | It can heat and shake simultaneously or work in independent mode
- 3 | Several blocks available (not included) to cover a wide range of tubes (from 0.2 mL to 2 mL)

**NOTE:** Blocks not included, consult section:  
JDV-Thermoblocks accessories



|                               |                    |
|-------------------------------|--------------------|
| Code                          | JDS005             |
| Temperature range             | RT +5 °C - 100°C   |
| Temperature control precision | ±0,5°C             |
| Screen resolution             | 0,1°C              |
| Heating time (20°C to max. T) | <20 min            |
| Shaking speed                 | 200-1500 rpm       |
| Shaking orbit                 | 2 mm               |
| Timer                         | 1 min – 99h 59min  |
| Aprox. dimensions             | 354 x 240 x 170 mm |
| Aprox. weight                 | 8,5 Kg             |



## JDS - Thermoblock



## ► Thermoshaker for microtiter plates



- 1 | Simultaneous display of actual and set time, temperature and speed in the LCD screen
- 2 | It can heat and shake simultaneously or work in independent mode
- 3 | Capacity for 4 standard plates of 96 wells

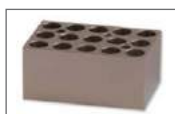
|                               |                    |
|-------------------------------|--------------------|
| Code                          | JDS006             |
| Temperature range             | RT +5- 60°C        |
| Temperature control precision | ±0,5°C             |
| Screen resolution             | 0,1°C              |
| Heating time (20°C to max. T) | <25 min            |
| Shaking speed                 | 100-1200 rpm       |
| Shaking orbit                 | 2 mm               |
| Timer                         | 1 min – 99h 59min  |
| Aprox. dimensions             | 385 x 395 x 190 mm |
| Aprox. weight                 | 9,5 Kg             |



## JDV - Thermoblocks, accessories



## ► CHART 2: 'accessories thermoblocks'



Code - JDV003



Code - JDV005



Code - JDV007



Code - JDV008-011



Code - JDV014



Code - JDV016

| Code   | Capacity                | Model                    |       |        |        |         |
|--------|-------------------------|--------------------------|-------|--------|--------|---------|
|        |                         | Mini 'T'                 | 603/3 | 603/10 | 603/20 | 603/100 |
| JDV001 | 40 tubes of 0,2 ml      | <input type="checkbox"/> |       |        |        |         |
| JDV002 | 24 tubes of 0,5 ml      | <input type="checkbox"/> |       |        |        |         |
| JDV003 | 15 tubes of 1,5 ml      | <input type="checkbox"/> |       |        |        |         |
| JDV004 | 15 tubes of 2 ml        | <input type="checkbox"/> |       |        |        |         |
| JDV005 | 8 cells of 12,5x12,5 mm | <input type="checkbox"/> |       |        |        |         |
| JDV006 | 4 tubes of 15 ml        | <input type="checkbox"/> |       |        |        |         |
| JDV007 | 2 tubes of 50 ml        | <input type="checkbox"/> |       |        |        |         |

| Code   | Capacity                | Model    |       |                          |                          |                          |
|--------|-------------------------|----------|-------|--------------------------|--------------------------|--------------------------|
|        |                         | Mini 'T' | 603/3 | 603/10                   | 603/20                   | 603/100                  |
| JDV008 | 96 microtubes of 0,2 ml |          |       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| JDV009 | 54 microtubes of 0,5 ml |          |       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| JDV010 | 35 microtubes of 1,5 ml |          |       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| JDV011 | 35 microtubes of 2 ml   |          |       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Code   | Capacity            | Model    |                          |        |        |         |
|--------|---------------------|----------|--------------------------|--------|--------|---------|
|        |                     | Mini 'T' | 603/3                    | 603/10 | 603/20 | 603/100 |
| JDV012 | 96 tubes of 0,2 mL  |          | <input type="checkbox"/> |        |        |         |
| JDV013 | 29 tubes of 0,5 mL  |          | <input type="checkbox"/> |        |        |         |
|        | 32 tubes of 1,5 mL  |          | <input type="checkbox"/> |        |        |         |
| JDV014 | 61 tubes of 0,5 mL  |          | <input type="checkbox"/> |        |        |         |
| JDV015 | 41 tubes of 1,5 mL  |          | <input type="checkbox"/> |        |        |         |
| JDV016 | 28 tubes of 12 mm Ø |          | <input type="checkbox"/> |        |        |         |

= Accessory **included** with the indicated equipment ☐ = Accessory **compatible** with the indicated equipment

## JGB - With stirring

### ▶ Analogical with stirring, series 656

- 1 | External structure in painted steel and inside thermal isolation with rock wool, they have heating elements in nickelchrome
- 2 | Maximum stirring speed: 1400 rpm
- 3 | Maximum T: 370°C
- 4 | Supplied with rod, support and stirring magnet

| Code   | Capacity | Internal Ø | Depth |
|--------|----------|------------|-------|
| JGB001 | 100 mL   | 70 mm      | 45 mm |
| JGB002 | 250 mL   | 90 mm      | 55 mm |
| JGB003 | 500 mL   | 105 mm     | 60 mm |
| JGB004 | 1000 mL  | 140 mm     | 85 mm |



### ▶ Digital with stirring, series 658

- 1 | External structure in painted steel and inside thermal isolation with rock wool, they have heating elements in nickelchrome
- 2 | Analogical speed adjustment through potentiometer and digital temperature adjustment with LED screen
- 3 | Maximum stirring speed: 1400 rpm
- 4 | Maximum T: 370°C
- 5 | Supplied with rod, support and stirring magnet

| Code   | Capacity | Internal Ø | Depth  |
|--------|----------|------------|--------|
| JGB005 | 250 mL   | 90 mm      | 55 mm  |
| JGB006 | 500 mL   | 105 mm     | 60 mm  |
| JGB007 | 1000 mL  | 140 mm     | 85 mm  |
| JGB008 | 2000 mL  | 180 mm     | 105 mm |



## JGD - Without stirring

### ▶ Analogical, series 655

- 1 | External structure in painted steel and inside thermal isolation with rock wool, they have heating elements in nickelchrome
- 2 | It has a device to hold rods
- 3 | Maximum T: 370°C

| Code   | Capacity | Internal Ø | Depth  |
|--------|----------|------------|--------|
| JGD001 | 50 mL    | 55 mm      | 40 mm  |
| JGD002 | 100 mL   | 70 mm      | 45 mm  |
| JGD003 | 250 mL   | 90 mm      | 55 mm  |
| JGD004 | 500 mL   | 105 mm     | 60 mm  |
| JGD005 | 1000 mL  | 140 mm     | 85 mm  |
| JGD006 | 2000 mL  | 180 mm     | 105 mm |
| JGD007 | 3000 mL  | 210 mm     | 115 mm |
| JGD008 | 5000 mL  | 240 mm     | 140 mm |



LABORATORY  
SUPPLIERS

SERVICES

TRADEMARKS

STOCK

COMPETITIVITY



 **ENDO**  
plasticware

Own brand of the group Auxilab/ Rogo Sampaic.  
Please know the wide range of laboratory plastic  
products we offer at your disposal. Plastic of quality at  
a competitive price to satisfy your needs





## [K] INDEX OF CONTENTS MEASURING INSTRUMENTS

|                                            |            |
|--------------------------------------------|------------|
| <b>[KB] Balances.....</b>                  | <b>158</b> |
| KBB - Electronic, precision 1/0.1 g .....  | 158        |
| KBC - Electronic, precision 0.01 g .....   | 159        |
| KBD - Electronic, precision 0.001 g .....  | 160        |
| KBF - Analytical, precision 0.0001 g ..... | 161        |
| KBH - Pocket.....                          | 162        |
| KBN - Weighing accessories .....           | 162        |
| KBP - Spring balances .....                | 163        |
| KBQ - Mechanical balances .....            | 163        |
| KBR - Mechanical, set of weights .....     | 164        |
| KBS - Weights E2 .....                     | 165        |
| KBT - Weights F1 .....                     | 166        |
| KBV - Weights F2 .....                     | 166        |
| KBW - Weights M1 .....                     | 167        |
| <b>[KD] pH-meters .....</b>                | <b>167</b> |
| KDB - Testers .....                        | 167        |
| KDD - Laboratory pH-meters .....           | 168        |
| KDG - Electrodes and accessories .....     | 169        |
| KDJ - pH paper .....                       | 170        |
| <b>[KG] Conductivity meters .....</b>      | <b>170</b> |
| KGB - Testers .....                        | 170        |
| KGD - Laboratory conductivity-meters ..... | 171        |
| KGG - Conductivity cells/Accessories ..... | 173        |
| <b>[KJ] Thermometers.....</b>              | <b>173</b> |
| KJB - Solid stem.....                      | 173        |
| KJD - Enclosed scale.....                  | 173        |
| KJJ - With metal probe.....                | 174        |
| KJM - Room temperature.....                | 174        |
| KJP - For refrigerators.....               | 175        |
| KJR - Others .....                         | 176        |

|                                    |            |
|------------------------------------|------------|
| <b>[KK] Time .....</b>             | <b>176</b> |
| KKB - Stopwatches .....            | 176        |
| KKF - Timers .....                 | 177        |
| <b>[KL] Hydrometers .....</b>      | <b>177</b> |
| KLB - Alcoholometers .....         | 177        |
| KLD - Areometers .....             | 177        |
| KLG - Hydrometers .....            | 178        |
| KLJ - Saccharometers.....          | 178        |
| KLL - Mustimeters .....            | 179        |
| KLN - Liquid hydrometers .....     | 179        |
| KLQ - Pycnometers .....            | 179        |
| <b>[KN] Viscosimeters .....</b>    | <b>179</b> |
| KNB- Rotational viscosimeters..... | 179        |
| <b>[KZ] Others.....</b>            | <b>181</b> |
| KZB - Dissolved oxygen .....       | 181        |
| KZD - Multiparameter.....          | 182        |

TRADEMARKS:





## MEASURING INSTRUMENTS BALANCES



**AUTOMATIC INTERNAL ADJUSTMENT:**  
Adjustment through internal calibration weight driven by motor



**ADJUSTING PROGRAM CAL.:**  
An external calibration weight is needed



**DATA INTERFACE RS-232:**  
To connect the equipment with a printer, computer or net



**USB:**  
To connect the equipment with a printer, computer u other peripheral



**PIECE COUNTING:**  
Selectable number of references. To switch the display from piece to weight



**PERCENTAGE DETERMINATION:**  
Deviation determination in % from theoretical value (100%)



**WEIGHTING UNITS:**  
By pushing unit button



**UNDER WEIGHTING:**  
By a hook in the underside of the balance



**POWER SUPPLY BY ACCUMULATOR**



**POWER SUPPLY BY BATTERIES:**  
For operation with batteries, the type of battery is indicated in each device



**CURRENT ADAPTER:**  
110/220V of standard series in the EU



**SUPPLY CABLE:**  
Integrated in the balance 230V/50Hz standard in the EU



**STRAIN GAUGES**



**ELECTROMAGNETIC FORCE COMPENSATION:**  
coil inside a permanent magnet, for more precise weighting



## KBB - Electronical, precision 1-0.1g

## Series 5161



- 1 | High precision load sensor
- 2 | Easy reading wide LCD screen with back light
- 3 | Plastic shell and stainless steel pan
- 4 | Weighting units and piece counting functions
- 5 | Automatic calibration with external weight (see table), weight only included in model KBB004
- 6 | With integrated rechargeable battery



| Code                    | KBB004                                                                        | KBB005           | KBB006           | KBB007           |
|-------------------------|-------------------------------------------------------------------------------|------------------|------------------|------------------|
| Max. capacity (g)       | 1000                                                                          | 2000             | 3000             | 5000             |
| Readability (g)         | 0.1                                                                           | 0.1              | 0.1              | 0.1              |
| Pan size (mm)           | 143x192                                                                       |                  |                  |                  |
| Weighting units         | g, kg, ct, T, TAR, dr, PKT, GN, TMR, gsm, tL, mo, dwt, oz, lb, tL, oz, tLH, % |                  |                  |                  |
| Calibration weight (kg) | 0.5 (included)                                                                | 1 (not included) | 2 (not included) | 2 (not included) |
| Dimensions (mm)         | 280x180x80                                                                    |                  |                  |                  |
| Power supply            | 110-220VAC, 50/60Hz                                                           |                  |                  |                  |

## KBB - Electronical, precision 1-0.1g

### Series 5041



- 1| Very economic, ideal for domestic and educational use
- 2| ABS plastic shell and easy reading digital screen
- 3| Airtight water splash-proof keyboard
- 4| Automatic calibration with external weight (not included)

| Code            | KBB001                               | KBB002 | KBB003* |
|-----------------|--------------------------------------|--------|---------|
| Capacity (g)    | 500                                  | 2000   | 5000    |
| Readability (g) | 0.1                                  | 1.0    | 2.0     |
| Pan size (mm)   | Ø 148                                |        |         |
| Weighting units | g, oz                                |        |         |
| Dimensions (mm) | 170x250x45                           |        |         |
| Power supply    | Adapter AC220V / 4 battery 1.5V (AA) |        |         |

\*Battery and adapter not included (adapter not available)



### Series 5171



- 1| High precision load sensor and overload protection
- 2| Easy reading wide LCD screen with back light
- 3| Plastic shell and stainless steel pan
- 4| Functions of weighting units, piece counting and hook for underside weighting
- 5| Automatic calibration with external weight, weight included only in code KBB008



| Code                    | KBB008                                          | KBB009           | KBB010           | KBB011             |
|-------------------------|-------------------------------------------------|------------------|------------------|--------------------|
| Max. capacity (g)       | 1000                                            | 2000             | 3000             | 5000               |
| Readability (g)         | 0.1                                             | 0.1              | 0.1              | 0.1                |
| Pan size (mm)           | Ø 135                                           | Ø 135            | 155x143          | 155x143            |
| Weighting units         | g, oz, ct, lb                                   |                  |                  |                    |
| Calibration weight (kg) | 0.5 (included)                                  | 1 (not included) | 2 (not included) | 2.5 (not included) |
| Dimensions (mm)         | 265x200x80                                      |                  |                  |                    |
| Power supply            | AC110-220V / 4 battery 1.5V (AA) (not included) |                  |                  |                    |



## KBC - Electronical, precision 0.01 g

### Series 5162



- 1| High precision load sensor. Wide LCD screen with back light
- 2| Plastic shell and stainless steel pan
- 3| Weighting units and piece counting functions
- 4| Automatic calibration with external weight except code KBC004
- 5| With integrated rechargeable battery



| Code                    | KBC001                                                                         | KBC002         | KBC003         | KBC004           |
|-------------------------|--------------------------------------------------------------------------------|----------------|----------------|------------------|
| Max. capacity (g)       | 300                                                                            | 500            | 1000           | 2000             |
| Readability (g)         | 0.01                                                                           | 0.01           | 0.01           | 0.01             |
| Pan size (mm)           | 133x182                                                                        |                |                |                  |
| Weighting units         | g, kg, ct, T, TAR, dr, PKT, GN, TMR, gsm, tL, mo, dwt, oz, lb, tL, ozL, tLH, % |                |                |                  |
| Calibration weight (kg) | 0.2 (included)                                                                 | 0.5 (included) | 0.5 (included) | 1 (not included) |
| Dimensions (mm)         | 280x180x80                                                                     |                |                |                  |
| Power supply            | 110-220VAC, 50/60Hz                                                            |                |                |                  |



▶ KBC - Electronical, precision 0.01 g

▶ Series 5172



- 1 | High precision load sensor and overload protection
- 2 | Easy reading wide LCD screen with back light
- 3 | Plastic shell and stainless steel pan
- 4 | Functions of weighting units, piece counting and hook for underside weighting
- 5 | Automatic calibration with external weight, weight included except in codes KBC008 and KBC009



| Code                    | KBC005                                          | KBC006      | KBC007      | KBC008        | KBC009        |
|-------------------------|-------------------------------------------------|-------------|-------------|---------------|---------------|
| Max. capacity (g)       | 300                                             | 500         | 1000        | 3000          | 5000          |
| Readability (g)         | 0.01                                            | 0.01        | 0.01        | 0.01          | 0.01          |
| Pan size (mm)           | Ø135                                            | Ø135        | Ø135        | 155x143       | 155x143       |
| Weighting units         | g, oz, ct, lb                                   |             |             |               |               |
| Calibration weight (kg) | 0.2 (Incl.)                                     | 0.5 (Incl.) | 0.5 (Incl.) | 2 (not incl.) | 3 (not incl.) |
| Dimensions (mm)         | 265x200x80                                      |             |             |               |               |
| Power supply            | 110-220VAC / 4 battery 1.5V (AA) (not included) |             |             |               |               |

▶ KBD - Electronic, precision 0.001 g



▶ Series 5133



- 1 | Electromagnetic force compensation technology
- 2 | Adjustment of the sensitivity level and weighting speed
- 3 | Overload protection
- 4 | Easy reading wide LCD screen with back light
- 5 | Aluminum shell and stainless steel pan
- 6 | Functions of weighting units, piece counting, percentage and hook for underside weighting
- 7 | Automatic calibration with external weight (included). RS232 and USB ports



| Code                         | KBD001 | KBD002   | KBD003                |
|------------------------------|--------|----------|-----------------------|
| Precision class              |        | Clase II | Clase II      Clase I |
| Max. capacity (g)            |        | 100      | 300      500          |
| Min. capacity (g)            |        | 20       | 20      20            |
| Readability (g)              |        | 0.001    | 0.001      0.001      |
| Scale verification value (g) |        |          | 0.01                  |
| Repeatability (g)            |        |          | ±0.001                |
|                              |        |          | 0 ≤ m ≤ 5000          |
|                              |        |          | 5000 ≤ m ≤ 20000      |
|                              |        |          | 20000 < m             |
| Stabilization time (s)       |        |          | ≤5                    |
| Pan size (mm)                |        |          | Ø 90                  |
| Weighting units              |        |          | g, mg, ct, oz         |
| Calibration weight (kg)      | 0,1    | 0,2      | 0,2                   |
| Total dimensions (mm)        |        |          | 340x215x350           |
| Power supply                 |        |          | 110-220VAC, 50/60Hz   |

▶ KBD - Electronic, precision 0.001 g



▶ Series 5173

- 1| High precision load sensor and overload protection
- 2| Plastic shell and stainless steel pan
- 3| Easy reading wide LCD screen with back light
- 4| Functions of weighting units, piece counting and hook for underside weighting
- 5| Automatic calibration with external weight (included)
- 6| RS232 and USB ports

|                         |                    |                |
|-------------------------|--------------------|----------------|
| Code                    | KBD004             | KBD005         |
| Max. capacity (g)       | 100                | 300            |
| Readability (g)         | 0.001              | 0.001          |
| Repeatability (g)       | ±0.002             | ±0.002         |
| Linearity (g)           | ±0.002             | ±0.002         |
| Error (g)               | ±0.002             | ±0.002         |
| Stabilization time (s)  | 1-1.5              |                |
| Pan size (mm)           | 90                 |                |
| Weighting units         | g, ct, oz, lb, ozt |                |
| Calibration weight (kg) | 0.05 (included)    | 0.2 (included) |
| Total dimensions (mm)   | 295x192x280        |                |
| Power supply            | 220-240VAC/50Hz    |                |



▶ KBF - Analytical, precision 0.0001 g



▶ Series 5134

- 1| Electromagnetic force compensation technology
- 2| Adjustment of the sensitivity level and weighting speed
- 3| Overload protection
- 4| Easy reading wide LCD screen with back light
- 5| Aluminum shell and stainless steel pan
- 6| Functions of weighting units, piece counting, percentage and hook for underside weighting
- 7| Automatic calibration with external weight (included) or internal depending on model
- 8| RS232 and USB ports

|                                      |                     |         |
|--------------------------------------|---------------------|---------|
| Series 5134 EX; External calibration | KBF001              | KBF003  |
| Serie 5134 INT; Internal calibration | KBF002              | KBF004  |
| Precision class                      | Clase I             | Clase I |
| Max. capacity (g)                    | 120                 | 220     |
| Min. capacity (g)                    | 10                  | 10      |
| Readability (g)                      | 0.0001              | 0.0001  |
| Scale verification value (g)         | 0.001               |         |
| Repeatability (g)                    | ±0.0002             |         |
|                                      | ±0.5e               |         |
|                                      | 0 ≤ m ≤ 50000       |         |
|                                      | ±1.0e               |         |
|                                      | 50000 < m ≤ 200000  |         |
|                                      | ±1.5e               |         |
|                                      | 20000 < m           |         |
| Stabilization time (s)               | ≤ 8                 |         |
| Pan size (mm)                        | Ø 80                |         |
| Weighting units                      | g, mg, ct, oz       |         |
| Total dimensions (mm)                | 340x215x350         |         |
| Power supply                         | 110-220VAC, 50/60Hz |         |



Calibration certificate ENAC

|             |                                      |
|-------------|--------------------------------------|
| Code        | KBF005                               |
| Description | Certificate ENAC analytical balances |





## KBH - Pocket balances



## Series 5043



- 1| Compact and resistant design with protective lid
- 2| Touch screen with back light for easy reading
- 3| Stainless steel weighting pan
- 4| Functions of weighting units, piece counting and tare with direct access button
- 5| Calibration in one point (calibration weight not included)

| Code               | KBH001                  | KBH002 | KBH003 |
|--------------------|-------------------------|--------|--------|
| Capacity (g)       | 100                     | 200    | 500    |
| Readability (g)    | 0.01                    | 0.01   | 0.1    |
| Pan size (mm)      | 60x60                   |        |        |
| Weighting units    | g, ct, dwt, oz, ozt     |        |        |
| Calibration weight | 0,1 kg                  | 0.2 kg | -      |
| Dimensions (mm)    | 70x115x20               |        |        |
| Power supply       | 2 batteries 1.5 V (AAA) |        |        |



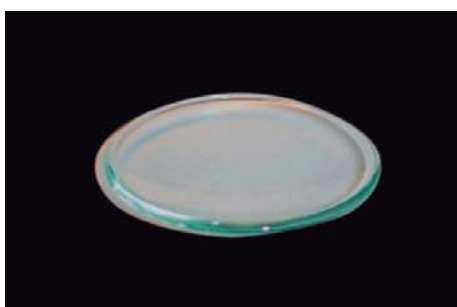
## KBN - Weighting accessories

## Watch glass ground edge



| Code   | Diameter (mm) | Batch |
|--------|---------------|-------|
| KBN001 | 45            | 10    |
| KBN002 | 50            | 10    |
| KBN003 | 60            | 10    |
| KBN004 | 70            | 10    |
| KBN005 | 80            | 10    |
| KBN006 | 90            | 10    |
| KBN007 | 100           | 10    |
| KBN008 | 120           | 10    |
| KBN009 | 150           | 10    |
| KBN010 | 180           | 10    |

## Watch glass burnt edge



| Code   | Diameter (mm) | Batch |
|--------|---------------|-------|
| KBN011 | 40            | 10    |
| KBN012 | 50            | 10    |
| KBN013 | 60            | 10    |
| KBN014 | 70            | 10    |
| KBN015 | 80            | 10    |
| KBN016 | 100           | 10    |
| KBN017 | 120           | 10    |
| KBN018 | 140           | 10    |
| KBN019 | 160           | 10    |

## Weighing boat



- 1| In porcelain. Without handle

| Code   | Description    | Dim. (mm) | Batch |
|--------|----------------|-----------|-------|
| KBN020 | Without handle | 37/17 mm  | 10    |
| KBN021 | Without handle | 53/23 mm  | 10    |
| KBN022 | Without handle | 64/29 mm  | 10    |



## KBN - Weighing accessories

### ▶ Weighing paper

| Code   | Dimensions (mm) | Pack  |
|--------|-----------------|-------|
| KBN048 | 100X100 mm      | P/100 |

## KBP - Dynamometers



### ▶ Plastic

- 1 | Calculation of mechanic type forces. Double scale in grams and newtons
- 2 | Keeps precision with time

| Code   | Range       | Sensitivity | Batch |
|--------|-------------|-------------|-------|
| KBP003 | 250g / 2.5N | 5g / 0.05N  | 10    |
| KBP004 | 500g / 5N   | 10g / 0.1N  | 10    |
| KBP005 | 1000g / 10N | 20g / 0.2N  | 10    |
| KBP006 | 2000g / 20N | 50g / 0.5N  | 10    |
| KBP007 | 3000g / 30N | 50g / 0.5N  | 10    |
| KBP008 | 5000g / 50N | 100g / 1N   | 10    |



## KBQ - Mechanical



### ▶ Roverbal series 5001

- 1 | Made of furnace painted steel with treated steel blades and agate bearings
- 2 | Frontal scale for 5g to 50g additions (depending on model)
- 3 | Weights set included

| Code               | KBQ003   | KBQ004   |
|--------------------|----------|----------|
| Capacity (g)       | 1000     | 2000     |
| Readability (g)    | 1        | 2        |
| Scale range (g)    | 0-10     | *        |
| Scale division (g) | 1        | -        |
| Pan size (mm)      | Ø 134    | Ø 170    |
| Dimensions (cm)    | 35x14x20 | 40x18x30 |

\* without frontal scale



### ▶ Equal-arm balance series 5004

- 1 | Weighting system in steel with blades of treated steel and blocking system
- 2 | Detachable for storage (wooden box included)
- 3 | Complete set of weights included

| Code            | KBQ005     |
|-----------------|------------|
| Capacity (g)    | 100        |
| Sensitivity (g) | 0.02       |
| Pan size (mm)   | Ø 80       |
| Dimensions (mm) | 300x160x80 |





## KBQ - Mechanical



► 4 beams



- 1| Cast light metal, with agate bearings and blades of tempered steel
- 2| It has 4 beams with sliding weights of 100g, 10g, 1g and 0.1g
- 3| With platform to make hydrostatic weightings

|                 |                         |
|-----------------|-------------------------|
| Code            | KBQ006                  |
| Capacity (g)    | 311                     |
| Sensitivity (g) | 0.01                    |
| 1ª beam         | 1g divided every 0.01g  |
| 2ª beam         | 10g divided every 1g    |
| 3ª beam         | 100g divided every 10g  |
| 4ª beam         | 200g divided every 100g |
| Pan size (mm)   | Ø100                    |
| Dimensions (mm) | 420x180x360             |

► 3 beams



- 1| Cast light metal, with agate bearings and tempered steel blades
- 2| It has 3 beams with sliding weights
- 3| It incorporates a support for additional weights supplied with the equipment:
  - 2 weights of 295g that increase the capacity in 1000g
  - 1 weight of 147.5g that increase the capacity in 500g

|                 |                                      |
|-----------------|--------------------------------------|
| Code            | KBQ007                               |
| Capacity (g)    | 610    2610, with additional weights |
| Sensitivity (g) | 0.1                                  |
| 1ª beam         | 10g divided every 0.1g               |
| 2ª beam         | 500g divided every 100g              |
| 3ª beam         | 100g divided every 10g               |
| Pan size (mm)   | Ø10                                  |
| Dimensions (mm) | 420x180x360                          |



## KBR - Mechanical, sets of weights



- 1| Made of A3 steel class M2
- 2| Usually used with mechanical balances
- 3| Supplied in a case



|             |                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------|
| Code        | KBR001                                                                                                    |
| Description | Set of weights of 200g                                                                                    |
| Composed of | 1 weight of 100g<br>1 weight of 50g<br>2 weights of 20g<br>1 weight of 10g<br>1 weight of 5g<br>1 forceps |



|             |                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------|
| Code        | KBR002                                                                                                       |
| Description | Set of weights of 500g                                                                                       |
| Composed of | 1 weight of 200g<br>2 weights of 100g<br>1 weight of 50g<br>2 weights of 20g<br>1 weight of 10g<br>1 forceps |



## KBR - Mechanical, sets of weights



|             |                                                                                                                     |
|-------------|---------------------------------------------------------------------------------------------------------------------|
| Code        | KBR003                                                                                                              |
| Description | Set of weights of 1000g                                                                                             |
| Composed of | 1 weight of 500g<br>1 weight of 200g<br>2 weights of 100g<br>1 weight of 50g<br>2 weights of 20g<br>1 weight of 10g |



|             |                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Code        | KBR004                                                                                                                                  |
| Description | Set of weights of 2000g                                                                                                                 |
| Composed of | 1 weight of 1kg<br>1 weight of 500g<br>1 weights of 200g<br>2 weights of 100g<br>1 weight of 50g<br>2 weights of 20g<br>1 weight of 10g |



## KBS - Weights E2



- 1| Control and high precision calibration weights for high resolution balances class I with a maximum resolution higher than 100000 d
- 2| Made of antimagnetic stainless steel
- 3| Supplied in individual storage boxes

| Code   | Weight (nominal value)                    | Tolerance (mg) |
|--------|-------------------------------------------|----------------|
| KBS002 | 1 g                                       | ± 0.03         |
| KBS003 | 2 g                                       | ± 0.04         |
| KBS004 | 5 g                                       | ± 0.05         |
| KBS005 | 10 g                                      | ± 0.06         |
| KBS006 | 20 g                                      | ± 0.08         |
| KBS007 | 50 g                                      | ± 0.10         |
| KBS008 | 100 g                                     | ± 0.15         |
| KBS009 | 200 g                                     | ± 0.30         |
| KBS010 | 500 g                                     | ± 0.75         |
| KBS011 | 1 Kg                                      | ± 1.50         |
| KBS012 | 2 Kg                                      | ± 3.00         |
| KBS013 | 5 Kg                                      | ± 7.50         |
| KBS014 | 10 Kg                                     | ± 15.00        |
| KBS015 | 20 Kg                                     | ± 30.00        |
| KBS001 | Set of 12 fractions from 500 mg to 1 mg** | -----          |

\*\* Set of fractions: 1x1mg, 2x2mg, 1x5mg, 1x10mg, 2x20mg, 1x50mg, 1x100mg, 2x200mg and 1x500mg.



## Calibration certificate ENAC

|             |                                                               |
|-------------|---------------------------------------------------------------|
| Code        | KBS016                                                        |
| Description | Certificate of masses ENAC E2, for weights E2 of 1 mg to 500g |



## KBT- Weights F1



- 1 | High precision weights for the control calibration and adjustment of analytical balances class I, with a maximum resolution higher than 100000 d
- 2 | Made of stainless steel
- 3 | Supplied in individual storage boxes



| Code   | Weight (nominal value)                    | Tolerance (mg) |
|--------|-------------------------------------------|----------------|
| KBT002 | 1 g                                       | ± 0.10         |
| KBT003 | 2 g                                       | ± 0.12         |
| KBT004 | 5 g                                       | ± 0.15         |
| KBT005 | 10 g                                      | ± 0.20         |
| KBT006 | 20 g                                      | ± 0.25         |
| KBT007 | 50 g                                      | ± 0.30         |
| KBT008 | 100 g                                     | ± 0.50         |
| KBT009 | 200 g                                     | ± 1.00         |
| KBT010 | 500 g                                     | ± 2.50         |
| KBT011 | 1 Kg                                      | ± 5.00         |
| KBT012 | 2 Kg                                      | ± 10.00        |
| KBT013 | 5 Kg                                      | ± 25.00        |
| KBT014 | 10 Kg                                     | ± 50.00        |
| KBT015 | 20 Kg                                     | ± 100.00       |
| KBT001 | Set of 12 fractions from 500 mg to 1 mg** | -----          |

\*\* Set of fractions: 1x1mg, 2x2mg, 1x5mg, 1x10mg, 2x20mg, 1x50mg, 1x100mg, 2x200mg a 1x500mg.

## Calibration certificate ENAC

|             |                                                  |
|-------------|--------------------------------------------------|
| Code        | KBT016                                           |
| Description | Certificate of masses ENAC F1 from 1 mg to 10 kg |



## KBV- Weights F2



- 1 | High precision weights suitable for high precision balances class II, with a maximum resolution up to 50000 d aprox.
- 2 | Made of stainless steel
- 3 | Supplied in individual storage boxes



| Code   | Weight (nominal value)                    | Tolerance (mg) |
|--------|-------------------------------------------|----------------|
| KBV002 | 1 g                                       | ± 0.3          |
| KBV003 | 2 g                                       | ± 0.4          |
| KBV004 | 5 g                                       | ± 0.5          |
| KBV005 | 10 g                                      | ± 0.6          |
| KBV006 | 20 g                                      | ± 0.8          |
| KBV007 | 50 g                                      | ± 1.0          |
| KBV008 | 100 g                                     | ± 1.5          |
| KBV009 | 200 g                                     | ± 3.0          |
| KBV010 | 500 g                                     | ± 7.5          |
| KBV011 | 1 Kg                                      | ± 15.0         |
| KBV012 | 2 Kg                                      | ± 30.0         |
| KBV013 | 5 Kg                                      | ± 75.0         |
| KBV014 | 10 Kg                                     | ± 150.0        |
| KBV015 | 20 Kg                                     | ± 300.0        |
| KBV001 | Set of 12 fractions from 500 mg to 1 mg** | -----          |

\*\* Set of fractions: 1x1mg, 2x2mg, 1x5mg, 1x10mg, 2x20mg, 1x50mg, 1x100mg, 2x200mg and 1x500mg.

## Calibration certificate ENAC

|             |                                                   |
|-------------|---------------------------------------------------|
| Code        | KBV016                                            |
| Description | Certificate of masses ENAC F2, from 1 mg to 10 kg |

## KBW- Weights M1



- 1 | Precision weights for commercial and industrial balances class III, with a maximum resolution up to 1000 d
- 2 | Made of A3 steel
- 3 | Supplied in individual storage boxes



| Code   | Weight (nominal value)               | Tolerance (mg) |
|--------|--------------------------------------|----------------|
| KBW001 | Juego 12 fracciones de 500mg a 1mg** | -----          |
| KBW002 | 1 g                                  | ± 1.0          |
| KBW003 | 2 g                                  | ± 1.2          |
| KBW004 | 5 g                                  | ± 1.5          |
| KBW005 | 10 g                                 | ± 2.0          |
| KBW006 | 20 g                                 | ± 2.5          |
| KBW007 | 50 g                                 | ± 3.0          |
| KBW008 | 100 g                                | ± 5.0          |
| KBW009 | 200 g                                | ± 10.0         |
| KBW010 | 500 g                                | ± 25.0         |
| KBW011 | 1 Kg                                 | ± 50.0         |
| KBW012 | 2 Kg                                 | ± 100.0        |
| KBW013 | 5 Kg                                 | ± 250.0        |
| KBW015 | 10 Kg                                | ± 500.0        |
| KBW017 | 20 Kg                                | ± 1000.0       |

\*\* Set of fractions: 1x1mg, 2x2mg, 1x5mg, 1x10mg, 2x20mg, 1x50mg, 1x100mg, 2x200mg and 1x500mg.

### Calibration certificate ENAC

|             |                                                   |
|-------------|---------------------------------------------------|
| Code        | KBW019                                            |
| Description | Certificate of masses ENAC M1, from 1 mg to 10 kg |

## Weights M1, block

- 1 | According to standard OIML-R111
- 2 | Made of painted cast iron
- 3 | Density 7.02 g/cm<sup>3</sup>.

| Code   | Weight (nominal value) | Tolerance (mg) |
|--------|------------------------|----------------|
| KBW014 | 5 Kg                   | ±250           |
| KBW016 | 10 Kg                  | ±500           |
| KBW018 | 20 Kg                  | ±1000          |



## KDB - Pocket testers



### pH-tester

- 1 | Ideal for practical lessons in the lab and field
- 2 | Integrated fixed electrode
- 3 | With two point calibration

|                          |                    |          |
|--------------------------|--------------------|----------|
| Code                     | KDB001             | KDB002   |
| Range                    | 0-14 pH            | 0-14 pH  |
| Resolution               | 0.1 pH             | 0.1 pH   |
| Precision                | ± 0.1 pH           | ± 0.1 pH |
| ATC                      | No                 | 5-50 °C  |
| Platform dimensions (mm) | 150x29x15          |          |
| Power supply             | 4 batteries x 1.5V |          |





## KDD - Laboratory pH-testers

## Portable pH-tester model 902/4



- 1 | Liquid crystal display and damp-proof membrane keypad
- 2 | Supplied with a glass combined electrode with BNC connector
- 3 | Automatic temperature compensation by manual data input

|                  |                             |
|------------------|-----------------------------|
| Code             | KDD001                      |
| pH range         | 0.0 a 14.0 pH               |
| mV range         | 0 - $\pm 1400$ mV           |
| pH-mV resolution | 0.01 pH - 1 mV              |
| pH-mV precision  | $\pm 0.03$ pH - $\pm 0.2\%$ |
| ATC range        | 0-60 °C (Manual)            |
| Calibration      | 1 or 2 points               |
| Power supply     | 2 batteries 5V              |

## Digital pH-testers models 903 and 907



REF. KDD002



Mod. KDD006



- 1 | Large easy-to-read back lit LCD display
- 2 | Measuring parameters of pH at compensated temperature and electrical potential (mV)
- 3 | 1 or 2 point calibration with automatic detection of standard solution
- 4 | Automatic temperature compensation through the keypad (903) or probe (907)
- 5 | Suitable to use with ion selective electrodes
- 6 | Built-in electrode support
- 7 | RS232 port and data transmission software (907)

|                 |                                      |                                                                                                    |
|-----------------|--------------------------------------|----------------------------------------------------------------------------------------------------|
| Code            | KDD002                               | KDD006                                                                                             |
| Model           | 903                                  | 907                                                                                                |
| Measuring range |                                      |                                                                                                    |
| pH              | 0-14.0 pH                            | -2.00-18.00 pH                                                                                     |
| mV              | $\pm 1999$ mV                        | $\pm 1999$ mV                                                                                      |
| T               | ---                                  | 0/100 °C (probe included)                                                                          |
| Resolution      | 0.01 pH - 1 mV                       | 0.01 pH - 1 mV - 0.1 °C                                                                            |
| Precision       |                                      |                                                                                                    |
| pH              | $\pm 0.02$ pH $\pm 1$ bit            | $\pm 0.02$ pH $\pm 1$ bit                                                                          |
| mV              | $\pm 1$ mV $\pm 1$ bit               | $\pm 1$ mV $\pm 1$ bit                                                                             |
| T               | ---                                  | $\pm 0.5^\circ\text{C} \pm 1$ bit (0.0-60.0°C)<br>$\pm 1.0^\circ\text{C} \pm 1$ bit (60.0-100.0°C) |
| ATC range       | 0-60 °C ( $\pm 0.01$ pH)             | 0-100 °C ( $\pm 0.01$ pH)                                                                          |
| Stability       | $\pm 0.01$ pH $\pm 1$ bit/3 h        | $\pm 0.01$ pH $\pm 1$ bit/3 h                                                                      |
| Dimensiones     | 290x210x95 mm                        | 290x200x70 mm                                                                                      |
| Power supply    | CA (220 $\pm$ 22)V / (50 $\pm$ 1) Hz | 220VAC/9V                                                                                          |

## Soil pH and moisture meters



Mod. KDD004

- 1 | Portable and resistant for use in agriculture and gardening
- 2 | Built-in sensor in the conical end
- 3 | Do not need power supply

|                    |              |
|--------------------|--------------|
| Code               | KDD004       |
| pH range           | 3-8 pH       |
| Moisture range (%) | 1-8 (10-80%) |
| pH resolution - %  | 0.2 pH - 10% |
| Probe              | Fixed (30cm) |
| Dimensions (mm)    | 410x50       |



## KDD - Laboratory pH-testers



### ► pH-ppm-temperature monitor

- 1 | Monitor for the continuous measuring of pH, TDS and temperature (T)
- 2 | It includes combined electrode of pH and conductivity cell with integrated temperature probe
- 3 | With automatic temperature compensation (ATC) in the 5-50°C range

|              |                           |            |           |                         |
|--------------|---------------------------|------------|-----------|-------------------------|
| Code         | KDD005                    |            |           |                         |
| Parameter    | Range                     | Resolution | Precision | Calibration             |
| pH           | 0.00-14.00 pH             | 0.01 pH    | ± 0.10 pH | 2 points (7.00/4.01 pH) |
| TDS          | 0-9990 ppm                | 10 ppm     | ± 2% ppm  | 1 point (1382 ppm)      |
| T            | 5-35 °C                   | 1 °C       | ± 1°C     | 1 point (25°C/77 °F)    |
| Dimensions   | 85x165x30 mm              |            |           |                         |
| Power supply | Adapter CA, 9V (included) |            |           |                         |



## KDG - Electrodes and accessories



### ► Electrode stand

- 1 | Arm articulated in 3 points and rotatable 360°
- 2 | Painted steel base of great stability
- 3 | Holder with 1 central hole and 5 lateral slots

|              |                    |
|--------------|--------------------|
| Code         | KDG001             |
| Nº x holes Ø | 1 x 6mm - 5 x 14mm |



### ► pH buffers

- 1 | Powder preparation to obtain pH buffer solutions (acid, basic, neutral)
- 2 | A correlation Temperature/pH table is included

|           |                         |
|-----------|-------------------------|
| Code      | KDG002                  |
| pH buffer | Acid, basic and neutral |
| Precision | ± 0.01 pH               |



### ► pH electrodes

- 1 | Measuring pH range 0 to 14
- 2 | Available with glass or plastic body
- 3 | Options of refillable (liquid electrolyte) or non-refillable (gel electrolyte)
- 4 | Fixed cable with BNC connector

#### Plastic body

|                |                     |
|----------------|---------------------|
| Code           | KDG003              |
| Working T (°C) | 5-60                |
| Diaphragm      | Fiber               |
| Ø x L (mm)     | 12x165              |
| Membrane       | Spherical           |
| Electrolyte    | Gel, non-refillable |

#### Glass body

|                |                   |
|----------------|-------------------|
| Code           | KDG005            |
| Working T (°C) | 5-60              |
| Diaphragm      | Ceramic           |
| Ø x L (mm)     | 12x148            |
| Membrane       | Spherical         |
| Electrolyte    | Refillable liquid |





## KDG - Electrodes and accesories



## Power supply

- 1 | For pH-meter 907 and conductivity meter 910/9
- 2 | It includes plug suitable for Europe, Great Britain and USA

|             |                            |
|-------------|----------------------------|
| Code        | KDG011                     |
| Description | Power supply 100-240VAC/9V |



## KDJ - pH paper



## Universal



- 1 | With approximate pH value indicator colour scale

| Code   | pH range | Scale | Format         |
|--------|----------|-------|----------------|
| KDJ002 | 1-10     | 1     | Box 200 strips |
| KDJ003 | 0-10     | 1     | Roll 5 meters  |
| KDJ004 | 1-12     | 1     | Box 200 strips |
| KDJ005 | 1-14     | 1     | Box 200 strips |
| KDJ007 | 1-14     | 1     | Box 80 strips  |
| KDJ006 | 1-14     | 1     | Roll 5 meters  |
| KDJ001 | 1-4      | 1     | Box 200 strips |
| KDJ009 | 9-14     | 1     | Box 200 strips |

## Indicator



- 1 | The colour change of the paper indicates the pH range of the solution
- 2 | Available in box of 200 strips

| Code   | Description             | Colour change                 |
|--------|-------------------------|-------------------------------|
| KDJ016 | Red litmus              | basic pH (blue)               |
| KDJ019 | Blue litmus             | acid pH (red)                 |
| KDJ020 | Neutral litmus (violet) | acid pH (red)-basic pH (blue) |



## KGB - Pocket testers



## TDS-meter



- 1 | Splash-proof shell
- 2 | They present automatic temperature compensation (ATC)

| Code         | KGB003                          | KGB004        | KGB005            | KGB007    |
|--------------|---------------------------------|---------------|-------------------|-----------|
| Range        | 0-1999 $\mu$ S/cm               | 0-19.99 mS/cm | 0-1999 ppm (mg/L) | 0-10.0 EC |
| Resolution   | 1 $\mu$ S/cm                    | 0.01 mS/cm    | 1 ppm (mg/L)      | 0.1 EC    |
| Precision    | $\pm$ 2% (full scale)           |               |                   |           |
| ATC range    | 0-50 $^{\circ}$ C               |               |                   |           |
| Calibration  | In 1 point by manual adjustment |               |                   |           |
| Dimensions   | 150x32x16 mm                    |               |                   |           |
| Power supply | 4 batteries x 1.5V              |               |                   |           |

## KGB - Pocket testers



### Mini TDS-meter

- 1| Compact and reliable instruments recommended for education
- 2| They provide readings of conductivity and dissolved solids (TDS)
- 3| They present automatic temperature compensation (ATC)

|              |                                 |                   |
|--------------|---------------------------------|-------------------|
| Code         | KGB008                          | KGB010            |
| Range        | 0-100 cF                        | 0-1999 ppm (mg/L) |
| Resolution   | 1 cF                            | 1 ppm (mg/L)      |
| Precision    | $\pm 2\%$ (full scale)          |                   |
| ATC range    | 0-50 °C                         |                   |
| Calibration  | In 1 point by manual adjustment |                   |
| Dimensions   | 150x32x16 mm                    |                   |
| Power supply | 4 battery x 1.5V                |                   |



## KGD - Laboratory conductivity meters



### Portable conductivity meter model 910/3

- 1| Conductivity parameter determination
- 2| Back-lit LCD display and splash- and moisture-proof membrane keypad
- 3| Automatic temperature compensation (ATC) through keypad data input
- 4| Cell constant adjustable for values 0.01, 1 and 10 cm<sup>-1</sup>
- 5| Supplied with platinum conductivity cell (K=1 cm<sup>-1</sup>)

|                            |                                                                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Code                       | KGD001                                                                                                                                 |
| Conductivity               |                                                                                                                                        |
| Range                      | 0.00-19.99 $\mu\text{S/cm}$ ; 20.0-199.9 $\mu\text{S/cm}$ ; 200-1999 $\mu\text{S/cm}$ ; 2000-19000 $\mu\text{S/cm}$ ; 20.0-100.0 mS/cm |
| Resolution                 | 0.01 $\mu\text{S/cm}$ ; 0.1 $\mu\text{S/cm}$ ; 1 $\mu\text{S/cm}$ ; 1 $\mu\text{S/cm}$ ; 0.1 mS/cm                                     |
| Precision ( $\pm 1$ digit) | $\pm 1.5\%$                                                                                                                            |
| ATC range                  | 15-35 °C (data inputting through keypad)                                                                                               |
| T coefficient              | 2 % / °C (fixed)                                                                                                                       |
| Reference T                | 25 °C                                                                                                                                  |
| Dimensions                 | 170x80x35 mm                                                                                                                           |
| Power supply               | 2 batteries 1.5V, type AA                                                                                                              |





## KGD - Laboratory conductivity meters



### ▶ Portable conductivity meter model 910/5



- 1| Conductivity, total dissolved solids (TDS) and salinity parameters determination
- 2| Back-lit LCD display and splash- and moisture-proof membrane keypad
- 3| Automatic temperature compensation (CAT) through built-in T probe
- 4| Cell constant adjustable for values 0.01, 0.1, 1, 5 and 10 cm<sup>-1</sup>
- 5| Supplied with platinum conductivity cell (K=1 cm<sup>-1</sup>)
- 6| RS232 port for PC or printer connection
- 7| Supplied with storage and transport case

|                                     |                                                                                        |
|-------------------------------------|----------------------------------------------------------------------------------------|
| Code                                | KGD002                                                                                 |
| <b>Conductivity</b>                 |                                                                                        |
| Range                               | 0.00-19.99 μS/cm; 20.0-199.9 μS/cm; 200-1999 μS/cm; 2.00-19.99 mS/cm; 20.0-199.9 mS/cm |
| Resolution                          | 0.01 μS/cm; 0.1 μS/cm; 1 μS/cm; 0.01 μS/cm; 0.1 mS/cm                                  |
| Precision (± 1 dígito)              | ± 1.5 %                                                                                |
| <b>Total dissolved solids (TDS)</b> |                                                                                        |
| Range                               | 0.00-10.00 mg/L; 10.0-100.0 mg/L; 100-1000 mg/L; 1.00-10.00 g/L; 10.00-19.99 g/L       |
| Resolution                          | 0.01 mg/L; 0.1 mg/L; 1 mg/L; 0.01 g/L; 0.01 g/L                                        |
| Precision (± 1 digit)               | ± 1.5 %                                                                                |
| <b>Salinity</b>                     |                                                                                        |
| Range                               | 0.00-8.00 %                                                                            |
| Resolution                          | 0.01 %                                                                                 |
| Precision (± 1 dígito)              | ± 0.3 %                                                                                |
| T range                             | 0.0-40.0 °C                                                                            |
| T coefficient                       | 0-4 %/°C (default 2 %/°C)                                                              |
| Reference T                         | 25 °C (conductivity and TDS) and 18 °C (salinity)                                      |
| Factor conversión TDS               | 0.40-1.00 (default 0.50)                                                               |
| Dimensions                          | 210x100x45 mm                                                                          |
| Power supply                        | 4 batteries 1.5V (AA)                                                                  |

### ▶ Laboratory conductivity meter 910/9



- 1| Determination of conductivity, resistivity, TDS, salinity and temperature
- 2| Large back-lit LCD display and membrane keypad
- 3| Automatic temperature compensation (ATC) through keypad or built-in T probe
- 4| Cell constant adjustable for values 0.01, 0.1, 1, 5 and 10 cm<sup>-1</sup>
- 5| Supplied with platinum conductivity cell (K=1 cm<sup>-1</sup>)
- 6| Use under GLP rules
- 7| USB output for computer connection through communication software

|                                  |                                                                    |
|----------------------------------|--------------------------------------------------------------------|
| Code                             | KGD003                                                             |
| <b>Measuring range</b>           |                                                                    |
| Conductivity                     | 0.000 μS/cm – 199.9mS/cm (automatic change of range and frequency) |
| Resistivity                      | 5.00 Ω•cm – 20.00 MΩ•cm                                            |
| TDS                              | 0.000 mg/L – 99.9 g/L                                              |
| Salinity                         | (0.00-8.00) %                                                      |
| Temperature                      | (-5.0 – 110.0) °C                                                  |
| <b>Electrical unit precision</b> |                                                                    |
| Conductivity                     | ±0.5% FS                                                           |
| Resistivity                      | ±0.5% FS                                                           |
| TDS                              | ±0.5% FS                                                           |
| Salinity                         | ± 0.1%                                                             |
| Temperature                      | ±0.2°C                                                             |
| T compensation                   | Auto/Manual: -5.0 – 50.0 °C                                        |
| Stability                        | ±0.3%FS/3h                                                         |
| T coefficient                    | Adjustable                                                         |
| GLP rules                        | Yes                                                                |
| Output                           | USB port                                                           |
| Working conditions               | 0-40 °C, ≤ 85% HR                                                  |
| Power supply                     | Adapter 100-240 V / 9 V DC                                         |
| Dimensiones                      | 280x215x92 mm                                                      |

## KGG - Conductivity cells



- 1 | Body glass resistant to corrosion and organic solvents
- 2 | With 2 platinum electrodes
- 3 | BNC connector with 60cm length fixed cable

|        |                             |                                     |
|--------|-----------------------------|-------------------------------------|
| KGG003 | Cell conductivity K=1       |                                     |
|        | Constant                    | Measuring range                     |
|        | $1 \pm 0.2 \text{ cm}^{-1}$ | $1 \mu\text{S} - 100 \text{ mS/cm}$ |



## KJB - Stem thermometers



### Yellow back

- 1 | Brown graduation resistant to physic-chemical agents
- 2 | Filled with coloured non contaminant and-non harmful organic liquid
- 3 | Glass ring to hang the thermometer, except code KJB017
- 4 | Supplied in an individual plastic protection case

| Code    | Range                              | Divisions | Length | Batch |
|---------|------------------------------------|-----------|--------|-------|
| KJB003  | -10 / 50 °C                        | 0.5 °C    | 30 cm  | 10    |
| KJB004  | -10 / 110 °C                       | 0.5 °C    | 30 cm  | 10    |
| KJB010  | -10 / 50 °C                        | 1 °C      | 30 cm  | 10    |
| KJB011  | -10 / 110 °C                       | 1 °C      | 30 cm  | 10    |
| KJB012  | -10 / 150 °C                       | 1 °C      | 30 cm  | 10    |
| KJB013  | -20 / 150 °C                       | 2 °C      | 30 cm  | 10    |
| KJB014  | -10 / 250 °C                       | 2 °C      | 30 cm  | -     |
| KJB017* | -10 / 50 °C                        | 0.2 °C    | 55 cm  | 10    |
| KJB018  | -10 / 50 °C                        | 0.1 °C    | 55 cm  | 10    |
| KJB019  | -10 / 110 °C                       | 0.2 °C    | 55 cm  | 10    |
| KJB020  | -10 / 110 °C                       | 0.1 °C    | 55 cm  | 10    |
| KJB021  | -50 / 50 °C                        | 1 °C      | 30 cm  | 10    |
| KJB022  | -100 / 50 °C                       | 1 °C      | 30 cm  | 10    |
| KJB016  | Stem thermometers certificate ENAC |           | -      |       |

\* without glass ring



page  
[173]

## KJD - Enclosed scale



### Organic liquid

- 1 | Graduated internal scale in black colour
- 2 | Filled with coloured non contaminant and-non harmful organic liquid
- 3 | Glass ring to hang the thermometer
- 4 | Supplied in an individual plastic protection case

| Code   | Range      | Divisions | Length | Batch |
|--------|------------|-----------|--------|-------|
| KJD001 | -10/50 °C  | 0.5 °C    | 30 cm  | 10    |
| KJD002 | -10/110 °C | 0.5 °C    | 30 cm  | 10    |
| KJD005 | -10/50 °C  | 1 °C      | 30 cm  | 10    |
| KJD006 | -10/110 °C | 1 °C      | 30 cm  | 10    |
| KJD007 | -10/150 °C | 1 °C      | 30 cm  | 10    |
| KJD008 | -10/200 °C | 2 °C      | 30 cm  | 10    |
| KJD009 | -10/250 °C | 2 °C      | 30 cm  | -     |





## KJJ - With metallic probe



## Digital for ovens



- 1| LCD display for an easy and fast data reading
- 2| Temperature measuring in °C or °F
- 3| Pre-set temperature alarm. Stopwatch up to 20 hours

|              |                       |
|--------------|-----------------------|
| Code         | KJJ001                |
| Functions    | Stopwatch, alarm      |
| Range        | 50/300 °C - 122/572°F |
| Resolution   | 1 °C - 1 °F           |
| Probe        | 60 mm, with 1 m cable |
| Power supply | 1 battery 1.5V (AAA)  |

## Digital



- 1| Temperature measuring in solids and semisolids (food, soils, etc)
- 2| LCD display for an easy and fast data reading
- 3| Penetration probe in stainless steel fixed or with cable

|              |                          |
|--------------|--------------------------|
| Code         | KJJ002                   |
| Functions    | Clock, stopwatch, alarm  |
| Range        | 0/200 °C - 32/392 °F     |
| Resolution   | 1 °C - 1 °F              |
| Probe        | 170 mm, con cable de 1 m |
| Power supply | 1 battery 1.5V (AAA)     |



## KJM - Environment



## Digital



Mod. KJM001

- 1| Temperature (T) and relative humidity (HR) register
- 2| With clock function and maximum and minimum register
- 3| Code KJM001 with outdoors/indoors probe

| Code         | KJM001                  | KJM002                  |
|--------------|-------------------------|-------------------------|
| T range      | -50/70 °C - 58/158 °F   | -50/70 °C - 58/158 °F   |
| HT range     | 5-95 %                  | 10%-99%                 |
| Resolution   | 0.1 °C - 0.1 °F - 1 %HR | 0.1 °C - 0.1 °F - 1 %HR |
| Precision    | ±1 °C - ±2 °F - ±5 %HR  | ±1 °C - ±2 °F - ±5 %HR  |
| Probe        | 3 m                     | No                      |
| Power supply | 1 battery 1.5V (AAA)    | 1 battery 1.5V (AAA)    |
| Batch        | 25                      | -                       |

## Wood or plastic thermometers



| Code   | Range                   | Material | Resolution   | Dimensiones |
|--------|-------------------------|----------|--------------|-------------|
| KJM003 | -30/50 °C<br>-20/120 °F | Wood     | 1 °C<br>2 °F | 200x35 mm   |
| KJM006 | -40/50 °C<br>-40/120 °F | Plastic  | 1 °C<br>2 °F | 400x65 mm   |
| KJM015 | -15/50 °C<br>8/120 °F   | Plastic  | 1<br>2 °F    | 200x45 mm   |



## KJM - Environment



### ► For relative humidity (Psychrometers)

- 1 | Made of plastic with protective top for outdoors
- 2 | With double dry-bulb and wet-bulb thermometers
- 3 | Incorporated correlation table to extrapolate readings of relative humidity

| Code   | Range     | Resolution | Dimensiones |
|--------|-----------|------------|-------------|
| KJM014 | -10/50 °C | 1 °C       | 300x75 mm   |



## KJP - For refrigerators



### ► Low temperatures

- 1 | Filled with coloured organic liquid

| Code   | Description | Range     | Divi. | Batch |
|--------|-------------|-----------|-------|-------|
| KJP001 | Rod         | -40/40 °C | 1 °C  | 10    |
| KJP004 | With hook   | -40/40 °C | 1 °C  | 50    |
| KJP005 | With hook   | -40/50 °C | 1 °C  | 10    |



### ► Dual digital

- 1 | Register of environment and refrigerator or freezer temperatures
- 2 | Control zone with sound and light alarm
- 3 | Encapsulated probe with suction cap and 1 m cable

|              |                                               |
|--------------|-----------------------------------------------|
| Code         | KJP002                                        |
| T range      | -50/70 °C   -58/158 °F                        |
| Resolution   | 0.1 °C   0.1 °F                               |
| Control zone | Freezer (-23/-9.5 °C) - Refrigerator (2/8 °C) |
| Probe        | 1 m                                           |
| Dimensions   | 135x25x15 mm                                  |
| Power supply | 1 battery 1.5V (AAA)                          |
| Batch        | 25                                            |



## KJR - Others



### ► Stem thermometer with ring



- 1 | With ring to hang the thermometer
- 2 | Non-contaminant and non-harmful coloured organic liquid

| Code   | Range   | Resolution |
|--------|---------|------------|
| KJR002 | 0/50 °C | 1 °C       |



## KJR - Others

► Thermometer for wine



- 1 | Wood head that allows holding the thermometer in the bottle neck
- 2 | Non-contaminant and non-harmful coloured organic liquid

| Code   | Range   | Resolution |
|--------|---------|------------|
| KJR003 | 0/40 °C | 1 °C       |

► Thermometer for soil



- 1 | Inserted in a protective aluminum shell
- 2 | Non-contaminant and non-harmful coloured organic liquid

| Code   | Range                  | Resolution |
|--------|------------------------|------------|
| KJR006 | -10/110 °C - 20/220 °F | 1 °C       |



## KKB - Stopwatches

► Digital



- 1 | With stopwatch, clock and calendar functions
- 2 | Supplied with cord

|              |                                              |
|--------------|----------------------------------------------|
| Code         | KKB001                                       |
| Clock        | 12/24 h                                      |
| Stopwatch    | 23 h 59 min 59 s                             |
| Resolution   | 1/100 s ( $\leq 30$ min) / 1 s ( $> 30$ min) |
| Power supply | Lithium battery                              |

► Digital for competitions



- 1 | Register of elapsed time, split time and first and second place finish times
- 2 | It has clock function and programmable alarm

|            |                                        |
|------------|----------------------------------------|
| Code       | KKB005                                 |
| Clock      | 12/24 h                                |
| Calendar   | Date and day of the week               |
| Stopwatch  | 23 h 59 min 59 s                       |
| Resolution | 1/100 s ( $\leq 1$ h)   1 s ( $> 1$ h) |

## KKF - Clocks

### Mechanical timers

- 1 | Portable and desktop timers
- 2 | With alarm when the selected time is over
- 3 | Resolution: 1 minute

| Code   | Max. time | Type                | Dimensiones |
|--------|-----------|---------------------|-------------|
| KKF001 | 60 min    | Desktop/wall/magnet | 70x70x40 mm |



### Pocket



- 1 | Ideal for the laboratory thanks to its small size
- 2 | With clamp for coat pocket, magnet for metallic surfaces and ring for vertical position

|              |                                                |
|--------------|------------------------------------------------|
| Code         | KKF002                                         |
| Clock        | Mode 12/24 h                                   |
| Temporizador | Máx. 23 h 59 min 59 s, with 1 min finish alarm |
| Memory       | 1                                              |
| Stopwatch    | 23 h 59 min 59 s                               |
| Dimensiones  | 52x67x25 mm                                    |
| Power supply | 1 button battery                               |



## KLB - Alcohometers



- 1 | Glass body. In Gay Lussac (% alcohol volume) and Cartier scales, calibrated at 20°C
- 2 | Presented in individual case

| Code   | Range (%V)                     | Div.     | Length | Diameter | Batch |
|--------|--------------------------------|----------|--------|----------|-------|
| KLB004 | 0-10 %                         | 1/10     | 330 mm | 31 mm    | -     |
| KLB005 | 10-20 %                        | 1/10     | 330 mm | 31 mm    | -     |
| KLB006 | 20-30 %                        | 1/10     | 380 mm | 31 mm    | -     |
| KLB007 | 30-40 %                        | 1/10     | 315 mm | 30 mm    | -     |
| KLB008 | 40-50 %                        | 1/10     | 315 mm | 30 mm    | -     |
| KLB009 | 50-60 %                        | 1/10     | 315 mm | 28 mm    | -     |
| KLB010 | 60-70 %                        | 1/10     | 380 mm | 25 mm    | -     |
| KLB011 | 70-80 %                        | 1/10     | 380 mm | 25 mm    | -     |
| KLB012 | 80-90 %                        | 1/10     | 380 mm | 22 mm    | -     |
| KLB013 | 90-100 %                       | 1/10     | 380 mm | 23 mm    | -     |
| KLB001 | 0-30 %                         | 1        | 210 mm | 23 mm    | 10    |
| KLB002 | 0-50 %                         | 1        | 260 mm | 16 mm    | 10    |
| KLB003 | 50-100 %                       | 1        | 280 mm | 16 mm    | 10    |
| KLB014 | 0-100 % vol.<br>10-44 °Cartier | 1<br>1/2 | 290 mm | 15 mm    | 10    |



## KLD - Baumé hydrometer



- 1 | Glass body. Presented in individual case
- 2 | In Baumé scale (1°Be is equivalent to 25g of sugar dissolved in 1L of water), calibrated at 20°C.

| Code   | Range (°Be) | Res. | Length | Diameter | Batch |
|--------|-------------|------|--------|----------|-------|
| KLD001 | 0-10        | 1/10 | 310 mm | 20 mm    | 12    |
| KLD005 | 10-20       | 1/10 | 310 mm | 18 mm    | 10    |
| KLD007 | 20-30       | 1/10 | 310 mm | 18 mm    | 10    |
| KLD008 | 30-40       | 1/10 | 310 mm | 18 mm    | 10    |
| KLD009 | 40-50       | 1/10 | 310 mm | 17 mm    | 10    |
| KLD010 | 50-60       | 1/10 | 310 mm | 16 mm    | 10    |
| KLD011 | 60-70       | 1/10 | 310 mm | 15 mm    | 10    |
| KLD002 | 0-30        | 1    | 250 mm | 13 mm    | 10    |
| KLD003 | 0-50        | 1    | 240 mm | 10 mm    | 10    |
| KLD004 | 0-70        | 1    | 290 mm | 12 mm    | 10    |
| KLD006 | 5-15        | 1/10 | 310 mm | 20 mm    | 10    |





## KLK - Hydrometers



## Hydrometers



- 1 | Glass body. Presented in individual case
- 2 | In density scale ( $\text{kg/m}^3$ ), calibrated at 20°C

| Code   | Range ( $\text{Kg/m}^3$ ) | Res. | L (total)xØ | Batch |
|--------|---------------------------|------|-------------|-------|
| KLK001 | 600-700                   | 1    | 310x16 mm   | 12    |
| KLK002 | 700-800                   | 1    | 310x16 mm   | 10    |
| KLK003 | 800-900                   | 1    | 310x17 mm   | 12    |
| KLK004 | 900-1000                  | 1    | 310x17 mm   | 12    |
| KLK005 | 1000-1100                 | 1    | 310x17 mm   | 12    |
| KLK006 | 1100-1200                 | 1    | 310x17 mm   | 12    |
| KLK007 | 1200-1300                 | 1    | 310x18 mm   | 12    |
| KLK008 | 1300-1400                 | 1    | 310x18 mm   | 12    |
| KLK009 | 1400-1500                 | 1    | 310x18 mm   | 10    |
| KLK010 | 1500-1600                 | 1    | 310x19 mm   | 10    |
| KLK011 | 1600-1700                 | 1    | 310x20 mm   | 10    |
| KLK012 | 1700-1800                 | 1    | 310x20 mm   | 10    |

## Quevenne lactometer



- 1 | Indicated for determining milk density in the dairy industry
- 2 | Glass body with scale in lacto-densimetric degrees (15° are equivalent to 1015g/mL)
- 3 | Calibrated at 20°C and available option with thermometer for deviation correction
- 4 | Presented in individual case

| Code   | Range | Res. | L (total)xØ | Thermometer  | Batch |
|--------|-------|------|-------------|--------------|-------|
| KLK014 | 15-40 | 1    | 215x19 mm   | No           | 10    |
| KLK015 | 15-40 | 1    | 290x3 mm    | Yes (0-40°C) | 10    |

## Battery hydrometer



- 1 | It allows checking the electrolyte state of a battery
- 2 | Resistant glass body, with rubber bulb and suction tube
- 3 | Calibrated at 20°C

| Code   | Range                     | N° divisions |
|--------|---------------------------|--------------|
| KLK020 | 1100-1300 $\text{Kg/m}^3$ | 5            |



## KLJ - Saccharometers



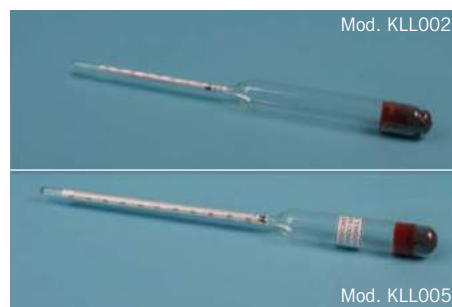
- 1 | Indicated for determining the sugar concentration of a solution
- 2 | In Brix scale (1°Brix is equivalent to 1g of saccharose in 100 g of solution (1% in weight))
- 3 | Calibrated at 20°C and available option with thermometer (0-50°C)
- 4 | Presented in individual case
- 5 | All saccharometers have thermometer except code KLJ001

| Code   | Range (°Bx) | Res. | L (total)xØ | Batch |
|--------|-------------|------|-------------|-------|
| KLJ001 | 0-30        | 1    | 280x15 mm   | -     |
| KLJ002 | 0-10        | 1/10 | 375x25 mm   | 10    |
| KLJ003 | 10-20       | 1/10 | 375x25 mm   | 10    |
| KLJ004 | 20-30       | 1/10 | 375x25 mm   | 10    |
| KLJ005 | 30-40       | 1/10 | 375x25 mm   | -     |
| KLJ006 | 40-50       | 1/10 | 375x25 mm   | -     |
| KLJ007 | 50-60       | 1/10 | 375x25 mm   | -     |

## KLL - Mustimeters



| Code                   | Range                | Res. | L (total)xØ | Batch |
|------------------------|----------------------|------|-------------|-------|
| KLL001                 | 0-30 °Be             | 1/2  | 290x17 mm   | 10    |
| KLL005                 | 0-20 °Be             | 1/5  | 260x20 mm   | 10    |
|                        | 4-22 % alc. probable | 1/5  |             |       |
| KLL003                 | 4-18 % alc. probable | 1/2  | 310x19 mm   | 10    |
|                        | 980-1130 Kg/m3       | 1    |             |       |
| <b>Wine hydrometer</b> |                      |      |             |       |
| KLL002                 | -5/30 % vol. alcohol | 1/1  | 245x20 mm   | 10    |

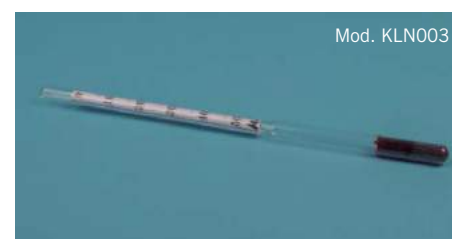


## KLN - Liquid hydrometers



1 | Glass body. Presented in individual case

| Code   | For   | Range    | Res. | L (total)xØ | Batch |
|--------|-------|----------|------|-------------|-------|
| KLN003 | Syrup | 0-50 °Be | 1    | 250x11 mm   | 8     |
| KLN006 | Lye   | 0-45 °Be | 1/2  | 255x12 mm   | 8     |
| KLN007 | Salt  | 0-35 °Be | 1/2  | 210x13 mm   | 10    |



## KLQ - Pycnometers

► For solids, sand, gravel



| Code   | Capacity | Tolerance | ØxH (mm) |
|--------|----------|-----------|----------|
| KLQ004 | 50 mL    | ± 3 mL    | 25 x 135 |



## KNB - Rotational viscosimeters



► Rotational analogic, model 801

- 1 | Analogic rotational viscometer, robust, efficient and of easy use
- 2 | Determination of low dynamic viscosities (motor oil, paints, varnishes, etc)
- 3 | It has 4 rotation speeds and is equipped with 4 spindles
- 4 | Solid column with pinion/rack system to adjust the head height
- 5 | Large and stable support base with adjustable legs and bubble level in the head
- 6 | Supplied in metallic case

|                 |                         |
|-----------------|-------------------------|
| Code            | KNB001                  |
| Measuring range | 10-100000 mPa·s (cp)    |
| Precision       | ± 1%                    |
| Spindles        | n° 1, 2, 3, 4           |
| Motor speed     | 6/12/30/60 rpm          |
| Tolerance       | ± 5% (Newtonian fluids) |
| Power supply    | 220V, 50 Hz             |





## KNB - Rotational viscosimeters

## ▶ Rotational digital, model 802



- 1 | Large and easy use panel board with LCD display and membrane keypad
- 2 | Determination of low dynamic viscosities (motor oil, paints, sauces, etc.)
- 3 | It has 4 rotational speeds and it is equipped with 4 spindles
- 4 | Solid column with pinion/rack system to adjust the head height
- 5 | Large and stable support base with adjustable legs and bubble level in the head
- 6 | It has RS232 port for connection with PC or printer
- 7 | It is supplied in metallic case. It includes temperature probe

|                 |                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------|
| Code            | KNB002                                                                                                           |
| Measuring range | 1-100000 mPa.s (cp)*                                                                                             |
| Speed           | 6/12/30/60 rpm                                                                                                   |
| Precision       | ±1% (Newtonian fluids)                                                                                           |
| Resolution      | 0.01 ( $\mu \leq 10\text{cp}$ ) / 0.1 ( $10\text{cp} < \mu < 10000\text{cp}$ ) / 1 ( $\mu \geq 10000\text{cp}$ ) |
| Repeatability   | 0.5%                                                                                                             |
| Linearity       | ±1% (full range)                                                                                                 |
| Spindles        | n° 1, 2, 3, 4                                                                                                    |
| Dimensiones     | 95x130x155 mm (without support)                                                                                  |
| Power supply    | 100-240V / 50-60Hz                                                                                               |

\* for low viscosities the n°0 spindle is needed (not included)

## ▶ Rotational digital, model 807



- 1 | Large and easy use panel board with LCD display and membrane keypad
- 2 | Determination of medium (syrops, creams, fats...) and high (melted polymers, asphaltic and rubber compounds...) dynamic viscosities
- 3 | Equipped with 4 spindles and temperature probe
- 4 | Solid column with pinion/rack system to adjust the head height
- 5 | Large and stable support base with adjustable legs and bubble level in the head
- 6 | It has RS232 port for connection with PC or printer
- 7 | Supplied in metallic case

|                 |                                                                                                                    |                                 |
|-----------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Code            | KNB003                                                                                                             | KNB004                          |
| Model           | 807/1                                                                                                              | 807/2                           |
| Measuring range | 1-6x10 <sup>5</sup> mPa•s (cP)+                                                                                    | 1-6x10 <sup>6</sup> mPa•s (cP)* |
| Speed           | 1-60 rpm                                                                                                           | 0.1-99.9 rpm                    |
| Precision       | ±1%                                                                                                                | ±1%                             |
| Resolution      | 0.01 ( $\mu \leq 10\text{cp}$ )<br>0.1 ( $10\text{cp} < \mu < 10000\text{cp}$ )<br>1 ( $\mu \geq 10000\text{cp}$ ) |                                 |
| Repeatability   | 0.5%                                                                                                               |                                 |
| Linearity       | ±1% (full range)                                                                                                   |                                 |
| Spindles        | n° 1, 2, 3, 4                                                                                                      |                                 |
| Power supply    | 100-240V / 50-60Hz                                                                                                 |                                 |

\* for low viscosities the n°0 spindle is needed (not included)



## KZB - Dissolved oxygen



- 1 | Desktop equipment to measure DO and temperature simultaneously
- 2 | For the control of human consumption waters, urban and industrial sewage waters, industries (fish farms, beverages, canned food) or water circuits in heating systems or boilers among many other applications
- 3 | It includes a polarographic electrode with built-in temperature probe
- 4 | With automatic temperature compensation (ATC) in the range 0-40°C
- 5 | Calibration at 0% and 100% DO saturation, atmospheric pressure and salinity
- 6 | It has a RS-232 port for connection with PC or printer



|                                      |                                                                                                                     |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Code                                 | KZB001                                                                                                              |
| Measuring range                      |                                                                                                                     |
| DO concentration                     | 0.00-19.99 mg/L                                                                                                     |
| DO saturation                        | 0.0-200.0%                                                                                                          |
| Temperature                          | -5.0/105.0° C                                                                                                       |
| Precision of electric unit           |                                                                                                                     |
| DO concentration                     | ± 0.10 mg/L                                                                                                         |
| DO saturation                        | ± 1% (full range)                                                                                                   |
| Temperature                          | ± 0.3° C                                                                                                            |
| Precision of meter                   |                                                                                                                     |
| Concentración OD                     | ± 0.30 mg/L (if  calibration T-measuring T  < ± 3.0° C)<br>± 0.50 mg/L (if  calibration T-measuring T  < ± 15.0° C) |
| DO saturation                        | ± 5% (if  calibration T-measuring T  < ± 3.0° C)<br>± 10% (if  calibration T-measuring T  < ± 15.0° C)              |
| Temperature                          | ± 0.5° C ± 1 digit (between 0.0-60.0° C)<br>± 1° C ± 1 digit (out of range 0.0-60.0° C)                             |
| Stability                            | ± 20 mg/L/1h                                                                                                        |
| Reproducibility                      | 0.20 mg/L                                                                                                           |
| TAC range                            | 0.0-40.0° C (T de solución)                                                                                         |
| Remaining current                    | ≤ 0.10 mg/L                                                                                                         |
| Answering time                       | ≤ 45 s (90% answer at 20.0° C)                                                                                      |
| Salinity correction range            | 0.0-40.0 g/L                                                                                                        |
| Atmospheric pressure correction time | 77.0-110.0 kPa                                                                                                      |
| Environmental conditions             | 5.0-35.0° C; ≤ 80% HR                                                                                               |
| Memory                               | 50 data groups                                                                                                      |
| Dimensions                           | 290x200x70 mm                                                                                                       |
| Power supply                         | DC 9 V, 300 mA                                                                                                      |

## Portable dissolved oxygen analyzer 912/8

- 1 | Portable equipment to measure DO and temperature simultaneously in the field
- 2 | For the control of human consumption waters, urban and industrial sewage waters, industries (fish farms, beverages, canned food) or water circuits in heating systems or boilers among many other applications
- 3 | Polycarbonate control panel and large back-lit LCD display
- 4 | It includes a polarographic electrode with built-in temperature probe
- 5 | With automatic temperature compensation (ATC) in the range 0-40°C
- 6 | Calibration at 0% and 100% DO saturation, atmospheric pressure and salinity
- 7 | It has a RS-232 port for connection with PC or printer (TP.16), software included
- 8 | IP65 protection degree



|                  |                             |
|------------------|-----------------------------|
| Code             | KZB002                      |
| Range            |                             |
| DO concentration | 0.00-19.99 mg/L ± 0.50 mg/L |
| % DO saturation  | 0.0-199.9 % ± 10.0 %        |
| Temperature      | 0.0-40.0 °C ± 0.5 °C        |
| Stability        | ± 0.20 mg/L/1h              |
| Reproducibility  | 0.20 mg/L                   |
| TAC range        | 0.0-40.0 °C                 |
| Memory           | 100 data groups             |
| Dimensions       | 210x86x50 mm                |
| Power supply     | 4 battery (AA)              |



## KZD - Multiparametric

## Multiparametric analyzer 917



- 1| Portable equipment to measure multiple parameters simultaneously in water samples
- 2| For the control of human consumption waters, urban and industrial sewage waters, industries (fish farms, beverages, canned food) or water circuits in heating systems or boilers among many other applications
- 3| Polycarbonate control panel and large back-lit LCD display
- 4| Supplied with pH electrodes (combined), conductivity (Pt), DO and T probe
- 5| With automatic temperature compensation (ATC) in all the measuring range
- 6| Calibration function in one, two or multiple points (up to 5 points)
- 7| USB interface for PC connection
- 8| IP65 protection degree

|                  |                                        |                     |
|------------------|----------------------------------------|---------------------|
| Code             | KZD001                                 |                     |
| Parameters       | Range                                  | Precision           |
| Potential (mV)   | -1999.99/+1999.99 mV±                  | 0.03 % (full range) |
| pH/pX (ion)      | -2.000 - 19.999 pH/pX                  | ±0.002 pX ± 1 bit   |
| Conductivity     | 0.000 µS/cm - 199.9 mS/cm              | ±0.5 % (FS) ± 1 bit |
| Resistivity      | 5.00 Ω·cm - 20 MΩ·cm                   |                     |
| TDS / TDS        | 0.000 mg/l - 19.99 g/L                 | ±0.5 % (FS) ± 1 bit |
| Salinity         | 0.0 - 8.00 %                           | ±0.1 % ± 1 bit      |
| DO concentración | 0.00 - 19.99 mg/L                      | ±0.10 mg/L          |
| DO saturación    | 0.0 - 199.9 %                          | ±1.0 %              |
| Temperature      | -5.0 / +135.0 °C                       | ±0.3 °C ± 1 bit     |
| Memory           | 200 data groups                        |                     |
| Dimensions       | 210×86×50 mm                           |                     |
| Power supply     | 9VDC, 800mA, (4 AA batteries included) |                     |

## Accessories multiparametric analyzer 917

| Code   | Description                                  |
|--------|----------------------------------------------|
| KZD002 | pH electrode f/multiparametric analyzer      |
| KZD003 | Conductivity cell f/multiparametric analyzer |
| KZD004 | DO electrode f/multiparametric analyzer      |



## [L] INDEX OF CONTENTS STIRRING

|                                            |            |
|--------------------------------------------|------------|
| <b>[LB] Magnetic stirrers .....</b>        | <b>185</b> |
| LBB - With heating, analogical.....        | 185        |
| LBD - With heating, digital .....          | 186        |
| LBG - Without heating, analogical .....    | 187        |
| LBJ - Without heating, digital.....        | 189        |
| LBM - Accessories .....                    | 189        |
| <b>[LD] Magnets and rods.....</b>          | <b>191</b> |
| LDB - Cylindrical magnets .....            | 191        |
| LDD - Oval magnets .....                   | 191        |
| LDG - Octogonal magnets.....               | 191        |
| LDP - Other magnets .....                  | 192        |
| LDR - Stirring rods.....                   | 192        |
| <b>[LG] Vibrating mixers .....</b>         | <b>192</b> |
| LGB - For tubes.....                       | 192        |
| LGD - For microplates .....                | 194        |
| LGG - Accessories.....                     | 194        |
| <b>[LJ] Multidimensional shakers.....</b>  | <b>195</b> |
| LJB - Oscillating.....                     | 195        |
| LJD - Roll and tilt .....                  | 196        |
| LJG - Rotative .....                       | 197        |
| LJJ - Rotative, accessories .....          | 197        |
| LJL - 3D.....                              | 198        |
| LJN - Orbital .....                        | 199        |
| LJQ - Linear .....                         | 200        |
| LJS - Orbital and linear, accessories..... | 201        |
| <b>[LL] Overhead stirrers .....</b>        | <b>202</b> |
| LLB - Stirring heads.....                  | 202        |
| LLF - Accessories .....                    | 203        |

TRADEMARKS:



► MAGNETIC STIRRERS COMPARATIVE CHART: digital and analogic models without heating

|              | Nahita-BLue 682<br>LBG002        | MINI<br>LBG011 | RSLAB 11 NCA<br>LBG010 | RSLAB 1F<br>LBG004              | RSLAB 1 NC<br>LBG003 | RSLAB 11 NCD<br>LBJ001 |
|--------------|----------------------------------|----------------|------------------------|---------------------------------|----------------------|------------------------|
| Model        | Analogic                         | Analogic       | Analogic               | Analogic                        | Analogic             | Digital                |
| Speed        | 100/1600 rpm                     | 300-200 rpm    | 0-1500 rpm             | 15/1500 rpm                     | 0/1500 rpm           | 100/1500 rpm           |
| Maximum vol. | 5 L                              | 1,5 L          | 3 L                    | 0,8 L                           | 20 L                 | 3 L                    |
| Plate        | Metallic with<br>ceramic coating | PET            | Plastic                | Resistant<br>to chemical agents | Ceramic              | Plastic                |
| Plate dim.   | 190x190 mm                       | 120 mm         | 135 mm                 | 90 mm                           | 135 mm               | 135 mm                 |
| Dimensions   | 300x210x126 mm                   | 150x145x50 mm  | 260x150x80 mm          | 175x120x15 mm                   | 280x160x85 mm        | 160x150x80 mm          |

► MAGNETIC STIRRERS COMPARATIVE CHART: digital and analogic with heating

|              | RSLAB 1C<br>LBB003 | NAHITA 690/1<br>LBB001 | Nahita-blue 692<br>LBB002 | Nahita-blue 692/1<br>LBD001 |
|--------------|--------------------|------------------------|---------------------------|-----------------------------|
| Model        | Analogic           | Analogic               | Analogic                  | Digital                     |
| Display      | -                  | -                      | -                         | LED                         |
| Speed        | 0/1500 rpm         | 0/2000 rpm             | 16000 rpm                 | 1600 rpm                    |
| Maximum vol. | 20 L               | 2 L                    | 5 L                       | 5 L                         |
| Temp. range  | RT 340 °C          | RT 180 °C              | RT 380 °C                 | RT 350 °C                   |
| Safety temp. | 350 °C             | -                      | -                         | -                           |
| Plate        | Ceramic            | Metallic, EPOXI coated | Metallic, ceramic coated  | Metallic, ceramic coated    |
| Plate dim.   | 135 mm             | 120x120 mm             | 190x190 mm                | 190x190 mm                  |
| Dimensions   | 280x160x85 mm      | 200x120x90 mm          | 330x195x125 mm            | 300x210x126 mm              |
| Probe        | Not admitted       | Not admitted           | Not admitted              | PT 1000 ( )                 |

|              | RSLAB 11C<br>LBD005 | RSLAB 2C<br>LBD002 | RSLAB 3C<br>LBD003 | RSLAB 4C<br>LBD004 |
|--------------|---------------------|--------------------|--------------------|--------------------|
| Model        | Digital             | Digital            | Digital            | Digital            |
| Display      | LED                 | LCD                | LED                | LCD                |
| Speed        | 100/1500 rpm        | 100/1500 rpm       | 0/1500 rpm         | 100/1500 rpm       |
| Maximum vol. | 3 L                 | 20 L               | 10 L               | 20 L               |
| Temp. range  | RT 280 °C           | RT 340 °C          | RT 550 °C          | RT 550 °C          |
| Safety temp. | 320 °C              | 360 °C             | 580 °C             | 580 °C             |
| Plate        | Stainless steel     | Ceramic            | Glass ceramic      | Glass ceramic      |
| Plate dim.   | 135 mm              | 135 mm             | 184x184 mm         | 184x184 mm         |
| Dimensions   | 260x150x80 mm       | 260x160x85 mm      | 360x215x112 mm     | 360x215x112 mm     |
| Probe        | PT 1000 (included)  | PT 1000 (included) | PT 1000 (included) | PT 1000 (included) |

## ▶ LBB - Analogic with heating

### ▶ Analogic with heating Nahita 690/1



- 1| Supplied with rod and clamp and Teflon coated magnet.  
Lateral on and off switch

|                         |                       |
|-------------------------|-----------------------|
| Code                    | LBB001                |
| Speed range             | 0-2000 rpm            |
| Maximum stirring volume | 2 L                   |
| Temperature range       | RT-180°C              |
| Plate material          | Metallic epoxy coated |
| Plate size              | 120x120 mm            |
| Aprox. dimensions       | 200x120x90 mm         |
| Aprox. weight           | 2 Kg                  |



### ▶ With heating Nahita-Blue 692



- 1| Supplied with rod and clamp for holding electrode or thermometer, and stirring magnet
- 2| Speed and heating indicator pilot lights

|                         |                               |
|-------------------------|-------------------------------|
| Code                    | LBB002                        |
| Maximum speed           | 1600 rpm                      |
| Maximum stirring volume | 5 L                           |
| Temperature range       | RT-380°C                      |
| Plate material          | Metallic with ceramic coating |
| Plate size              | 190 x 190 mm                  |
| Aprox. dimensions       | 330 x 195 x 125 mm            |
| Aprox. weight           | 4,2 Kg                        |



### ▶ With heating RSLAB-1C



- 1| Analogic speed and time control, constant speed even with load changes.  
Brushless motor free of maintenance
- 2| Heating stops automatically when temperature is over 350°C
- 3| It doesn't admit temperature probe

|                         |                   |
|-------------------------|-------------------|
| Code                    | LBB003            |
| Speed range             | 0-1500 rpm        |
| Maximum stirring volume | 20 L              |
| Temperature range       | RT-340°C          |
| Plate material          | Ceramic           |
| Plate diameter          | 135 mm            |
| Aprox. dimensions       | 280 x 160 x 85 mm |
| Aprox. weight           | 2,8 Kg            |



### ▶ With heating RSLAB-5C, 10 posts



- 1| Internal control of stirring uniformity depending on the number of posts used.  
Brushless motor free of maintenance
- 2| Analogic speed and time control, ensures a constant speed while changing sample

|                     |                  |
|---------------------|------------------|
| Code                | LBB004           |
| Speed range         | 0-1100 rpm       |
| Maximum volume/post | 0,4 L            |
| Temperature range   | RT-120°C         |
| Safety temperature  | 140°C            |
| Plate material      | Silicone coating |
| Plate dimensions    | 182x450 mm       |
| Aprox. dimensions   | 182x 552x65 mm   |
| Aprox. weight       | 3,2 Kg           |





## LBD - Digital with heating

▶ With heating 692/1



- 1 | Overheating protection
- 2 | It is supplied with rod and clamp for holding an electrode or thermometer, temperature probe and stirring magnet

|                         |                               |
|-------------------------|-------------------------------|
| Code                    | LBD001                        |
| Display                 | Back-lit LCD                  |
| Maximum speed           | 1600 rpm                      |
| Maximum stirring volume | 10 L                          |
| Temperature range       | RT-350°C                      |
| Plate material          | Metallic with ceramic coating |
| Plate size              | 190 x 190 mm                  |
| Aprox. dimensions       | 300 x 210 x 126 mm            |
| Aprox. weight           | 4,2 Kg                        |

▶ With heating RSLAB 2C



- 1 | With hermetic protection ring for the body of the equipment
- 2 | It includes temperature probe PT1000, it doesn't include support kit
- 3 | PC control through RS232 interface. Special software StirPC free upon request

|                         |                   |
|-------------------------|-------------------|
| Code                    | LBD002            |
| Display                 | LCD               |
| Speed range             | 100-1500 rpm      |
| Maximum stirring volume | 20 L              |
| Temperature range       | RT-340°C          |
| Safety temperature      | 360°C             |
| Plate material          | Ceramic           |
| Plate diameter          | 135 mm            |
| Aprox. dimensions       | 280 x 160 x 85 mm |
| Aprox. weight           | 2,8 Kg            |

▶ With heating RSLAB 3C



- 1 | It includes temperature probe PT1000, it doesn't include the support kit

|                    |                    |
|--------------------|--------------------|
| Code               | LBD003             |
| Display            | LED                |
| Speed range        | 0-1500 rpm         |
| Maximum volume     | 10 L               |
| Temperature range  | RT-550°C           |
| Safety temperature | 580°C              |
| Plate material     | Glass ceramic      |
| Plate dimensions   | 184x184 mm         |
| Aprox. dimensions  | 360 x 215 x 112 mm |
| Aprox. weight      | 4,5 Kg             |



## ▶ LBD - Digital with heating

### ▶ With heating RSLAB 11C



1 | It includes temperature probe PT1000, it doesn't include the support kit

|                    |                                  |
|--------------------|----------------------------------|
| Code               | LBD005                           |
| Display            | LED                              |
| Speed range        | 100-1500 rpm                     |
| Temperature range  | RT-280°C                         |
| Safety temperature | 320°C                            |
| Maximum volume     | 3 L                              |
| Plate diameter     | 135 mm                           |
| Plate material     | Stainless steel, ceramic coating |
| Aprox. dimensions  | 260 x 150 x 80 mm                |
| Aprox. weight      | 1,8 Kg                           |



### ▶ With heating RSLAB 4C



- 1 | Supplied with probe Pt1000 that allows a temperature stability of  $\pm 0.2^\circ\text{C}$ . It doesn't include support kit
- 2 | PC control through RS232 interface with special software StirPc, free upon request

|                    |                    |
|--------------------|--------------------|
| Code               | LBD004             |
| Display            | LCD                |
| Speed range        | 100-1500 rpm       |
| Maximum volume     | 20 L               |
| Temperature range  | RT-550°C           |
| Safety temperature | 580°C              |
| Plate material     | Glass ceramic      |
| Plate dimensions   | 184x184 mm         |
| Aprox. dimensions  | 360 x 215 x 112 mm |
| Aprox. weight      | 5,3 Kg             |



## ▶ LBG - Without heating, analogic

### ▶ Without heating, 1M-Mini



- 1 | With rod and clamp for electrodes
- 2 | PET stirring surface of excellent chemical resistance

|                   |                   |
|-------------------|-------------------|
| Code              | LBG011            |
| Speed range       | 300 - 2000 rpm    |
| Maximum volume    | 1,5 L             |
| Plate diameter    | 120 mm            |
| Plate dimensions  | 184x184 mm        |
| Aprox. dimensions | 150 x 145 x 50 mm |
| Aprox. weight     | 0,3 Kg            |





## LBG - Without heating, analogic

Without heating Nahita-Blue 682



- 1 | It is supplied with rod and clamp for holding an electrode or thermometer, and stirring magnet
- 2 | Speed indicator pilot light



|                         |                               |
|-------------------------|-------------------------------|
| Code                    | LBG002                        |
| Speed range             | 100 - 1600 rpm                |
| Maximum stirring volume | 10 L                          |
| Plate material          | Metallic with ceramic coating |
| Plate size              | 190 x 190 mm                  |
| Aprox. dimensions       | 300 x 210 x 126 mm            |
| Aprox. weight           | 5 Kg                          |

Without heating RSLAB 1NC



- 1 | Motor with electronic speed control, constant speed even with load changes
- 2 | Brushless motor free of maintenance



|                         |                   |
|-------------------------|-------------------|
| Code                    | LBG003            |
| Speed range             | 0-1500 rpm        |
| Maximum stirring volume | 20 L              |
| Plate material          | Ceramic           |
| Plate diameter          | 135 mm            |
| Aprox. dimensions       | 280 x 160 x 85 mm |
| Aprox. weight           | 2,8 Kg            |

Without heating RSLAB 1F-flat design



- 1 | With auto-reverse system. Thickness of just 15mm



|                         |                   |
|-------------------------|-------------------|
| Code                    | LBG004            |
| Speed range             | 15-1500 rpm       |
| Maximum stirring volume | 0,80 L (H2O)      |
| Max. stirring weight    | 2 kg              |
| Operation light         | Yes               |
| Plate diameter          | 90 mm             |
| Dimensions (LxWxH)      | 175 x 120 x 15 mm |
| Weight                  | 0,30 Kg           |

Without heating RSLAB 5NC, 10 posts



- 1 | Internal control of stirring uniformity depending on the number of posts used. Brushless motor free of maintenance



|                     |                  |
|---------------------|------------------|
| Code                | LBG005           |
| Speed range         | 0-1100 rpm       |
| Stirring posts      | 10               |
| Maximum volume/post | 0,4 L            |
| Plate material      | Silicone coating |
| Plate size          | 182x450 mm       |
| Aprox. dimensions   | 182x552x65 mm    |
| Aprox. weight       | 3,2 Kg           |

## ▶ LBG - Without heating, analogic

### ▶ Without heating RSLAB 11NCA

**RS Lab**

1 | Nylon+GF shell with good resistance to weak acids and bases

|                         |                   |
|-------------------------|-------------------|
| Code                    | LBG010            |
| Speed range             | 0-1500 rpm        |
| Maximum stirring volume | 3 L               |
| Plate material          | Nylon+GF          |
| Plate diameter          | 135 mm            |
| Aprox. dimensions       | 260 x 150 x 80 mm |
| Aprox. weight           | 1,8 Kg            |



## ▶ LBJ - Without heating, digital

### ▶ Without heating RSLAB 11NCD

**RS Lab**

1 | Nylon+GF shell with good resistance to weak acids and bases

|                   |                   |
|-------------------|-------------------|
| Code              | LBJ001            |
| Display           | LED               |
| Speed range       | 100-1500 rpm      |
| Maximum volume    | 3 L               |
| Plate material    | Nylon+GF          |
| Plate diameter    | 135 mm            |
| Aprox. dimensions | 260 x 150 x 80 mm |
| Aprox. weight     | 1,8 Kg            |



## ▶ LBM - Accessories

### ▶ CHART 1: Accessories magnetic stirrers 11C, 1C, 2C, 3C, 4C

|                                                                                     | Code   | Capacity                               | Model                                                                                 |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------|----------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                        | 11C                                                                                   | 1C                                                                                    | 2C                                                                                    | 3C                                                                                    | 4C                                                                                    |
|  | LBM002 | Temperature probe PT1000               |  |                                                                                       |  |  |  |
|  | LBM005 | Temp. probe PT1000 with glass coating  |  |                                                                                       |  |  |  |
|  | LBM003 | Support kit for probe PT1000           |                                                                                       |                                                                                       |  |  |  |
|                                                                                     | LBM004 | Support kit for probe PT1000           |  |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|  | LBM006 | Adapter for round bottom flasks 50 mL  |  |  |  |                                                                                       |                                                                                       |
|  | LBM007 | Adapter for round bottom flasks 100 mL |  |  |  |                                                                                       |                                                                                       |

 = Accessory included with the indicated equipment

 = Accessory compatible with the indicated equipment



## LBM - Analogic accessories



## CHART 1: Accessories magnetic stirrers 11C, 1C, 2C, 3C, 4C

|                                                                                     | Code   | Capacity                                              | Model                                                                                 |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------|-------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                                       | 11C                                                                                   | 1C                                                                                    | 2C                                                                                    | 3C                                                                                    | 4C                                                                                    |
|    | LBM008 | Adapter for round bottom flasks 250 mL                |    |    |    |                                                                                       |                                                                                       |
|    | LBM009 | Adapter for round bottom flasks 500 mL                |    |    |    |                                                                                       |                                                                                       |
|    | LBM010 | Poly-block red stand with 11 holes for 4 mL tubes     |    |    |    |    |    |
|    | LBM011 | Poly-block purple stand with 4 holes for 20 mL tubes  |    |    |    |    |    |
|  | LBM012 | Poly-block blue stand with 4 holes for 30 mL tubes    |  |  |  |  |  |
|  | LBM013 | Poly-block black stand with 4 holes for 40 mL tubes   |  |  |  |  |  |
|  | LBM014 | Poly-block green stand with 6 holes for 80 mL tubes   |  |  |  |  |  |
|  | LBM015 | Poly block yellow stand with 4 holes with 16 mL tubes |  |  |  |  |  |
|  | LBM016 | Blue support for 4 poly-block stands                  |  |  |  |                                                                                       |                                                                                       |
|  | LBM017 | Blue ring for 4 poly-block stands                     |  |  |  |                                                                                       |                                                                                       |
|  | LBM018 | Protective cover resistant up to 135°                 |                                                                                       |  |  |                                                                                       |                                                                                       |

 = Accessory included with the indicated equipment

 = Accessory compatible with the indicated equipment

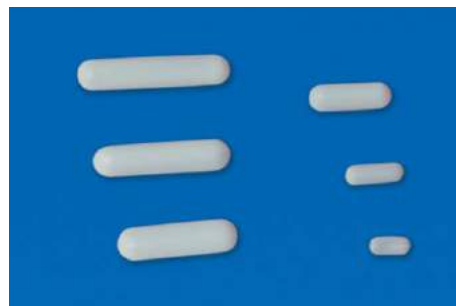
## LDB - Cylindrical stirring magnets

### ► Economy PTFE coating



1 | Excellent chemical and physical resistance. Resistant up to 275°C

| Code   | Diameter | Length | Batch |
|--------|----------|--------|-------|
| LDB001 | 4 mm     | 6 mm   | 20    |
| LDB002 | 4 mm     | 10 mm  | 20    |
| LDB003 | 5 mm     | 15 mm  | 20    |
| LDB004 | 7 mm     | 20 mm  | 10    |
| LDB005 | 8 mm     | 25 mm  | 10    |
| LDB006 | 8 mm     | 30 mm  | 10    |
| LDB007 | 8 mm     | 35 mm  | 10    |
| LDB008 | 8 mm     | 40 mm  | 10    |
| LDB009 | 8 mm     | 45 mm  | 5     |
| LDB010 | 8 mm     | 50 mm  | 5     |
| LDB011 | 8 mm     | 55 mm  | 5     |
| LDB012 | 10 mm    | 60 mm  | 5     |
| LDB013 | 8 mm     | 70 mm  | 5     |
| LDB014 | 10 mm    | 80 mm  | 5     |



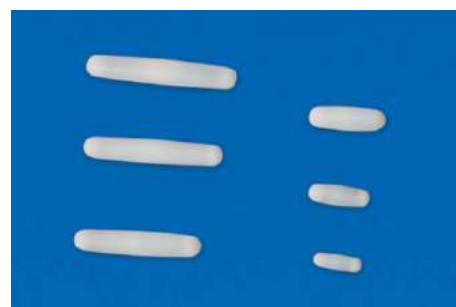
## LDD - Oval stirring magnets

### ► PTFE coating



1 | Excellent chemical and physical resistance. Resistant up to 275°C

| Code   | Length | Diameter |
|--------|--------|----------|
| LDD001 | 10 mm  | 4 mm     |
| LDD002 | 15 mm  | 5 mm     |
| LDD003 | 20 mm  | 7 mm     |
| LDD004 | 25 mm  | 8 mm     |
| LDD005 | 30 mm  | 8 mm     |
| LDD006 | 35 mm  | 8 mm     |
| LDD007 | 40 mm  | 8 mm     |
| LDD008 | 45 mm  | 8 mm     |
| LDD009 | 50 mm  | 8 mm     |



## LDG - Octagonal stirring magnets

### ► PTFE coating



1 | Excellent chemical and physical resistance. Resistant up to 275°C

| Code   | Diameter | Length | Batch |
|--------|----------|--------|-------|
| LDG001 | 6.5 mm   | 15 mm  | 10    |
| LDG002 | 6.5 mm   | 20 mm  | -     |
| LDG003 | 7.5 mm   | 25 mm  | -     |
| LDG004 | 7.5 mm   | 30 mm  | -     |
| LDG005 | 7.5 mm   | 35 mm  | -     |
| LDG006 | 10 mm    | 40 mm  | 10    |
| LDG007 | 10 mm    | 45 mm  | 5     |





## LDP - Other magnets

## Stirrer bar retriever



1 | PTFE coating

| Code   | Length | Magnet (LxØ) | Batch |
|--------|--------|--------------|-------|
| LDP011 | 350 mm | 43x10 mm     | 10    |

## Box of various stirring magnets



| Code   | Description                     |
|--------|---------------------------------|
| LDP012 | Box of various stirring magnets |

Includes:

- **14 cylindrical stirring magnets** 6x4 mm, 10x4 mm, 15x5 mm, 20x7 mm, 25x8 mm, 30x8 mm, 35x8 mm, 40x8 mm, 45x8 mm, 50x8 mm, 55x8 mm, 60x10 mm, 70x10 mm, 80x10 mm
- **1 oval stirring magnet** 50x8 mm
- **3 octagonal stirring magnets** 20x6.5 mm, 30x7.5 mm, 40x10 mm



## LDR - Stirring rods

## Stirring rod, solid glass



- 1 | Totally inert with burnt ends
- 2 | Suitable for stirring all kind of solutions

| Code   | Shape      | Diameter | Length | Batch |
|--------|------------|----------|--------|-------|
| LDR001 | Helicoidal | 5 mm     | 200 mm | -     |
| LDR002 | Straight   | 5 mm     | 200 mm | 50    |
| LDR003 | Straight   | 5 mm     | 300 mm | 50    |
| LDR004 | Straight   | 6 mm     | 400 mm | 50    |
| LDR005 | Straight   | 6 mm     | 500 mm | 50    |



## LGB - For tubes

## Multiple tube vortex 681/10



1 | For solutions contained in different recipients or various tubes at the same time



|                   |                           |
|-------------------|---------------------------|
| Code              | LGB001                    |
| Speed             | 2600 RPM                  |
| Shaking movement  | Vibratory                 |
| Shaking amplitude | 6,2 mm                    |
| Operation type    | Continuous at fixed speed |
| Platform diameter | 100 mm                    |
| Aprox. dimensions | 150 x 130 x 140 mm        |
| Aprox. weight     | 2,3 Kg                    |



 LGB - For tubes

 Multi function vortex 681/22


1 | It includes 8 accessories easily interchangeable that allow the use of different recipients

**NOTE: accessories included, see below chart**

|                        |                            |
|------------------------|----------------------------|
| Code                   | LGB002                     |
| Speed                  | 300-3000 rpm               |
| Shaking movement       | Orbital                    |
| Operation type         | Continuous or por contacto |
| Maximum shaking weight | 0,5 Kg                     |
| Aprox. dimensions      | 210 x 150 x 65 mm          |
| Aprox. weight          | 2.5 Kg                     |


 CHART 2: Accessories mixer 681/22 (INCLUDED)

|                                                                                     | Code   | Description                                                      |
|-------------------------------------------------------------------------------------|--------|------------------------------------------------------------------|
|    | LGG001 | Standard top, for test tubes and small recipients, up to Ø 50 mm |
|  | LGG002 | Circular support, for foam accessories                           |
|  | LGG003 | Support for one microplate                                       |
|  | LGG004 | Microdisk type adapter                                           |
|  | LGG005 | Tube adapter, perforable as needed                               |
|  | LGG006 | Adapter for 14 tubes of 10 mm                                    |
|  | LGG007 | Adapter for 6 tubes of 12 mm                                     |
|  | LGG008 | Adapter for 4 tubes of 16 mm                                     |



## LGB - For tubes

## Vortex, RSLAB 6PRO



- 1| Adapters fixation system by simple click
- 2| Robust shell, rubber legs and metallic base specially designed for buffering the vibration
- 3| Eccentric wheel with bearings

|                   |                           |
|-------------------|---------------------------|
| Code              | LGB003                    |
| Speed range       | 0-2500 rpm                |
| Shaking movement  | Orbital                   |
| Shaking movement  | 4 mm                      |
| Operation mode    | Continuous / por contacto |
| Aprox. dimensions | 127 x 130 x 160 mm        |
| Aprox. weight     | 3,5 Kg                    |



## LGD - For microplates

## RSLAB 12



- 1| Brushless motor free of maintenance

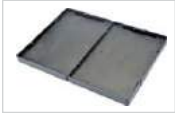
|                             |                                                              |
|-----------------------------|--------------------------------------------------------------|
| Code                        | LGD001                                                       |
| Speed range                 | 0-1500 rpm simple microplate<br>0-1000 rpm double microplate |
| Shaking movement            | Orbital                                                      |
| Diameter of orbital shaking | 4,5 mm                                                       |
| Operation type              | Continuous                                                   |
| Maximum shaking weight      | 0,5 Kg                                                       |
| Aprox. dimensions           | 260 x 150 x 80 mm                                            |
| Aprox. weight               | 3 Kg                                                         |



## LGG - Accessories



## CHART 3: Accessories mixers models RSLAB 6PRO and RSLAB 12

|                                                                                     | Code   | Description                                 | Model                                                                                 |                                                                                       |
|-------------------------------------------------------------------------------------|--------|---------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                             | RSLAB 12                                                                              | RSLAB 6PRO                                                                            |
|  | LGG019 | Adapter 1 microplate                        |  |                                                                                       |
|  | LGG020 | Adapter 2 microplates                       |  |                                                                                       |
|  | LGG021 | Support for tube adapters continuousus mode |  |                                                                                       |
|  | LGG009 | Support for tube adapters continuousus mode |                                                                                       |  |

 = Accessory included with the indicated equipment

 = Accessory compatible with the indicated equipment

## LGG - Accesorios

► CHART 3: Accessories mixers models RSLAB 6PRO and RSLAB 12

|                                                                                     | Code   | Capacity                                                       | Model                    |                                     |
|-------------------------------------------------------------------------------------|--------|----------------------------------------------------------------|--------------------------|-------------------------------------|
|                                                                                     |        |                                                                | RSLAB 12                 | RSLAB 6PRO                          |
|    | LGG010 | Adapter for 48 PCR microtubes of 6 mm                          | <input type="checkbox"/> | <input type="checkbox"/>            |
|    | LGG011 | Adapter for 15 round bottom tubes of 10 mm                     | <input type="checkbox"/> | <input type="checkbox"/>            |
|    | LGG012 | Adapter for 12 round bottom tubes of 12 mm                     | <input type="checkbox"/> | <input type="checkbox"/>            |
|    | LGG013 | Adapter for 8 round bottom tubes of 16 mm                      | <input type="checkbox"/> | <input type="checkbox"/>            |
|   | LGG014 | Adapter for 8 round bottom tubes of 20 mm                      | <input type="checkbox"/> | <input type="checkbox"/>            |
|  | LGG015 | Holding rod for tubes with adapters for code LGG010 and LGG014 |                          | <input type="checkbox"/>            |
|  | LGG016 | Standard top for tubes Ø 30 mm                                 |                          | <input checked="" type="checkbox"/> |
|  | LGG018 | Anti-slip platform for recipients of 99 mm maximum diameter    |                          | <input type="checkbox"/>            |

## LJB - Seesaw

### ► Analogic RSLAB 15

**RS Lab**

- 1 | Platform with anti-slip coating included
- 2 | It includes 3 small and 3 large elastic bands

|                        |                    |
|------------------------|--------------------|
| Code                   | LJB002             |
| Speed range            | 0 – 80 rpm         |
| Shaking movement       | Seesaw             |
| Shaking angle          | 7°                 |
| Maximum shaking weight | 3 Kg               |
| Operating mode         | Continuous         |
| Aprox. dimensions      | 330 x 270 x 130 mm |
| Aprox. weight          | 3,2 Kg             |





## LJB - Seesaw

► Digital, RSLAB 15



- 1 | Aluminum alloy platform with anti-slip coating, included
- 2 | It includes 8 elastic bands

|                        |                          |
|------------------------|--------------------------|
| Code                   | LJB003                   |
| Speed range            | 10 – 70 rpm              |
| Shaking movement       | Seesaw                   |
| Shaking angle          | 9°                       |
| Maximum shaking weight | 10 Kg                    |
| Operation mode         | Continuous or programmed |
| Time range             | 1-1199 min               |
| Aprox. dimensions      | 410 x 360 x 200 mm       |
| Aprox. weight          | 9,0 Kg                   |

► Analogic, 683/10



- 1 | Platform with rubber tray with slots

|                          |                   |
|--------------------------|-------------------|
| Code                     | LJB001            |
| Speed                    | 15 rpm            |
| Shaking movement         | Seesaw            |
| Oscillation angle        | ±25°              |
| Maximum shaking capacity | 12 tubes          |
| Platform material        | Goma con ranuras  |
| Tamaño platashape        | 255 x 175 mm      |
| Aprox. dimensions        | 350 x 200 x 95 mm |
| Aprox. weight            | 2,5 Kg            |



## LJD - With rollers

► Analogic, 683



- 1 | It allows shaking diverse types of tubes with different liquid, viscous samples or solids suspensions that require minimum airming

|                   |                    |
|-------------------|--------------------|
| Code              | LJD001             |
| Speed range       | 10-80 rpm          |
| Shaking movement  | Rolling            |
| Number of rollers | 7                  |
| Roller length     | 240 mm             |
| Aprox. dimensions | 400 x 250 x 100 mm |
| Aprox. weight     | 4 Kg               |

► Analogic, RSLAB 10



- 1 | It allows shaking diverse types of tubes with different liquid, viscous samples or solids suspensions that require minimum airming

|                        |                    |
|------------------------|--------------------|
| Code                   | LJD002             |
| Speed range            | 0-70 rpm           |
| Shaking movement       | Rolling and seesaw |
| Number of rollers      | 6                  |
| Operation mode         | Continuous         |
| Maximum shaking weight | 4 Kg               |
| Aprox. dimensions      | 450 x 260 x 120mm  |
| Aprox. weight          | 4,5 Kg             |

## LJG - Rotary

### ▶ Analogic multiposition, RSLAB 9



- 1| Rotor capacity: 48 x 1,5ml, 16 x 15ml and 8 x 50ml.
- 2| Supplied with: 3 bags of 12 adapters of 1.5 ml, 1 bag of 12 adapters of 15 ml and 1 bag of 12 adapters of 50 ml

|                   |                |               |
|-------------------|----------------|---------------|
| Code              | LJG002         | LJG001        |
| Model             | 9 Disk         | 9 Rotisserie  |
| Speed range       | 0 – 80 rpm     |               |
| Shaking movement  | Rotary         |               |
| Operation mode    | Continuous     |               |
| Aprox. dimensions | 300x220x310 mm | 50x530x190 mm |
| Aprox. weight     | 2,0 Kg         | 1,7 Kg        |



REF. LJG002

REF. LJG001



### ▶ Digital multiposition, RSLAB 9



- 1| Equipped with braking device
- 2| Model 9 digital disk is supplied with the disk type accessory for 8 tubes of 50 ml (code LJJ009)
- 3| Model 9 digital rotisserie is supplied with the vertical rotisserie type accessory for 16 tubes of 50 ml (code LJJ006)

|                   |                           |                      |
|-------------------|---------------------------|----------------------|
| Code              | LJG004                    | LJG003               |
| Model             | 9 digital disk            | 9 digital rotisserie |
| Display           | LCD                       |                      |
| Speed range       | 10-70 rpm                 |                      |
| Shaking movement  | Rotary                    |                      |
| Shaking angle     | Adjustable from 0° to 90° |                      |
| Operation mode    | Continuous or programmed  |                      |
| Timer             | 1/1199 min                |                      |
| Aprox. dimensions | 510 x 190 x 260 mm        |                      |
| Aprox. weight     | 8,0 Kg                    |                      |
| Precio            | 963,14                    | 1.113,29             |



REF. LJG004

REF. LJG003



## LJJ - Rotary, accessories

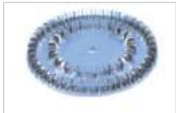
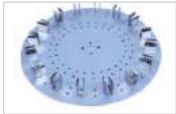
### ▶ CHART 4: 'Accessories digital rotators RSLAB 9 DIGITAL'

|  | Code   | Capacity                                                    | Digital models           |                          |
|--|--------|-------------------------------------------------------------|--------------------------|--------------------------|
|  |        |                                                             | RSLAB 9 'disk'           | RSLAB 9 'rotisserie'     |
|  | LJJ001 | Horizontal rotisserie type accessory for 48 tubes of 1,5 mL | <input type="checkbox"/> | <input type="checkbox"/> |
|  | LJJ002 | Horizontal rotisserie type accessory for 24 tubes of 15 mL  | <input type="checkbox"/> | <input type="checkbox"/> |
|  | LJJ003 | Horizontal rotisserie type accessory for 24 tubes of 50 mL  | <input type="checkbox"/> | <input type="checkbox"/> |
|  | LJJ004 | Vertical rotisserie type accessory for 32 tubes of 1,5 mL   | <input type="checkbox"/> | <input type="checkbox"/> |
|  | LJJ005 | Vertical rotisserie type accessory for 32 tubes of 1,5 mL   | <input type="checkbox"/> | <input type="checkbox"/> |



## LJJ - Rotarys, accesorios

## CHART 4: 'Accessories digital rotators RSLAB 9 DIGITAL'

|                                                                                    | Code   | Capacity                                               | Model                                                                               |                                                                                     |
|------------------------------------------------------------------------------------|--------|--------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                    |        |                                                        | RSLAB 9 'disk'                                                                      | RSLAB 9 'rotisserie'                                                                |
|   | LJJ006 | Rotisserie type accessory for 16 tubes of 50 ml        |                                                                                     |  |
|   | LJJ007 | Disk type accessory for 60 tubes of 1,5 mL             |  |                                                                                     |
|   | LJJ008 | Disk type accessory for 16 tubes of 15 mL              |  |                                                                                     |
|   | LJJ009 | Disk type accessory for 8 tubes of 50 ml               |  |                                                                                     |
|  | LJJ010 | 4 support rods to integrate a second disk type support |  |                                                                                     |



= Accessory included with the indicated equipment



= Accessory compatible with the indicated equipment



## LJL - 3D

## Analogic, RSLAB 14



- 1 | Platform with anti-slip coating included
- 2 | It includes 3 small and 3 large elastic bands

|                        |                                   |
|------------------------|-----------------------------------|
| Code                   | LJL001                            |
| Movement type          | 3D orbital                        |
| Shaking angle          | 7°                                |
| Speed range            | 0 – 80 rpm                        |
| Operation mode         | Continuous                        |
| Maximum shaking weight | 3 Kg                              |
| Platform material      | Aluminum alloy, anti-slip coating |
| Aprox. dimensions      | 330 x 270 x 130 mm                |
| Aprox. weight          | 3,2 Kg                            |

## Digital, RSLAB 14



- 1 | Supplied with platform with 8 elastic bands

|                        |                                   |
|------------------------|-----------------------------------|
| Code                   | LJL002                            |
| Movement type          | 3D orbital                        |
| Shaking angle          | 9°                                |
| Speed range            | 10 – 70 rpm                       |
| Operation mode         | Continuous or programmed          |
| Maximum shaking weight | 5 Kg                              |
| Platform material      | Aluminum alloy, anti-slip coating |
| Aprox. dimensions      | 430 x 360 x 106 mm                |
| Aprox. weight          | 9,0 Kg                            |



## LJN - Orbitales

### Digital, Nahita-blue 685/2



1| Suction pad type legs, it has a timer with a range of 5h 59 min 59s

|                        |                    |
|------------------------|--------------------|
| Code                   | LJN001             |
| Speed range            | 30-240 rpm         |
| Shaking movement       | Orbital            |
| Shaking amplitude      | 24 mm              |
| Maximum shaking weight | 15 Kg              |
| Platform size          | 255 x 355 mm       |
| Aprox. dimensions      | 365 x 255 x 160 mm |
| Aprox. weight          | 8,5 Kg             |



### Analogic, RSLAB 7-A



- 1| Platform with anti-slip coating included  
2| It includes 3 small and 3 large elastic bands

|                        |                    |
|------------------------|--------------------|
| Code                   | LJN002             |
| Speed range            | 0-200 rpm          |
| Movement type          | Orbital            |
| Diameter orbital       | 20 mm              |
| Operation type         | Continuous         |
| Maximum shaking weight | 3 Kg               |
| Aprox. dimensions      | 330 x 270 x 110 mm |
| Aprox. weight          | 3,1 Kg             |
| Precio                 | 559.29             |



### Analogic, RSLAB 7-D



- 1| Plate with 3 bars included. Brushless motor free of maintenance  
2| Over speed detection and protection system  
3| PC control through RS232 interface

|                          |                          |
|--------------------------|--------------------------|
| Code                     | LJN003                   |
| Display                  | LCD                      |
| Speed range              | 100-800 rpm              |
| Movement type            | Orbital                  |
| Shaking orbital diameter | 4 mm                     |
| Operation mode           | Continuous or programmed |
| Maximum shaking weight   | 2,5 Kg                   |
| Timer                    | 1/1199 min               |
| Aprox. dimensions        | 340 x 300 x 100 mm       |
| Aprox. weight            | 8,1 Kg                   |



### Analogic, RSLAB7-PRO



- 1| Plate with 4 bars included. Brushless motor free of maintenance  
2| Over speed detection and protection system  
3| PC control through RS232 interface

|                          |                          |
|--------------------------|--------------------------|
| Code                     | LJN004                   |
| Display                  | LCD                      |
| Speed range              | 100-500 rpm              |
| Movement type            | Orbital                  |
| Shaking orbital diameter | 10 mm                    |
| Maximum shaking weight   | 7,5 Kg                   |
| Operation mode           | Continuous or programmed |
| Timer                    | 1/1199 min               |
| Aprox. dimensions        | 420x370x100 mm           |
| Aprox. weight            | 13,5 Kg                  |

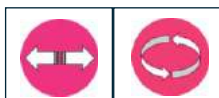




## LJQ - Linear

► Analogic, RSLAB 7-A

**RS Lab**

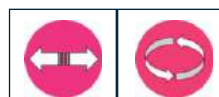


- 1 | Platform with anti-slip coating included
- 2 | It includes 3 small and 3 large elastic bands

|                        |                    |
|------------------------|--------------------|
| Code                   | LJQ001             |
| Speed range            | 0-200 rpm          |
| Movement type          | Linear             |
| Orbital diameter       | 20 mm              |
| Operation mode         | Continuous         |
| Maximum shaking weight | 3 Kg               |
| Aprox. dimensions      | 330 x 270 x 110 mm |
| Aprox. weight          | 3,1 Kg             |

► Digital, RSLAB 7-D

**RS Lab**

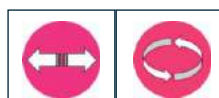


- 1 | Plate with 3 bars included. Brushless motor free of maintenance
- 2 | Over speed detection and protection system
- 3 | PC control through RS232 interface

|                          |                          |
|--------------------------|--------------------------|
| Code                     | LJQ002                   |
| Display                  | LCD                      |
| Speed range              | 100-350 rpm              |
| Movement type            | Linear                   |
| Shaking orbital diameter | 4 mm                     |
| Operation mode           | Continuous or programmed |
| Maximum shaking weight   | 2,5 Kg                   |
| Timer                    | 1/1199 min               |
| Aprox. dimensions        | 340 x 300 x 100 mm       |
| Aprox. weight            | 8,1 Kg                   |

► Digital, RSLAB 7-PRO

**RS Lab**



- 1 | Plate with 4 bars included. Brushless motor free of maintenance
- 2 | Over speed detection and protection system
- 3 | PC control through RS232 interface

|                          |                          |
|--------------------------|--------------------------|
| Code                     | LJQ003                   |
| Display                  | LCD                      |
| Speed range              | 100-350 rpm              |
| Movement type            | Linear                   |
| Shaking orbital diameter | 10 mm                    |
| Maximum shaking weight   | 7,5 Kg                   |
| Operation mode           | Continuous or programmed |
| Timer                    | 1/1199 min               |
| Aprox. dimensions        | 420x370x100 mm           |
| Aprox. weight            | 13,5 Kg                  |

 LJS - Orbital-linear, accessories

 **CHART 5:** 'Accessories orbital and linear shakers. Models RSLAB 7, 7 PRO, 14 and 15'

|                                                                                     | Code                                | Capacity                                                                               | Model                                                                               |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |                                     |                                                                                        | 7                                                                                   | 7 D                                                                                 | 14 A                                                                                  | 15 A                                                                                  | 7 PRO                                                                                 | 14 D                                                                                  | 15 D                                                                                  |
|    | LJS006                              | Universal bar for plate with 3 bars                                                    |    |    |    |    |                                                                                       |                                                                                       |                                                                                       |
|    | LJS007                              | Universal bar for plate with 4 bars                                                    |                                                                                     |                                                                                     |                                                                                       |                                                                                       |    |    |    |
|    | LJS008                              | Plate with 3 bars                                                                      |    |    |    |    |                                                                                       |                                                                                       |                                                                                       |
|    | LJS009                              | Erlenmeyer fixing clip attachment                                                      |    |    |    |    |                                                                                       |                                                                                       |                                                                                       |
|   | LJS010                              | Plate with 4 bars                                                                      |                                                                                     |                                                                                     |                                                                                       |                                                                                       |    |    |    |
|  | LJS013                              | Anti-slip platform<br>Dimensions: 24x21,5 cm                                           |  |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|  | LJS011                              | Erlenmeyer fixing clip attachment                                                      |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |  |
|  | LJS012                              | Platform with 8 rubbers<br>Dimensions: 30x28,5 cm                                      |                                                                                     |                                                                                     |                                                                                       |                                                                                       |  |  |  |
|  | LJS001                              | Fixing clip for Erlenmeyer flask<br>36 units of 25 mL<br>56 units of 25 mL             |  |  |  |  |  |  |  |
|                                                                                     | LJS002                              | Fixing clip for Erlenmeyer flask<br>18 units of 50 mL<br>28 units of 50 mL             |  |  |  |  |  |  |  |
|                                                                                     | LJS003                              | Fixing clip for Erlenmeyer flask<br>18 units of 100 mL<br>28 units of 100 mL           |  |  |  |  |  |  |  |
|                                                                                     | LJS004                              | Fixing clip for Erlenmeyer flask<br>5/8* units of 200/250 mL<br>13 units of 200/250 mL |  |  |  |  |  |  |  |
|                                                                                     | LJS005                              | Fixing clip for Erlenmeyer flask<br>5/8* units of 500 mL<br>9 units of 500 mL          |  |  |  |  |  |  |  |
|                                                                                     | * with 3 fixing points instead of 4 |                                                                                        |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |

Numbers of units corresponds to maximum capacity of each model.

 = Accessory included with the indicated equipment

 = Accessory compatible with the indicated equipment



## LLB - Rod stirrers

▶ Analogic, Nahita 686



- 1 | For working with medium/low viscosity liquids
- 2 | Model 686/1 is supplied with: two stirring rods with fixed blade (diameter 30 mm and 100 mm) and ant-slip transparent base (diameter 120 mm)
- 3 | Model 686/2 is supplied with: two stirring rods with fixed blade (diameter 60 mm and 40 mm with 4 holes) and ant-slip transparent base

|                        |                |                |
|------------------------|----------------|----------------|
| Code                   | LLB001         | LLB002         |
| Model                  | 686/1          | 686/2          |
| Speed range            | 200-1000 rpm   | 200-2000 rpm   |
| Maximum shaking volume | 1 L            | 2 L            |
| Aprox. dimensions      | 160x160x370 mm | 160x240x500 mm |
| Aprox. weight          | 3,5            | 3,5            |

▶ Digital, RSLAB 13



- 1 | Sample anti-spill system
- 2 | Stand and stirring rod not included

|                   |               |               |
|-------------------|---------------|---------------|
| Code              | LLB004        | LLB006        |
| Model             | 13-20         | 13-40         |
| Display           | LED           | LED           |
| Speed range       | 0-2200 rpm    | 0-2200 rpm    |
| Maximum volume    | 20 L          | 40 L          |
| Maximum viscosity | 10000 mPas    | 50000 mPas    |
| Rod dimensions    | 14x220 mm     | 14x220 mm     |
| Aprox. dimensions | 83x220x186 mm | 83x220x186 mm |
| Aprox. weight     | 2,6Kg         | 2,8Kg         |

▶ Digital, RSLAB 13PRO



- 1 | Sample anti-spill system
- 2 | Overload protection: motor stops automatically in case of continuous overload
- 3 | PC control through RS232 interface
- 4 | It includes stand (code LLF001) and cross stirring rod (code LLF002)

|                   |               |               |
|-------------------|---------------|---------------|
| Code              | LLB003        | LLB005        |
| Model             | 13PRO-20      | 13PRO-40      |
| Display           | LCD           | LCD           |
| Speed range       | 50-2200 rpm   | 50-2200 rpm   |
| Maximum volume    | 20 L          | 40 L          |
| Maximum viscosity | 10000 mPas    | 50000 mPas    |
| Rod dimensions    | 14x220 mm     | 14x220 mm     |
| Aprox. dimensions | 83x220x186 mm | 83x220x186 mm |
| Aprox. weight     | 2,6Kg         | 2,8Kg         |

## LLF - Accessories



► CHART 6: 'Accessories rod stirrers. Models RSLAB 13 and 13PRO'

|                                                                                     | Code   | Capacity                                         | Model                                                                                 |                                                                                       |
|-------------------------------------------------------------------------------------|--------|--------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                                  | 13                                                                                    | 13PRO                                                                                 |
|    | LLF002 | Stainless steel cross stirring rod, 5x40 cm      |    |    |
|    | LLF003 | Stainless steel straight stirring rod, 6x40 cm   |    |    |
|    | LLF004 | Stainless steel blade stirring rod, 7x40 cm      |    |    |
|    | LLF005 | Stainless steel centrifuge stirring rod, 9x40 cm |    |    |
|  | LLF001 | Universal stand                                  |  |  |
|  | LLF006 | PTFE cross stirring rod, 5x35 cm                 |  |  |
|  | LLF007 | PTFE straight stirring rod, 5x35 cm              |  |  |
|  | LLF008 | PTFE blade stirring rod, 7x35 cm                 |  |  |
|  | LLF009 | PTFE centrifuge stirring rod, 9x35 cm            |  |  |

 = Accessory included with the indicated equipment

 = Accessory compatible with the indicated equipment

LABORATORY  
SUPPLIERS

TRADEMARKS

COMPETITIVITY

SERVICES

STOCK

PRODUCT  
RANGE

**WE REPRESENT  
LEADING BRANDS  
IN THE MARKET**

AUXILAB S.L.

Material de laboratorio  
Laboratory supplies



**ROGO-SAMPAIC**  
matériel de laboratoire

**SOCOREX**  
SWISS



**Kartell**



**SAINT-GOBAIN**  
PERFORMANCE PLASTICS



**AUXILAB  
+ ROGO  
SAMPAIC**

**YOUR BIG LOGISTIC PLATFORM  
OF LABORATORY SUPPLIES  
AND EQUIPMENT**



|                                                                                     |                                          |
|-------------------------------------------------------------------------------------|------------------------------------------|
|    | Z - others                               |
|    | R - protection and safety                |
|    | Q - didactic material                    |
|    | P - filtration and separation            |
|    | L - stirring                             |
|    | K - measuring instruments                |
|    | J - heating - cooling                    |
|    | H - optical equipments                   |
|    | G - centrifuges                          |
|  | F - laboratory assemblies and tools      |
|  | D - volumetry                            |
|  | C - beakers, flasks and other containers |
|  | B - general use                          |

## [M] INDEX OF CONTENTS LIQUID HANDLING

|                                             |            |
|---------------------------------------------|------------|
| <b>[MB] Pipette controllers .....</b>       | <b>206</b> |
| MBB - Manual controllers.....               | 206        |
| MBD - Electronic controllers .....          | 206        |
| MBG - Controllers, accessories.....         | 206        |
| MBJ - Pipette pumps .....                   | 207        |
| MBL - Rubber fillers/teats .....            | 207        |
| <b>[MD] Bottle-top dispensers .....</b>     | <b>208</b> |
| MDD - Adjustable volume.....                | 208        |
| MDJ - Accessories .....                     | 208        |
| <b>[MG] Micropipettes.....</b>              | <b>208</b> |
| MGB - Adjustable volume.....                | 208        |
| MGD - Fixed volume .....                    | 209        |
| MGG - Multichannel .....                    | 210        |
| MGJ - Repeater pipettes.....                | 210        |
| MGM - Electronic pipettes .....             | 210        |
| MGT - Stands.....                           | 210        |
| <b>[MJ] Tips and other consumables.....</b> | <b>210</b> |
| MJB - 10 µl.....                            | 210        |
| MJJ - 200 µl .....                          | 210        |
| MJN - 1000 µl .....                         | 210        |
| MJQ - 2/5/10 ml.....                        | 210        |
| MJV - Syringes for repeater pipettes .....  | 211        |

TRADEMARKS:



## MBB - Manual controllers

### Manual controllers



#### DIGIPETTE

- 1 | Ergonomic, lightweight and easy to handle with one hand.
- 2 | Glass and plastic pipettes from 0.1mL up to 100mL.
- 3 | Button for expulsion of the last residual fluid.
- 4 | PTFE hydrophobic filter to protect the internal mechanism.

| Referencia | Color |
|------------|-------|
| MBB001     | White |
| MBB002     | Blue  |
| MBB003     | Red   |
| MBB004     | Green |

## MBD - Electronic controllers

### Electronic controller



#### DIGIPETTE

- 1 | Powerful, lightweight and ergonomic instrument.
- 2 | Glass and plastic pipettes from 0.1 mL up to 100 mL.
- 3 | Double protection against fluid penetration by safety valve and PTFE hydrophobic filters (0.2 $\mu$ m y 0.45 $\mu$ m).
- 4 | Rechargeable batteries for 8 hours of continuous use with low charge indicator.
- 5 | Includes desktop stand and wall mounting stands with screw.



Wall mounting



Desktop stand

| Referencia | Description                     |
|------------|---------------------------------|
| MBD002     | Digipette electronic controller |

## MBG - Controllers, accessories

### CHART 1: 'Digipette electronic controller, accessories'

|                                                                                     | Code   | Description                                                  | Model                                                                                 |
|-------------------------------------------------------------------------------------|--------|--------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                                              | Manual y electrónico Digipett                                                         |
|  | MBG008 | PTFE filter 0.45 $\mu$ m<br>Teflon, external diameter: 29 mm |  |

 = Accessories **incluido** with indicated item

 = Accessories **compatible** with indicated item

## ▶ MBJ - Pipette pumps

### ▶ Pipette pumps

**DIGIPETTE**

- 1 | For glass and plastic pipettes.
- 2 | One hand easy operation. With colour code.

| Code   | Capacity    | Colour |
|--------|-------------|--------|
| MBJ007 | Up to 2 mL  | Blue   |
| MBJ008 | Up to 10 mL | Green  |
| MBJ009 | Up to 25 mL | Red    |



## ▶ MBL - Rubber fillers and teats

### ▶ Dummy teat

**ENDO**  
plasticware

- 1 | Made of latex, for glass Pasteur pipettes.

| Code   | Description |
|--------|-------------|
| MBL013 | Dummy tea   |



### ▶ Rubber teat

**ENDO**  
plasticware

- 1 | For glass Pasteur pipettes.

| Code   | Description | For pipettes   |
|--------|-------------|----------------|
| MBL014 | Soft rubber | Pasteur, glass |
| MBL015 | Hard rubber | Pasteur, glass |
| MBL016 | Rubber      | Up to 5mL      |
| MBL017 | Rubber      | Up to 10mL     |
| MBL018 | Rubber      | Up to 15mL     |



### ▶ Pipette fillers with 3 valves

**ENDO**  
plasticware

| Referencia | Color | Para pipetas |
|------------|-------|--------------|
| MBL019     | Red   | Up to 10 mL  |
| MBL020     | Green | Up to 100 mL |





## MDD - Adjustable volume

## ▶ Bottle dispenser, Dosyproof



## DIGIPETTE

- 1 | Soft, comfortable and effective dispensing.
- 2 | Wide chemical compatibility.
- 3 | Autoclavable: these dispenser are resistant to steam sterilization up to 121° C and 2 bar (15 psi) for about 20 minutes.
- 4 | Easy maintenance and cleaning: the disassembly /assembly is simple with a limited number of well-assembled parts.

| Code   | Volume range | Graduation | Precisión |
|--------|--------------|------------|-----------|
| MDD001 | 0.5-5.0 mL   | 0.1 mL     | ±25 µL    |
| MDD002 | 1.0-10.0 mL  | 0.2 mL     | ±50 µL    |
| MDD003 | 2.5-25.0 mL  | 0.5 mL     | ±125 µL   |
| MDD004 | 5.0-50.0 mL  | 1.0 mL     | ±250 µL   |



## MDJ - Accessories

## ▶ CHART 3: 'Dosyproof bottle dispenser, accessories

Model  
Dosyproof

| Code   | Description         | Ø        |
|--------|---------------------|----------|
| MDJ052 | Thread adapter S 40 | 45/40 mm |
| MDJ053 | Thread adapter GL38 | 45/38 mm |
| MDJ054 | Thread adapter GL32 | 45/32 mm |
| MDJ055 | Thread adapter GL28 | 32/28 mm |
| MDJ056 | Thread adapter GL25 | 32/25 mm |



| Code   | Description |
|--------|-------------|
| MDJ057 | Supply tube |



| Code   | Description    |
|--------|----------------|
| MDJ058 | Dispenser tube |

 = Accessory **included** with indicated items = Accessory **compatible** with indicated items

## MGB - Adjustable volume

## ▶ Pipetas 'ECO'

## DIGIPETTE

- 1 | Especially useful for educational purpose. Robust and resistant design for intensive use.
- 2 | Wide digits display for easy volume selection. With re-calibration mechanism.

| Code   | Vol. range (µL) | Test Vol. (µL) | Accuracy (%) | Precision (%) |
|--------|-----------------|----------------|--------------|---------------|
| MGB019 | 0.2-2           | 0,2            | ±1.5         | <10           |
|        |                 | 2              | ±2.0         | ≤1            |
| MGB020 | 1-10            | 1              | ±4.0         | ≤2            |
|        |                 | 10             | ±1.2         | ≤0.7          |
| MGB021 | 2-20            | 2              | ±5.0         | ≤3            |
|        |                 | 20             | ±2.5         | ≤0.8          |
| MGB022 | 20-100          | 20             | ±3.7         | ≤1.2          |
|        |                 | 100            | ±1.9         | ≤0.4          |
| MGB023 | 50-200          | 50             | ±2.0         | ≤1.0          |
|        |                 | 200            | ±1.0         | ≤0.4          |
| MGB024 | 100-1000        | 100            | ±1.5         | ≤0.6          |
|        |                 | 1000           | ±1.0         | ≤0.3          |
| MGB025 | 1000-5000       | 1000           | ±1.5         | ≤0.6          |
|        |                 | 5000           | ±0.8         | ≤0.3          |



## ▶ MGB - Adjustable volume

### ▶ Adjustable volume. Autoclavables micropipette

**DIGIPETTE**

- 1| Ergonomic and light design to reduce effort and avoid fatigue during long working periods.
- 2| Fully autoclavable.
- 3| "Clik-stop" mechanism of volumen selection that ensures accurate dispensing of the liquid.
- 4| Easy identification by color code.
- 5| Calibration report according to ISO8655 included with each pipette.



| Code    | Vol. range (μL) | Resolution (μL) | Test Vol. (μL) | Inaccuracy (%) | Imprecision (%) |
|---------|-----------------|-----------------|----------------|----------------|-----------------|
| MGB001  | 0.1-2.5         | 0.01            | 0.25           | 12             | 6               |
|         |                 |                 | 2.5            | 2.5            | 1.6             |
| MGB002  | 0.5-10          | 0.1             | 1              | 2.5            | 1.5             |
|         |                 |                 | 10             | 1              | 0.8             |
| MGB003  | 2-20            | 0.1             | 2              | 3              | 2               |
|         |                 |                 | 20             | 0.9            | 0.4             |
| MGB004  | 5-50            | 0.5             | 5              | 2              | 2               |
|         |                 |                 | 50             | 0.6            | 0.3             |
| MGB005  | 10-100          | 0.5             | 10             | 3              | 1.5             |
|         |                 |                 | 100            | 0.8            | 0.15            |
| MGB006  | 20-200          | 1               | 20             | 2              | 0.8             |
|         |                 |                 | 200            | 0.6            | 0.15            |
| MGB007  | 100-1000        | 5               | 100            | 2              | 0.7             |
|         |                 |                 | 1000           | 0.6            | 0.2             |
| MGB008  | 500-5000        | 50              | 500            | 2              | 0.6             |
|         |                 |                 | 5000           | 0.5            | 0.2             |
| MGB009* | 500-10000       | 100             | 500            | 3              | 0.6             |
|         |                 |                 | 10000          | 0.6            | 0.2             |

\* sin eyector de punta; eyección manual

## ▶ MGD - Fixed volume

### ▶ Autoclavables micropipette

**DIGIPETTE**

- 1| Ergonomic and light design to reduce effort and avoid fatigue during long working periods.
- 2| Fully autoclavable.
- 3| Easy identification by color code.
- 4| Calibration report according to ISO8655 included with each pipette.

| Code   | Vol.    | Test    | Innaccuracy (±) | Imprecision (±) |
|--------|---------|---------|-----------------|-----------------|
| MGD001 | 10 μl   | 10 μl   | 0.8 %           | 0.8 %           |
| MGD002 | 20 μl   | 20 μl   | 0.6 %           | 0.5 %           |
| MGD003 | 25 μl   | 25 μl   | 0.5 %           | 0.3 %           |
| MGD004 | 50 μl   | 50 μl   | 0.5 %           | 0.3 %           |
| MGD005 | 100 μl  | 100 μl  | 0.5 %           | 0.3 %           |
| MGD006 | 200 μl  | 200 μl  | 0.4 %           | 0.2 %           |
| MGD007 | 500 μl  | 500 μl  | 0.3 %           | 0.2 %           |
| MGD008 | 1000 μl | 1000 μl | 0.3 %           | 0.15 %          |





## MGG - Multichannel

## Autoclavable micropipette



## DIGIPETTE

- 1| Widely used in immunology, biochemistry, clinical diagnosis and food analysis.
- 2| Suitable for handling microtiter plates in dilution processes and washing steps, among others.
- 3| Multichannel volumetric module can rotate 360° to work in the best working position.
- 4| Easy identification by color code.

| Code               | Vol. range<br>μl | Res.<br>μl | Test Vol.<br>μl | Innaccuracy<br>(±) % | Imprecision<br>(±) % |
|--------------------|------------------|------------|-----------------|----------------------|----------------------|
| <b>8 channels</b>  |                  |            |                 |                      |                      |
| MGG001             | 0.5-10           | 0.1        | 1<br>10         | 4<br>1.5             | 4<br>1.5             |
| MGG002             | 5-50             | 0.5        | 5<br>50         | 3<br>1               | 2<br>0.7             |
| MGG003             | 10-100           | 1          | 10<br>100       | 1.5<br>1             | 1.5<br>0.5           |
| MGG004             | 20-200           | 1          | 20<br>200       | 1.5<br>0.7           | 0.75<br>0.25         |
| MGG005             | 30-300           | 1          | 30<br>300       | 1.5<br>0.8           | 0.75<br>0.25         |
| <b>12 channels</b> |                  |            |                 |                      |                      |
| MGG006             | 0.5-10           | 0.1        | 1<br>10         | 4<br>1.5             | 4<br>1.5             |
| MGG007             | 5-50             | 0.5        | 5<br>50         | 3<br>1               | 2<br>0.7             |
| MGG008             | 10-100           | 1          | 10<br>100       | 1.5<br>1             | 1.5<br>0.5           |
| MGG009             | 20-200           | 1          | 20<br>200       | 1.5<br>0.7           | 0.75<br>0.25         |
| MGG010             | 30-300           | 1          | 30<br>300       | 1.5<br>0.8           | 0.75<br>0.25         |



## MGJ - Repeater pipettes

## DIGIPETTE

## Manual dispenser



- 1| Ideal for saving time and speeding up long serial pipetting operation.
- 2| Ergonomic design that allows one-hand handling.
- 3| Suitable for all types of viscosities with guarantee of precision and accuracy.
- 4| Safe design to avoid pipette contamination or cross contamination.

| Code   | Description                             |
|--------|-----------------------------------------|
| MGJ001 | Manual dispenser Digipette 10 - 5000 μl |



## MGM - Electrónicas

## Pipeta digital DosyPette

## DIGIPETTE



- 1| Functions of pipetting, mixing, stepper and dilution
- 2| High accuracy, high performance stepper motor assures precision and repeatability and eliminates manual pipetting errors
- 3| Self calibration: connecting the pipette to a PC through the USB port the user can calibrate the pipette by using the specific software..
- 4| Autoclavable low part.
- 5| Adjustable speeds for aspiration and dispensing

| Code   | Volume<br>(uL) | Increments<br>(uL) | Vol. test<br>(uL) | Inexactitud<br>(uL) | %                | Imprecisión<br>SD (uL) | CV%          |
|--------|----------------|--------------------|-------------------|---------------------|------------------|------------------------|--------------|
| MGM039 | 0.5-10         | 0.01               | 10<br>1           | ± 0.10<br>± 0.03    | ± 1.0<br>± 3.5   | 0.05<br>0.03           | 0.50<br>3.00 |
| MGM040 | 5-50           | 0.1                | 50<br>5           | ± 0.40<br>± 0.15    | ± 0.80<br>± 3.00 | 0.15<br>0.12           | 0.30<br>2.50 |
| MGM041 | 30-300         | 1                  | 300<br>30         | ± 1.80<br>± 0.9     | ± 0.60<br>± 3.00 | 0.60<br>0.21           | 0.20<br>0.70 |
| MGM042 | 100-1000       | 5                  | 1000<br>100       | ± 6.00<br>± 3.00    | ± 0.60<br>± 3.00 | 2.00<br>0.60           | 0.20<br>0.60 |



## ▶ MGT - Stands

### ▶ Stands

**DIGIPETTE**

1 | Made of acrylic. Allows up to 6 automatic pipettes.

| Code   | Description               |
|--------|---------------------------|
| MGT001 | Stand for 6 micropipettes |



## ▶ MJB - 10 µL

### ▶ Capacity 0.1 - 10 µL

**DIGIPETTE**

1 | Made of polypropylene, fully autoclavables.

| Code   | Colour  | Pack            |
|--------|---------|-----------------|
| MJB011 | Neutral | 1000 us. / bags |



## ▶ MJJ - 200 µL

### ▶ Capacity 2 - 200 µL

**DIGIPETTE**

1 | Made of polypropylene, fully autoclavables.

| Code   | Colour | Pack            |
|--------|--------|-----------------|
| MJJ016 | Yellow | 1000 us. / bags |



## ▶ MJN - 1000 µL

### ▶ Capacity 1000 µL

**DIGIPETTE**

1 | Made of polypropylene, fully autoclavables.

| Code   | Colour | Pack |
|--------|--------|------|
| MJN015 | Blue   | 500  |



## ▶ MJQ - 2 - 5 -10000 mL

### ▶ Capacidad 1000 - 5000 mL

**DIGIPETTE**

1 | Made of polypropylene, fully autoclavables.

| Code   | Colour | Pack |
|--------|--------|------|
| MJQ009 | Blue   | 300  |





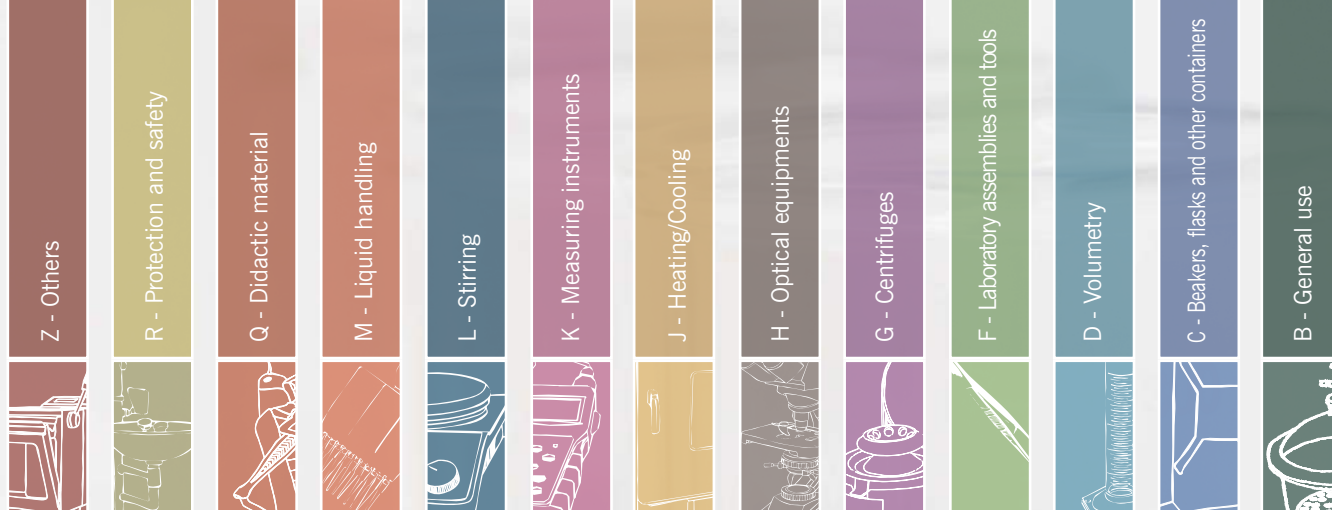
## MJV - Syringes for repeater pipettes

## ▶ Dispenser tip



1 | Non-sterile unique-use tips made of high quality plastic.

| Code   | Volume  | Range            | Accuracy    |
|--------|---------|------------------|-------------|
| MJV017 | 0.5 ml  | 10-50 $\mu$ L    | $\pm 0.9$ % |
| MJV018 | 1.25 ml | 25-125 $\mu$ L   | $\pm 0.9$ % |
| MJV019 | 2.5 ml  | 50-250 $\mu$ L   | $\pm 0.8$ % |
| MJV020 | 5 ml    | 100-500 $\mu$ L  | $\pm 0.6$ % |
| MJV021 | 12.5 ml | 250-1250 $\mu$ L | $\pm 0.4$ % |



## [P] INDEX OF CONTENTS FILTRATION AND SEPARATION

|                                          |            |                                          |            |
|------------------------------------------|------------|------------------------------------------|------------|
| <b>[PB] Glass apparatus/Pieces .....</b> | <b>214</b> | <b>[PN] Funnels .....</b>                | <b>233</b> |
| PBB - Glass sets .....                   | 214        | PNB - Short stem, glass .....            | 233        |
| PBC - Soxhlet extractors .....           | 216        | PNC - Short stem, plastic .....          | 233        |
| PBD - Soxhlet extractors, thimbles ..... | 217        | PNF - Buchner, porcelain .....           | 233        |
| PBF - Glass balls .....                  | 217        | PNG - Buchner, glass .....               | 234        |
| PBG - Flasks, distillation .....         | 217        | PNM - For liquid transfer, plastic ..... | 235        |
| PBH - Flasks, Erlenmeyer .....           | 218        | PNZ - others .....                       | 235        |
| PBJ - Flasks, evaporation .....          | 218        | <b>[PQ] Separating funnels .....</b>     | <b>235</b> |
| PBK - Flasks, flat bottom .....          | 219        | PQB - Squibb .....                       | 235        |
| PBL - Flasks, round bottom .....         | 219        | PQD - Gilson .....                       | 235        |
| PBM - Flasks, pear-shape .....           | 220        | PQL - Cylindrical .....                  | 236        |
| PBN - Condensers .....                   | 220        | <b>[PS] Filter paper .....</b>           | <b>236</b> |
| PBP - Distillation columns .....         | 222        | PSB - Standard .....                     | 236        |
| PBQ - Connectors/Adapters .....          | 222        | PSC - Qualitative, very slow .....       | 237        |
| PBR - Extractor bodies .....             | 224        | PSD - Qualitative, slow .....            | 237        |
| PBV - Tubes .....                        | 224        | PSF - Qualitative, medium .....          | 238        |
| PBZ - Others .....                       | 225        | PSG - Qualitative, fast .....            | 240        |
| <b>[PD] Water purification .....</b>     | <b>225</b> | PSH - Qualitative, very fast .....       | 242        |
| PDB - Demineralizers .....               | 225        | PSK - Quantitative, slow .....           | 243        |
| PDD - Demineralizers, accessories .....  | 226        | PSL - Quantitative, medium .....         | 243        |
| PDG - Distillers .....                   | 226        | PSM - Quantitative, fast .....           | 244        |
| PDJ - Distillers, accessories .....      | 227        | PSN - Quantitative, very fast .....      | 245        |
| <b>[PG] Rotary evaporators .....</b>     | <b>227</b> | PSP - Glass fiber .....                  | 245        |
| PGB - Evaporators .....                  | 227        | PSR - Membrane filters .....             | 246        |
| PGG - Accessories .....                  | 228        | PSX - Reams .....                        | 248        |
| <b>[PJ] Filtration systems .....</b>     | <b>229</b> | PSZ - Others .....                       | 248        |
| PJB - Filtration units/Manifolds .....   | 229        | <b>[PV] Syringe filters .....</b>        | <b>250</b> |
| PJD - Accessories .....                  | 230        | PVB - Cellulose acetate/nitrate .....    | 250        |
| PJH - Filtering flasks .....             | 231        | PVZ - Others .....                       | 251        |
| <b>[PL] Filtration crucibles .....</b>   | <b>232</b> | <b>[PX] Vacuum pumps .....</b>           | <b>252</b> |
| PLB - Gooch .....                        | 232        | PXB - Membrane pumps .....               | 252        |
| PLG - With poreus plates .....           | 232        | PXL - Water jet pumps .....              | 252        |
|                                          |            | <b>[PZ] Others .....</b>                 | <b>252</b> |
|                                          |            | PZB - Chromatography .....               | 252        |

### TRADEMARKS:



## PBB - Glass sets

### Simple-fractional distillation set



The main objective of distillation is to separate a liquid blend whose components have different boiling points, or to separate volatile components from non-volatile ones.

It can be conducted in one single evaporation/condensation process, as it happens in simple distillation, or through successive simple distillations that take place in a fractioning column, as it happens in frac-

tional distillation, with a progressive enrichment of the blend in the more volatile component and that is used when the boiling points of the components differ in less than 25°C.

- 1 | Made in borosilicate glass with 29/32 ground joints
- 2 | Supplied in a case for storage and transportation



| Code   | Description                         |
|--------|-------------------------------------|
| PBB001 | Simple distillation set, 250 mL     |
| PBB002 | Fractional distillation set, 250 mL |

Composed of:

| Code   | Description                                     |
|--------|-------------------------------------------------|
| PBL015 | Round bottom flask 250 mL                       |
| PBQ028 | 75° bent adapter for thermometer                |
| PBN010 | Liebig condenser 300 mm                         |
| PBQ031 | Bent distillation adapter 100 mm                |
| KJB011 | Thermometer of -10/110°C                        |
| FCM010 | Clip (POM) for ground joints 29/32 (3 uds)      |
| PBP002 | Vigreux column 320 mm (fractional distillation) |

\*Mounting stand not included

### Garcia Tena set



Routine control of volatile acidity (volatile fatty acids of the acetic series) during the elaboration process of wine, cider, etc, allows determining the fermentation state of grape juice, and given that its content is limited by law, establishing the quality of the final product and foreseeing its conservation requirements.

Among the diverse methods used for its determination, it is the Garcia Tena method, approximate method through which the concentration of acetic acid, secondary product mainly coming from alcoholic fermentation, is determined.

- 1 | Made of borosilicate glass with 14/23 ground joints
- 2 | Supplied with a case for storage and transportation



| Code   | Description     |
|--------|-----------------|
| PBB003 | García Tena set |

Composed of:

| Code   | Description                                           |
|--------|-------------------------------------------------------|
| CDB013 | Erlenmeyer flask, 50 ml                               |
| DNB007 | Graduated burette, 10 ml                              |
| PBN006 | Liebig condenser 120 mm                               |
| DJJ005 | Volumetric pipette 1 mark, 11 ml                      |
| PBZ001 | Volumetric cylinder 5.1 ml                            |
| PBZ002 | Volumetric cylinder 3.2 ml                            |
| FFJ002 | Alcohol lamp 100 ml                                   |
| PNB001 | Short stem funnel, 40 mm                              |
| PBL004 | Round bottom flask, 50 ml                             |
| PBQ034 | Double bent piece, 14/23                              |
| FCG008 | Clamp with rotary bosshead (2 uds)                    |
| FCB006 | Retort stand 100x175mm                                |
| FCM007 | Clip (POM) for ground joints 14/23 (2uds)             |
| FCV006 | Closed retort ring with bosshead 80 mm                |
| KJB011 | Yellow solid stem thermometer colour spirit -10/110°C |

## PBB - Glass sets

### ► Microscale standard kit



- 1| Complete ground glass kit for basic laboratory assemblies
- 2| Specially indicated for practical lessons of organic/inorganic chemistry
- 3| Made of borosilicate glass with 14/23 ground joints
- 4| Extension kit available to assemble more complex arrangements
- 5| Supplied with case for storage and transportation

| Code   | Description                           |
|--------|---------------------------------------|
| PBB004 | Microscale standard kit, ground 14/23 |

Composed of:

| Code   | Description                              |
|--------|------------------------------------------|
| PBN009 | Liebig condenser 200 mm                  |
| PQL001 | Addition funnel 25 mL                    |
| PBM001 | Pear shaped flask 25 mL                  |
| PBM003 | Pear shaped flask 3 necks (14/23) 100 mL |
| PBL001 | Round bottom flask 10 mL                 |
| PBL004 | Round bottom flask 50 mL                 |
| BMC013 | Glass stopper                            |
| BMC016 | Glass stopper with groove                |
| PBQ026 | Thermometer adapter threaded top         |
| PBQ027 | 75° bent adapter for thermometer         |
| PBQ029 | Connecting adapter with hose             |
| PBQ030 | Bent distillation adapter 80 mm          |
| PBV004 | Storage tube with hose connection 20 mL  |
| KJB013 | Thermometer -10/200°C                    |



### ► Microscale standard kit extension



| Code   | Description                                     |
|--------|-------------------------------------------------|
| PBB005 | Microscale standard kit extension, ground 14/23 |

Composed of:

| Code   | Description                             |
|--------|-----------------------------------------|
| LDR003 | Stirring rod 5/6x300 mm                 |
| PBN029 | Cold finger condenser                   |
| PBM002 | Pear shaped flask 2 necks (14/23) 50 mL |
| PBL001 | Round bottom flask 10 mL                |
| BMC013 | Glass stopper                           |
| PBQ026 | Thermometer adapter threaded top        |
| PBP001 | Vigreux column with jacket 250 mm       |
| PBQ032 | Claisen adapter                         |
| PBQ033 | Receiver adapter for 2 flasks           |
| PBZ003 | Willstatter filter 50 mm                |
| PBV003 | Drying tube                             |





## PBC - Soxhlet extraction systems



Soxhlet extraction system allows a solid-liquid type extraction to obtain active principles or to purify substances based on their solubility in certain solvents. Through a cyclical process of evaporation/condensation of the solvent, normally of organic nature (ether, ethanol, benzene, etc), lipid components (essential oils, fats, etc) are dissolved and extracted from a given sample

- 1 | Made of borosilicate glass
- 2 | Kit composed of round flask, extractor body and Dimroth condenser
- 3 | Cellulose cotton extraction thimbles available (consult pag. 365)

## ► 50 mL



| Code   | Description                      |
|--------|----------------------------------|
| PBC001 | Soxhlet extraction system, 50 ml |

Composed of:

| Code   | Description               | Ground        | Batch |
|--------|---------------------------|---------------|-------|
| PBN026 | Dimroth condenser         | 29/32         | -     |
| PBR001 | Extractor body            | 19/26 y 29/32 | -     |
| PBK003 | Flat bottom flask, 100 mL | 19/26         | 10    |

## Recommended thimbles

PBD006 Extraction thimbles 30x26x100mm\*

\* Not included

## ► 125 mL



| Code   | Description                       |
|--------|-----------------------------------|
| PBC002 | Soxhlet extraction system, 125 ml |

Composed of:

| Code   | Description               | Ground        | Batch |
|--------|---------------------------|---------------|-------|
| PBN027 | Dimroth condenser         | 45/40         | -     |
| PBR002 | Extractor body            | 29/32 y 45/40 | -     |
| PBK008 | Flat bottom flask, 250 mL | 29/32         | 10    |

## Recommended thimbles

PBD008 Extraction thimbles 36x33x80 mm\*

\* Not included

## ► 250 mL



| Code   | Description                       |
|--------|-----------------------------------|
| PBC003 | Soxhlet extraction system, 250 ml |

Composed of:

| Code   | Description               | Ground        | Batch |
|--------|---------------------------|---------------|-------|
| PBN028 | Dimroth condenser         | 55/44         | -     |
| PBR004 | Extractor body            | 29/32 y 55/44 | -     |
| PBK010 | Flat bottom flask, 500 mL | 29/32         | 10    |

## Recommended thimbles

PBD010 Extraction thimbles 36x33x100 mm\*-

\* Not included



## PBD - Soxhlet extraction systems, thimbles

- 1| Made of high mechanical resistant pure fat-free cellulose cotton
- 2| For solid-liquid Soxhlet, Kumagawa type extraction and other extraction equipments
- 3| Application in food industry, analyses of atmospheric contamination, cosmetics, pharmacology, etc.

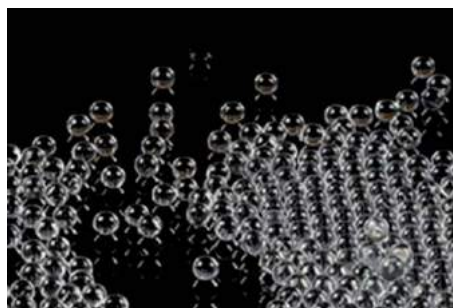
| Code   | Int. Ø | Ext. Ø | Height | Box of (uds) |
|--------|--------|--------|--------|--------------|
| PBD001 | 14 mm  | 16 mm  | 30 mm  | 25           |
| PBD003 | 19 mm  | 22 mm  | 90 mm  | 25           |
| PBD002 | 18 mm  | 22 mm  | 60 mm  | 25           |
| PBD004 | 22 mm  | 26 mm  | 60 mm  | 25           |
| PBD005 | 23 mm  | 27 mm  | 80 mm  | 25           |
| PBD006 | 26 mm  | 30 mm  | 100 mm | 25           |
| PBD007 | 29 mm  | 34 mm  | 80 mm  | 25           |
| PBD008 | 33 mm  | 36 mm  | 80 mm  | 25           |
| PBD009 | 33 mm  | 36 mm  | 94 mm  | 25           |
| PBD010 | 33 mm  | 36 mm  | 100 mm | 25           |
| PBD011 | 34 mm  | 37 mm  | 130 mm | 25           |
| PBD012 | 37 mm  | 41 mm  | 123 mm | 25           |
| PBD013 | 38 mm  | 41 mm  | 150 mm | 25           |
| PBD014 | 41 mm  | 47 mm  | 123 mm | 25           |
| PBD015 | 46 mm  | 52 mm  | 165 mm | 25           |
| PBD016 | 54 mm  | 58 mm  | 170 mm | 25           |
| PBD017 | 58 mm  | 62 mm  | 170 mm | 25           |
| PBD018 | 65 mm  | 70 mm  | 240 mm | 25           |
| PBD019 | 75 mm  | 80 mm  | 200 mm | 25           |
| PBD020 | 75 mm  | 80 mm  | 250 mm | 25           |
| PBD021 | 92 mm  | 95 mm  | 250 mm | 25           |



## PBF - Glass beads

- 1| Made of sodocalcic glass

| Code   | Diameter | Bag of |
|--------|----------|--------|
| PBF001 | 2 mm     | 1 kg   |
| PBF002 | 3 mm     | 1 kg   |
| PBF003 | 4 mm     | 1 kg   |
| PBF004 | 5 mm     | 1 kg   |
| PBF005 | 6 mm     | 1 kg   |
| PBF006 | 7 mm     | 1 kg   |
| PBF007 | 8 mm     | 1 kg   |



## PBG - Flasks, distillation

- 1| Made of borosilicate glass

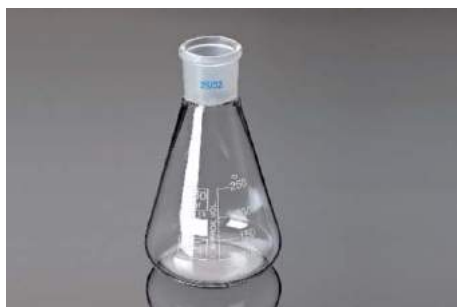
| Code   | Cap.    | Neck Ø | Height | Arm Ø | Arm L  | Batch |
|--------|---------|--------|--------|-------|--------|-------|
| PBG001 | 100 mL  | 15 mm  | 174 mm | 7 mm  | 100 mm | 6     |
| PBG002 | 250 mL  | 19 mm  | 216 mm | 8 mm  | 120 mm | 12    |
| PBG003 | 500 mL  | 24 mm  | 275 mm | 8 mm  | 150 mm | 12    |
| PBG004 | 1000 mL | 28 mm  | 320 mm | 9 mm  | 180 mm | 4     |





## PBH - Flasks, Erlenmeyer

## Ground socket



- 1| Ground neck for connection and assemblies
- 2| White graduation
- 3| Made of borosilicate glass
- 4| According to USP/ISO4797 standards except items (\*)
- 5| For other volumes or ground joints, consult

| Code    | Capacity | Ground | Ø (base) | Height | Batch |
|---------|----------|--------|----------|--------|-------|
| PBH001* | 25 mL    | 14/23  | 42 mm    | 75 mm  | 10    |
| PBH002* | 25 mL    | 19/26  | 42 mm    | 75 mm  | 10    |
| PBH003  | 50 mL    | 14/23  | 51 mm    | 85 mm  | -     |
| PBH004  | 50 mL    | 19/26  | 51 mm    | 85 mm  | 10    |
| PBH005* | 50 mL    | 24/29  | 64 mm    | 85 mm  | 10    |
| PBH006  | 50 mL    | 29/32  | 64 mm    | 85 mm  | 10    |
| PBH007* | 100 mL   | 14/23  | 64 mm    | 105 mm | 10    |
| PBH008  | 100 mL   | 19/26  | 64 mm    | 105 mm | 10    |
| PBH009* | 100 mL   | 24/29  | 64 mm    | 105 mm | 10    |
| PBH010  | 100 mL   | 29/32  | 64 mm    | 105 mm | 10    |
| PBH011  | 150 mL   | 19/26  | -        | -      | 10    |
| PBH012  | 150 mL   | 29/32  | -        | -      | 10    |
| PBH013  | 250 mL   | 19/26  | 85 mm    | 140 mm | 10    |
| PBH014  | 250 mL   | 24/29  | 85 mm    | 140 mm | 10    |
| PBH015  | 250 mL   | 29/32  | 85 mm    | 140 mm | 10    |
| PBH016  | 500 mL   | 24/29  | 105 mm   | 175 mm | 10    |
| PBH017  | 500 mL   | 29/32  | 105 mm   | 175 mm | 10    |
| PBH018* | 1000 mL  | 29/32  | 131 mm   | 220 mm | 10    |
| PBH019  | 2000 mL  | 29/32  | 166 mm   | 280 mm | 6     |

## Ground cone



- 1| Suitable for filtration assemblies
- 2| Made of borosilicate glass, not graduated

| Code   | Capacity | Ground (C) |
|--------|----------|------------|
| PBH030 | 1000 mL  | 40/35      |



## PBJ - Flasks, evaporation

## Flasks, evaporation



- 1| Evaporating flask suitable for rotary evaporators
- 2| Made of borosilicate glass and ground neck

| Code   | Capacity | Ground (S) | Batch |
|--------|----------|------------|-------|
| PBJ001 | 50 mL    | 29/32      | 10    |
| PBJ002 | 100 mL   | 29/32      | 10    |
| PBJ003 | 250 mL   | 29/32      | 10    |
| PBJ004 | 500 mL   | 29/32      | 10    |
| PBJ005 | 1000 mL  | 29/32      | 10    |
| PBJ006 | 2000 mL  | 29/32      | 6     |

## ▶ PBK - Flasks, flat bottom

### ▶ Flasks, flat bottom



- 1 | Flat bottom round flask with ground neck
- 2 | Made of borosilicate glass
- 3 | According to USP and ISO/DIN 4797 standards
- 4 | For other volumes or ground joints, consult

| Code   | Capacity | Ground | Height | Ø (base) | Batch |
|--------|----------|--------|--------|----------|-------|
| PBK001 | 50 mL    | 14/23  | 85 mm  | 51 mm    | 10    |
| PBK002 | 50 mL    | 29/32  | 85 mm  | 51 mm    | 10    |
| PBK003 | 100 mL   | 19/26  | 103 mm | 64 mm    | 10    |
| PBK004 | 100 mL   | 24/29  | 103 mm | 50 mm    | 10    |
| PBK005 | 100 mL   | 29/32  | 103 mm | 64 mm    | 10    |
| PBK006 | 250 mL   | 19/26  | 130 mm | 85 mm    | 10    |
| PBK007 | 250 mL   | 24/29  | 130 mm | 85 mm    | 10    |
| PBK008 | 250 mL   | 29/32  | 130 mm | 85 mm    | 10    |
| PBK009 | 500 mL   | 24/29  | 160 mm | 103 mm   | 10    |
| PBK010 | 500 mL   | 29/32  | 160 mm | 160 mm   | 10    |
| PBK011 | 1000 mL  | 24/29  | 187 mm | 131 mm   | 10    |
| PBK012 | 1000 mL  | 29/32  | 187 mm | 131 mm   | 10    |
| PBK013 | 2000 mL  | 29/32  | 230 mm | 166 mm   | 6     |



## ▶ PBL - Flasks, round bottom

### ▶ 1 neck



- 1 | Round bottom spherical flask with ground neck
- 2 | Made of borosilicate glass
- 3 | According to USP and ISO/DIN 4797 standards except items (\*)
- 4 | For other volumes or ground joints, consult

| Code    | Capacity | Ground | Height | Ø (base) | Batch |
|---------|----------|--------|--------|----------|-------|
| PBL001  | 10 mL    | 14/23  | 35 mm  | 70 mm    | 10    |
| PBL002  | 25 mL    | 14/23  | 85 mm  | 41 mm    | 10    |
| PBL003* | 25 mL    | 19/26  | 85 mm  | 41 mm    | 10    |
| PBL004  | 50 mL    | 14/23  | 90 mm  | 51 mm    | 10    |
| PBL005  | 50 mL    | 19/26  | 90 mm  | 51 mm    | 10    |
| PBL006  | 50 mL    | 24/29  | 115 mm | 51 mm    | 10    |
| PBL007  | 50 mL    | 29/32  | 115 mm | 51 mm    | 10    |
| PBL008  | 100 mL   | 14/23  | 105 mm | 64 mm    | 10    |
| PBL009  | 100 mL   | 19/26  | 105 mm | 64 mm    | 10    |
| PBL010  | 100 mL   | 24/29  | 105 mm | 64 mm    | 10    |
| PBL011  | 100 mL   | 29/32  | 105 mm | 64 mm    | 10    |
| PBL012  | 250 mL   | 14/23  | 140 mm | 85 mm    | 10    |
| PBL013  | 250 mL   | 19/26  | 140 mm | 85 mm    | 10    |
| PBL014  | 250 mL   | 24/29  | 140 mm | 85 mm    | 10    |
| PBL015  | 250 mL   | 29/32  | 140 mm | 85 mm    | 10    |



### ▶ 1 neck



- 1 | Round bottom spherical flask with ground neck
- 2 | Made of borosilicate glass
- 3 | According to USP and ISO/DIN 4797 standards except items (\*)
- 4 | For other volumes or ground joints, consult

| Code    | Capacity | Ground | Height | Ø (base) | Batch |
|---------|----------|--------|--------|----------|-------|
| PBL016* | 500 mL   | 19/26  | 163 mm | 105 mm   | 10    |
| PBL017  | 500 mL   | 24/29  | 163 mm | 105 mm   | 10    |
| PBL018  | 500 mL   | 29/32  | 163 mm | 105 mm   | 10    |
| PBL019  | 1000 mL  | 24/29  | 200 mm | 131 mm   | 10    |
| PBL020  | 1000 mL  | 29/32  | 200 mm | 131 mm   | 10    |
| PBL021  | 2000 mL  | 24/29  | 240 mm | 166 mm   | 10    |
| PBL022  | 2000 mL  | 29/32  | 240 mm | 166 mm   | 10    |



## ▶ PBL - Flasks, round bottom

### ▶ 2-3 necks



- 1 | Round bottom spherical flask with ground neck
- 2 | Made of borosilicate glass
- 3 | According to USP and ISO/DIN 12394
- 4 | For other volumes or ground joints, consult

| Code   | Capacity | Necks | Ground 1 | Ground 2 | Ground 1 | Height |
|--------|----------|-------|----------|----------|----------|--------|
| PBL028 | 250 mL   | 2     | 24/29    | 19/26    | --       | 140 mm |
| PBL029 | 500 mL   | 2     | 24/29    | 19/26    | --       | 163 mm |
| PBL030 | 1000 mL  | 3     | 29/32    | 29/32    | 29/32    | 200 mm |

## ▶ PBM - Flasks, pear-shape



| Code   | Capacity | Ground (S) | Necks |
|--------|----------|------------|-------|
| PBM001 | 25 mL    | 14/23      | 1     |
| PBM002 | 50 mL    | 14/23      | 2     |
| PBM003 | 100 mL   | 14/23      | 3     |
| PBM004 | 250 mL   | 29/32      | 1     |

## ▶ PBN - Condensers

### ▶ Allihn (with balls)



- 1 | Balls condenser with double ground neck
- 2 | Made of borosilicate glass

| Code   | L. (useful) | L (total) | Grounds |
|--------|-------------|-----------|---------|
| PBN001 | 160 mm      | 280 mm    | 14/23   |
| PBN002 | 250 mm      | 386 mm    | 29/32   |

### ▶ Liebig West



- 1 | Condenser with jacket and double ground neck except (\*).
- 2 | Made of borosilicate glass

| Code    | L. (useful) | L (total) | Grounds   |
|---------|-------------|-----------|-----------|
| PBN005  | 100 mm      | 220 mm    | 14/23     |
| PBN006* | 120 mm      | 250 mm    | 14/23 (H) |
| PBN007  | 150 mm      | 270 mm    | 14/23     |
| PBN008  | 200 mm      | 350 mm    | 19/26     |
| PBN009  | 200 mm      | 310 mm    | 14/23     |
| PBN010  | 300 mm      | 460 mm    | 29/32     |
| PBN011  | 300 mm      | 450 mm    | 19/26     |
| PBN012  | 400 mm      | 560 mm    | 29/32     |
| PBN013  | 400 mm      | 570 mm    | 19/26     |

## ▶ PBN - Condensers

### ▶ Liebig West without ground joint



| Code   | L. (useful) | L (total) |
|--------|-------------|-----------|
| PBN014 | 200 mm      | 350 mm    |
| PBN015 | 200 mm      | 400 mm    |



### ▶ Coil condenser



- 1| It has an inner coil through which vapour flows and condenses
- 2| The refrigerating liquid flows through the external jacket
- 3| Made of borosilicate glass

| Code   | L. (useful) | L (total) | Grounds    |           |
|--------|-------------|-----------|------------|-----------|
|        |             |           | Socket (S) | Cone (C)) |
| PBN016 | 120 mm      | 195 mm    | –          | –         |
| PBN017 | 120 mm      | 205 mm    | 14/23      | –         |
| PBN018 | 120 mm      | 215 mm    | 14/23      | 14/23     |
| PBN019 | 160 mm      | 270 mm    | 14/23      | –         |
| PBN020 | 200 mm      | 300 mm    | –          | 45/40     |
| PBN021 | 250 mm      | 400 mm    | 19/26      | –         |
| PBN022 | 350 mm      | 460 mm    | –          | –         |
| PBN023 | 350 mm      | 470 mm    | 29/32      | –         |

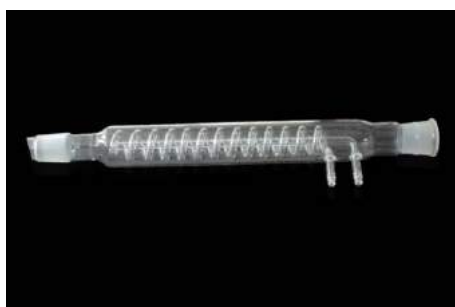


### ▶ Dimroth



- 1| It has an inner coil through which the refrigerating liquid flows
- 2| The vapour flows through the coil exterior
- 3| Made of borosilicate glass

| Code   | L. (useful) | L (total) | Grounds    |           |
|--------|-------------|-----------|------------|-----------|
|        |             |           | Socket (S) | Cone (C)) |
| PBN025 | 160 mm      | 300 mm    | 14/23      | 14/23     |
| PBN024 | 250 mm      | 400 mm    | 29/32      | 29/32     |



### ▶ Dimroth for Soxhlet



| Code   | L. (useful) | L (total) | Ground (M) |
|--------|-------------|-----------|------------|
| PBN026 | 160 mm      | 270 mm    | 29/32      |
| PBN027 | 180 mm      | 310 mm    | 45/40      |
| PBN028 | 200 mm      | 360 mm    | 55/44      |





## PBN - Condensers

## ▶ Cold finger condenser



- 1 | It allows having a localized cold spot
- 2 | Made of borosilicate glass

| Code   | Ground (M) | Hose  |
|--------|------------|-------|
| PBN029 | 14/23      | 13 mm |



## PBP - Distillation columns

## ▶ Distilling columns (Vigreux)



- 1 | Suitable for the fractional distillation set
- 2 | Made of borosilicate glass

| Code   | Length | Diameter | Ground | Jacket |
|--------|--------|----------|--------|--------|
| PBP001 | 250 mm | 25 mm    | 14/23  | Yes    |
| PBP002 | 320 mm | 32 mm    | 29/32  | No     |



## PBQ - Connectors/Adapters

## ▶ Double bent piece



| Code   | Diameter | Length | Ground      | Batch |
|--------|----------|--------|-------------|-------|
| PBQ021 | 7 mm     | 160 mm | -           | 10    |
| PBQ022 | 12 mm    | 250 mm | -           | 5     |
| PBQ034 | 7 mm     | 160 mm | 14/23 (C/C) | 10    |
| PBQ035 | 25 mm    | 280 mm | 29/32 (C/C) | 2     |

page  
[222]

## ▶ Thermometer adapters, with threaded top



- 1 | With threaded top to fit a control thermometer

| Code   | Thread | Ground      | Angle |
|--------|--------|-------------|-------|
| PBQ026 | 13     | 14/23 (C)   | -     |
| PBQ027 | 8      | 14/23 (C/C) | 75°   |
| PBQ028 | 18     | 29/32 (C/C) | 75°   |



## ▶ PBQ - Connectors/Adapters

### ▶ Adapter with hose connection



| Code   | Ground      | Hose Ø |
|--------|-------------|--------|
| PBQ029 | 14/23 (C/S) | 10 mm  |



### ▶ Bent distillation adapter



1 | 105° angle

| Code   | Length | Ground | Ø (tube) |
|--------|--------|--------|----------|
| PBQ030 | 80 mm  | 14/23  | 9 mm     |
| PBQ031 | 100 mm | 29/32  | 13 mm    |



### ▶ Claisen thermometer adapters



| Code   | Thread | Ground        | Angle |
|--------|--------|---------------|-------|
| PBQ032 | 13     | 14/23 (S/C/C) | -     |



### ▶ Separating receiver



| Code   | Ground      | Hose Ø |
|--------|-------------|--------|
| PBQ033 | 14/23 (C/S) | 10 mm  |





## PBR - Extractor bodies

## Extractor body



| Code   | Capacity | Ground (C) | Ground (S) |
|--------|----------|------------|------------|
| PBR001 | 50 mL    | 19/26      | 29/32      |
| PBR002 | 125 mL   | 29/32      | 45/40      |
| PBR004 | 250 mL   | 29/32      | 55/44      |



## PBV - Tubes

## Digestion tubes



- 1 | Made of borosilicate glass with thick walls and round bottom  
 2 | Diameter 42 mm

| Code   | Length | Constriction | Digester           |
|--------|--------|--------------|--------------------|
| PBV001 | 300 mm | Yes          | Buchi              |
| PBV002 | 300 mm | No           | Tecator and others |

## Storage tube with hose connection



| Code   | Cap.  | Ground | Hose Ø |
|--------|-------|--------|--------|
| PBV004 | 20 mL | 14/23  | 10 mm  |

## Drying tube



| Code   | Ground |
|--------|--------|
| PBV003 | 14/23  |

## ▶ PBZ - Others

### ▶ Volumetric cylinder



| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| PBZ001 | 5.1 mL   | 12 mm    | 110 mm | 10    |
| PBZ002 | 3.2 mL   | 12 mm    | 110 mm | 10    |



## ▶ PBZ - Others

### ▶ Willstatter filter



1| For the volatile acidity Garcia Tena method

| Code   | Ground | Diameter |
|--------|--------|----------|
| PBZ003 | 14/23  | 45 mm    |



## ▶ PDB - Demineralizers

### ▶ Lab-Ion L2 model

- 1| Wall demineralizer to obtain distilled water
- 2| Calcination residue under 1mg/liter
- 3| Replacement cartridge filled with special resin, bio-degradable and economic
- 4| Supplied complete with wall support

|                   |                      |
|-------------------|----------------------|
| Code              | PDB001               |
| Ultra-pure water  | 0,1-20 $\mu$ S/cm    |
| Production (max.) | 40 L/h (at 4 bar)    |
| Capacity (máx.)   | 810 L (at 5°dH)      |
| Resin             | Disposable mixed bed |
| Dimensions        | 115 x 515 mm         |
| Power supply      | 110-220V, 50/60 Hz   |



### ▶ Micromatic model

- 1| Purifies tap water to Type II Analytical Grade Water for general laboratory use
- 2| Digital interface and microprocessor control for:
  - Continuous monitoring of the produced water
  - Control of the state of the device (in production, full tank, fuse...)
- 3| Quick and easy maintenance without necessity of regular cleaning with acids
- 4| Ecological: significant savings in natural resources such as electricity and water
- 5| The equipment is delivered calibrated from factory (SGC ISO9001)

|                            |                     |            |
|----------------------------|---------------------|------------|
| Code                       | PDB003              | PDB002     |
| Production flow            | 2,5 L/h             |            |
| Conductivity               | < 1 $\mu$ S/cm      |            |
| Silica removal             | >99%                |            |
| Reverse osmosis efficiency | 95/99%              |            |
| Tank                       | No                  | Yes (25 L) |
| Dimensions                 | 45x25x40 cm         |            |
| Power                      | 100-240 V, 50-60 Hz |            |
| Weight in operation        | 9 kg                |            |





## PDD - Demineralizers, accessories

## CHART 1: 'Accessories demineralizer LAB-Ion L2'

|                                                                                   | Code   | Description                                 | Model                                                                               |                                                                                     |
|-----------------------------------------------------------------------------------|--------|---------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                   |        |                                             | Lab-Ion L2                                                                          | Micromatic                                                                          |
|  | PDD001 | Cartridge for demineralizer                 |  |                                                                                     |
|  | PDD002 | Pretreatment cartridges,<br>Pack of 2 units |                                                                                     |  |
|  | PDD003 | Resin cartridges<br>Pack of 4 units         |                                                                                     |  |
|                                                                                   | PDD004 | Osmosis cartridge 3 L/h                     |                                                                                     |  |



= Accessory included with the indicated equipment



= Accessory compatible with the indicated equipment



## PDG - Distillers

## Glass, model Basic pH4

RS Lab



- 1 | Continuous distilled water production
- 2 | It has a safety thermostat
- 3 | Robust heating block with chromeplated resistance. Borosilicate glass set

|                              |                    |
|------------------------------|--------------------|
| Code                         | PDG001             |
| Production                   | 4 L/h              |
| Conductivity (running water) | 3.0-4.0 $\mu$ S/cm |
| Conductivity (treated water) | 1.5-2.0 $\mu$ S/cm |
| pH                           | 5.5-6.0            |
| Resistance                   | 1 x 3000 W         |
| Dimensions                   | 50x15x45 cm        |
| Power supply                 | 220V, 50Hz         |
| Weight                       | 6 kg               |

## Glass, model Quartz

nahita  
blue

- 1 | Continuous distilled water production. Quartz resistance
- 2 | Safety system with water entry flow sensor
- 3 | Made completely of high quality borosilicate glass
- 4 | With adapted support for wall mounting

|                              |                    |
|------------------------------|--------------------|
| Code                         | PDG002             |
| Production                   | 4 L/h              |
| Conductivity (running water) | 2 $\mu$ S/cm       |
| Conductivity (treated water) | 1,0 L/min          |
| Resistance                   | 1 x 2500 W         |
| Dimensions                   | 55x15x50 cm        |
| Power supply                 | 230V, 50/60Hz, 11A |
| Weight                       | 4 kg               |

## ▶ PDG - Distillers

### ▶ Model 4000



- 1| Detachable safety frontal display in semitransparent acrylic
- 2| Safety system with water entry flow sensor
- 3| Heating resistances protected with a quartz sheath
- 4| Borosilicate glass set

|                              |                     |
|------------------------------|---------------------|
| Code                         | PDG003              |
| Production                   | 4 L/h               |
| Conductivity (running water) | 2 $\mu$ S/cm        |
| Conductivity (treated water) | 1,4 L/min           |
| Resistance                   | 2 x 2500 W          |
| Dimensions                   | 55x22x40 cm         |
| Power supply                 | 230V, 50/60Hz, 13 A |
| Weight                       | 12 kg               |



## ▶ PDJ - Distillers, accessories

**CHART 2:** 'Accessories distillers Basic pH 4 and Quartz'

| Code   | Description                   | For model  |
|--------|-------------------------------|------------|
| PDJ001 | Heating block with resistance | Basic pH 4 |
| PDJ002 | Set of joints and connectors  | Basic pH 4 |
| PDJ003 | Hose set                      | Basic pH 4 |
| PDJ004 | Glass boiler                  | Basic pH 4 |
| PDJ005 | Glass condenser               | Basic pH 4 |
| PDJ006 | Metal support                 | Basic pH 4 |
| PDJ007 | 2 fixing devices f/ boiler    | Basic pH 4 |
| PDJ008 | Boiler                        | Quartz     |
| PDJ009 | Condenser                     | Quartz     |
| PDJ010 | Level                         | Quartz     |
| PDJ011 | Quartz resistance             | Quartz     |
| PDJ012 | Flow limiter                  | Quartz     |

## ▶ PGB - Evaporators

### ▶ 500 and 503 models



- 1| Stainless steel heating bath with LED digital control (Model 500) and analogic control (Model 503) of the temperature
- 2| Elevating motorized system (Model 500) of the glass set
- 3| Analogic adjustment of the rotation speed
- 4| 29/32 ground joints borosilicate glass set (included). 500 mL evaporating flask

|                   |                     |                  |
|-------------------|---------------------|------------------|
| Code              | PGB001              | PGB002           |
| Model             | 500                 | 503              |
| Bath capacity     | 3 L                 | 3 L              |
| Rotation speed    | 10-90 rpm           |                  |
| Temperature       | RT-100 °C           |                  |
| Inclination angle | 45°                 |                  |
| Head adjustment   | 150 mm<br>Motorized | 150 mm<br>Manual |
| Power supply      | 220V, 50/60Hz       |                  |

REF. PGB002



REF. PGB001



## PGB - Evaporators

## ▶ RS 100-PRO model



- 1 | Large LCD display with continuous digital monitoring
- 2 | Temperature control with adjustable safety circuit
- 3 | Patented condenser (1500 cm<sup>2</sup> condensing surface)
- 4 | Motorized elevator with quick-action system with adjustable final position recognition
- 5 | Patented pressure spring that results in a perfectly hermetic system
- 6 | Double PTFE coating resistant to chemical agents
- 7 | Borosilicate glass set (included). 1 L evaporating flask
- 8 | USB connection for PC control

|                                |                                  |                      |
|--------------------------------|----------------------------------|----------------------|
| Code                           | PGB006                           | PGB007               |
| Model                          | Borosilicate                     | Borosilicate, coated |
| Bath capacity                  | 5 L                              |                      |
|                                | 20-280 rpm (reversible rotation) |                      |
| Temperature                    | RT-180 °C (± 1)                  |                      |
| Timer range                    | 1 a 999 min                      |                      |
| Head trajectory                | 150 mm, motorized                |                      |
| Power                          | 1400 W                           |                      |
| Dimensions (LxWxH)             | 465x457x583 mm                   |                      |
| Power supply                   | 220-240V, 50/60Hz                |                      |
| Protection class (DIN EN60529) | IP20                             |                      |



## PGG - Accessories

## ▶ CHART 3: 'Accessories rotary evaporators model 500 and 503'

|                                                                                     | Code   | Capacity                                    | Model                    |                          |
|-------------------------------------------------------------------------------------|--------|---------------------------------------------|--------------------------|--------------------------|
|                                                                                     |        |                                             | 500                      | 503                      |
|  | PGG001 | Condenser 29/32                             | <input type="checkbox"/> |                          |
|  | PGG002 | Distribution head 29/32                     | <input type="checkbox"/> |                          |
|  | PGG003 | 250 mL flask, 29/32                         | <input type="checkbox"/> |                          |
|  | PGG004 | Inlet pipette with tube and stopcock, 24/29 | <input type="checkbox"/> |                          |
|  | PGG006 | Vapour ducting piece, 29/32                 | <input type="checkbox"/> | <input type="checkbox"/> |
|  | PGG007 | 500 mL flask, 29/32                         | <input type="checkbox"/> | <input type="checkbox"/> |
|  | PGG008 | Condenser ground joint 29/32                |                          | <input type="checkbox"/> |

 = Accessory included with the indicated equipment

☐ = Accessory compatible with the indicated equipment





## PGG - Accessories

## CHART 4: 'Accessories rotary evaporators RSLAB 100-PRO

|                                                                                     | Code   | Description                            | Model<br>RS 100-PRO                                                                   |
|-------------------------------------------------------------------------------------|--------|----------------------------------------|---------------------------------------------------------------------------------------|
|    | PGG014 | Complete vertical glassware, 1L        |    |
|                                                                                     | PGG015 | Complete vertical glassware 1L, coated |                                                                                       |
|    | PGG016 | Flask adapter, 29-32, 24-29            |    |
|                                                                                     | PGG017 | Flask adapter, 29-32, 19-16            |                                                                                       |
|                                                                                     | PGG018 | Flask adapter, 29-32, 14-23            |                                                                                       |
|    | PGG019 | Foam brake piece, 250 mL (29/32)       |    |
|    | PGG020 | Vapour tube piece, ground 29/32        |    |
|   | PGG021 | Seal R-type PTFE                       |   |
|                                                                                     | PGG022 | Sealing stopper for evaporator         |  |
|  | PGG024 | Receiving flask, 100 mL Ground 35-20   |  |
|                                                                                     | PGG025 | Receiving flask, 250 mL Ground 35-20   |                                                                                       |
|                                                                                     | PGG026 | Receiving flask, 500 mL Ground 35-20   |                                                                                       |
|                                                                                     | PGG027 | Receiving flask, 1000 mL Ground 35-20  |                                                                                       |
|                                                                                     | PGG028 | Receiving flask, 2000 mL Ground 35-20  |                                                                                       |

 = Accessory included with the indicated equipment = Accessory compatible with the indicated equipment

## PJB - Filtration units/Manifolds

## Filtration assembly, 300 mL



- 1| Vacuum filtration for analyses of contamination, filtration of solvents for HPLC, etc.
- 2| Borosilicate glass set ground joints 40/32
- 3| Filtration plate (Ø 40 mm) with built-in vacuum connection
- 4| Graduated filtration funnel and anodized aluminum clamp

|              |                                               |
|--------------|-----------------------------------------------|
| Code         | PJB001                                        |
| Composed of: | PJD002      Filtration funnel, 300 mL         |
|              | PJD003      Body with fritted glass disk      |
|              | PBH030      Erlenmeyer flask (40/35), 1000 mL |
|              | PJD006      Anodized aluminum clamp           |





## PJB - Filtration assemblies/manifolds

## ▶ Simple circuit vacuum manifolds



- 1 | Vacuum filtration for microbiological controls, quality control, analyses of water, solvents, etc.
- 2 | Simple circuit vacuum manifolds of 1, 3 and 6 places
- 3 | Made of autoclavable stainless steel (316 L)
- 4 | They have independent keys or control valves
- 5 | Rubber connections included

| Code   | Places | Valve | Hose  | Dimensions    |
|--------|--------|-------|-------|---------------|
| PJB002 | 1      | 90°   | 12 mm | 240x120x90 mm |
| PJB003 | 3      | 90°   | 12 mm | 480x120x90 mm |
| PJB004 | 6      | 90°   | 12 mm | 840x120x90 mm |

## ▶ Double circuit vacuum manifolds



- 1 | Vacuum filtration for microbiological controls, quality control, analyses of water, solvents, etc.
- 2 | Double circuit vacuum manifolds of 3 positions for continuous filtration
- 3 | Made of autoclavable stainless steel (316L)
- 4 | They have independent keys or control valves. Rubber connections included

| Code   | Places | Valve | Hose  | Dimensions    |
|--------|--------|-------|-------|---------------|
| PJB005 | 3      | 90°   | 12 mm | 470x120x90 mm |



## PJD - Accessories

## ▶ CHART 5: 'accessories filtration assembly of 300 mL'

|                                                                                     | Code   | Description                  | Model<br>Filtration assembly |
|-------------------------------------------------------------------------------------|--------|------------------------------|------------------------------|
|  | PJD002 | Filtration funnel of 300 mL  | <input type="checkbox"/>     |
|  | PJD003 | Body with fritted glass disk | <input type="checkbox"/>     |
|  | PJD006 | Anodized aluminum clamp      | <input type="checkbox"/>     |

= Accessory included with the indicated equipment

= Accessory compatible with the indicated equipment

## PJD - Accessories

### CHART 6: 'accessories vacuum manifolds'

|                                                                                     | Code                    | Description                                      | Model                                                                                 |
|-------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |                         |                                                  | Vacuum manifolds                                                                      |
|    | PJD001                  | Glass filter holder, 300 mL                      |    |
|                                                                                     | Composed of:            |                                                  |                                                                                       |
|                                                                                     | PJD002                  | Filtration funnel, 300 mL                        |                                                                                       |
|                                                                                     | PJD004                  | Body with fritted glass disk and silicon stopper |                                                                                       |
|                                                                                     | PJD005                  | Silicon stopper 1 hole f/manifold                |                                                                                       |
|                                                                                     | PJD006                  | Anodized aluminum clamp                          |                                                                                       |
|                                                                                     | PJD007                  | Glass filter holder-manifold connector           |                                                                                       |
|    | PJD008                  | Stainless steel filter holder, 300 mL            |    |
|                                                                                     | PJD009                  | Stainless steel filter holder, 500 mL            |                                                                                       |
|                                                                                     | Composed of:            |                                                  |                                                                                       |
|                                                                                     | PJD011                  | Stainless steel filtration funnel 300 mL*        |                                                                                       |
|                                                                                     | PJD012                  | Stainless steel filtration funnel 500 mL*        |                                                                                       |
|                                                                                     | PJD013                  | Stainless steel filtration body                  |                                                                                       |
|                                                                                     | PJD014                  | Stainless steel grating                          |                                                                                       |
| PJD006                                                                              | Anodized aluminum clamp |                                                  |                                                                                       |
| *They include stainless steel stopper (PJD010)                                      |                         |                                                  |                                                                                       |
|  | PJD010                  | Stainless steel stopper for filtration funnels   |  |
|  | PJD015                  | Silicone cap for double manifold                 |  |

 = Accessory included with the indicated equipment

 = Accessory compatible with the indicated equipment

## PJH - Filtering flasks

### Glass



- 1 | Graduated with white marking area
- 2 | With lateral hose connection to connect vacuum pumps or water jet pumps
- 3 | Borosilicate glass

| Code   | Cap.    | Neck Ø (int.) | Hose Ø | Batch |
|--------|---------|---------------|--------|-------|
| PJH001 | 250 mL  | 30 mm ± 2 mm  | 12 mm  | 6     |
| PJH002 | 500 mL  | 29 mm ± 2 mm  | 12 mm  | 6     |
| PJH003 | 1000 mL | 33 mm ± 2 mm  | 16 mm  | 2     |
| PJH004 | 2000 mL | 40 mm ± 2 mm  | 16 mm  | -     |





## PLB - Gooch

## Gooch crucible



- 1 | Glazed except rim and base
- 2 | With poreus disk and glazed lid with handle

| Code   | Capacity | Diameter | Height |
|--------|----------|----------|--------|
| PLB001 | 15 mL    | 32 mm    | 34 mm  |
| PLB002 | 20 mL    | 36 mm    | 38 mm  |
| PLB003 | 30 mL    | 40 mm    | 46 mm  |

## Gooch crucible



- 1 | With poreus disk; without lid
- 2 | Glazed except rim and base

| Code   | Capacity | Diameter | Height | Batch |
|--------|----------|----------|--------|-------|
| PLB004 | 17 mL    | 30 mm    | 36 mm  | 5     |
| PLB005 | 25 mL    | 35 mm    | 43 mm  | 5     |
| PLB006 | 35 mL    | 39 mm    | 49 mm  | 5     |
| PLB007 | 120 mL   | 60 mm    | 71 mm  | 5     |



## PLG - With poreus plate

## With poreus plate, porcelain



- 1 | Poreus bottom; without lid. Glazed except rim and base

| Code   | Poresity        | Volume | Batch |
|--------|-----------------|--------|-------|
| PLG001 | 6 $\mu\text{m}$ | 8 mL   | 2     |
| PLG004 | 6 $\mu\text{m}$ | 15 mL  | 2     |
| PLG007 | 6 $\mu\text{m}$ | 25 mL  | 2     |
| PLG010 | 6 $\mu\text{m}$ | 35 mL  | 2     |
| PLG013 | 6 $\mu\text{m}$ | 50 mL  | 2     |
| PLG002 | 7 $\mu\text{m}$ | 8 mL   | 2     |
| PLG005 | 7 $\mu\text{m}$ | 15 mL  | 2     |
| PLG008 | 7 $\mu\text{m}$ | 25 mL  | 2     |
| PLG011 | 7 $\mu\text{m}$ | 35 mL  | 2     |
| PLG014 | 7 $\mu\text{m}$ | 50 mL  | 2     |
| PLG003 | 8 $\mu\text{m}$ | 8 mL   | 2     |
| PLG006 | 8 $\mu\text{m}$ | 15 mL  | 2     |
| PLG009 | 8 $\mu\text{m}$ | 25 mL  | 2     |
| PLG012 | 8 $\mu\text{m}$ | 35 mL  | 2     |
| PLG015 | 8 $\mu\text{m}$ | 50 mL  | 2     |

## PNB - Short stem, glass

### Short stem, glass



- 1 | For transferring liquids or filtering solution
- 2 | 60° cone angle and borosilicate glass (\*)

| Code    | Funnel Ø | Cap.   | Stem Ø | Filter Ø   | Batch |
|---------|----------|--------|--------|------------|-------|
| PNB001  | 40 mm    | 10 mL  | 4 mm   | 50-60 mm   | 12    |
| PNB002  | 50 mm    | 30 mL  | 7 mm   | 50-60 mm   | 12    |
| PNB003  | 75 mm    | 100 mL | 9 mm   | 90-110 mm  | 10    |
| PNB004  | 90 mm    | 150 mL | 10 mm  | 110-125 mm | 10    |
| PNB005  | 100 mm   | 200 mL | 11 mm  | 110-125 mm | 8     |
| PNB006* | 120 mm   | 400 mL | 12 mm  | 125-150 mm | 2     |
| PNB007* | 150 mm   | 750 mL | 15 mm  | 150-180 mm | 6     |



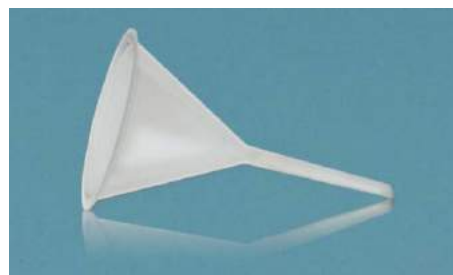
## PNC - Short stem, plastic

### Short stem, plastic



- 1 | Made of autoclavable polypropylene (PP)
- 2 | 60° cone angle and external surface with ribs

| Code   | Ø (cone) | L x Ø (stem) |
|--------|----------|--------------|
| PNC001 | 50 mm    | 50 x 7 mm    |
| PNC002 | 75 mm    | 75 x 9 mm    |
| PNC003 | 100 mm   | 95 x 9 mm    |
| PNC004 | 150 mm   | 110 x 16 mm  |



## PNF - Büchner, porcelain

### Büchner, porcelain



- 1 | Used in vacuum filtration processes
- 2 | With perforated plate to fit filtering paper
- 3 | Glazed

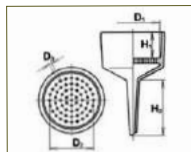
| Code   | Cap.    | Height (total) | int. Ø (total) | middle Ø (total) | Batch |
|--------|---------|----------------|----------------|------------------|-------|
| PNF001 | 30 mL   | 70 mm          | 40 mm          | 13 mm            | 12    |
| PNF002 | 50 mL   | 80 mm          | 50 mm          | 15 mm            | 12    |
| PNF003 | 120 mL  | 125 mm         | 70 mm          | 20 mm            | 4     |
| PNF004 | 200 mL  | 145 mm         | 95 mm          | 21 mm            | 4     |
| PNF005 | 400 mL  | 165 mm         | 110 mm         | 26 mm            | 2     |
| PNF006 | 600 mL  | 170 mm         | 125 mm         | 30 mm            | 2     |
| PNF007 | 1000 mL | 195 mm         | 135 mm         | 33 mm            | --    |





## PNF - Büchner, porcelain

## Büchner, porcelain



- 1 | Used in vacuum filtration processes
- 2 | With perforated plate to fit filtering paper
- 3 | Glazed

| Code   | D1<br>mm | D2<br>mm | D3<br>mm | H1<br>mm | H2<br>mm | Capacity<br>mL | Filter paper Ø<br>mm |
|--------|----------|----------|----------|----------|----------|----------------|----------------------|
| PNF008 | 48       | 38       | 1        | 24       | 43       | 35             | 45                   |
| PNF009 | 62       | 45       | 1        | 30       | 64       | 70             | 55                   |
| PNF010 | 77       | 58       | 1        | 35       | 64       | 120            | 70                   |
| PNF011 | 97       | 70       | 2        | 40       | 71       | 240            | 90                   |
| PNF012 | 116      | 95       | 2        | 49       | 83       | 400            | 110                  |
| PNF013 | 130      | 110      | 2        | 52       | 85       | 600            | 125                  |
| PNF014 | 156      | 130      | 2        | 59       | 96       | 1000           | 150                  |
| PNF015 | 192      | 160      | 2        | 74       | 117      | 2000           | 185                  |
| PNF016 | 248      | 220      | 2        | 90       | 117      | 4000           | 240                  |
| PNF017 | 296      | 270      | 2        | 105      | 130      | 7000           | 295                  |
| PNF018 | 334      | 300      | 2        | 120      | 133      | 10000          | 325                  |



## PNG - Büchner, glass

## With sintered disc



- 1 | Glass funnel with sintered disc porosity G0 to G4
- 2 | Borosilicate glass
- 3 | For other volumes and/or porosity, consult

| Code   | Capacity | Ø (disc) | Poresity |
|--------|----------|----------|----------|
| PNG004 | 35 mL    | 30 mm    | G0       |
| PNG005 | 35 mL    | 30 mm    | G1       |
| PNG006 | 35 mL    | 30 mm    | G2       |
| PNG007 | 35 mL    | 30 mm    | G3       |
| PNG008 | 35 mL    | 30 mm    | G4       |
| PNG009 | 80 mL    | 40 mm    | G0       |
| PNG010 | 80 mL    | 40 mm    | G1       |
| PNG011 | 80 mL    | 40 mm    | G2       |
| PNG012 | 80 mL    | 40 mm    | G3       |
| PNG013 | 80 mL    | 40 mm    | G4       |
| PNG014 | 200 mL   | 65 mm    | G0       |
| PNG015 | 200 mL   | 65 mm    | G1       |
| PNG016 | 200 mL   | 65 mm    | G2       |
| PNG017 | 200 mL   | 65 mm    | G3       |
| PNG018 | 200 mL   | 65 mm    | G4       |
| PNG019 | 500 mL   | 90 mm    | G0       |
| PNG020 | 500 mL   | 90 mm    | G1       |
| PNG021 | 500 mL   | 90 mm    | G2       |
| PNG022 | 500 mL   | 90 mm    | G3       |
| PNG023 | 500 mL   | 90 mm    | G4       |
| PNG024 | 1000 mL  | 120 mm   | G0       |
| PNG025 | 1000 mL  | 120 mm   | G1       |
| PNG026 | 1000 mL  | 120 mm   | G2       |
| PNG027 | 1000 mL  | 120 mm   | G3       |
| PNG028 | 1000 mL  | 120 mm   | G4       |



## ▶ PNM - For transferring, plastic

### ▶ For transferring



- 1| Autoclavable high density polyethylene (HDPE)
- 2| With rim and handle and external surface with ribs
- 3| Suitable product for food contact

| Code   | Ø (cone) | L x Ø (stem) | Capacity  |
|--------|----------|--------------|-----------|
| PNM010 | 80 mm    | 13 x 30 mm   | 100 mL    |
| PNM011 | 110 mm   | 15 x 38 mm   | 300 mL    |
| PNM012 | 130 mm   | 20 x 43 mm   | 450 mL    |
| PNM013 | 140 mm   | 24 x 52 mm   | 750 mL    |
| PNM014 | 180 mm   | 30 x 69 mm   | 1500 mL   |
| PNM015 | 220 mm   | 35 x 81 mm   | 1750 mL   |
| PNM016 | 260 mm   | 38 x 75 mm   | 4000 mL   |
| PNM017 | 310 mm   | 43 x 80 mm   | 5500 mL   |
| PNM018 | 400 mm   | 45 x 130 mm  | 10.000 mL |



## ▶ PNZ - others

### ▶ Thistle funnel



- 1| They can be inserted in small holes of stoppers
- 2| It facilitates the addition of liquids to closed flasks
- 3| It prevents gas leaks produced in certain reactions

| Code   | Des.        | Length | Funnel Ø | Stem Ø |
|--------|-------------|--------|----------|--------|
| PNZ002 | Straight    | 300 mm | 40 mm    | 8 mm   |
| PNZ001 | With 1 bulb | 300 mm | 40 mm    | 8 mm   |



## ▶ PQB - Squibb

### ▶ PTFE stopcock



- 1| Made of borosilicate glass, ground neck and polypropylene (PP) stopper

| Code   | Capacity | Ground |
|--------|----------|--------|
| PQB001 | 50 mL    | 19/29  |
| PQB002 | 100 mL   | 19/26  |
| PQB003 | 125 mL   | 19/26  |
| PQB005 | 250 mL   | 19/26  |
| PQB006 | 250 mL   | 24/29  |
| PQB004 | 250 mL   | 29/32  |
| PQB008 | 500 mL   | 24/29  |
| PQB007 | 500 mL   | 29/32  |
| PQB009 | 1000 mL  | 29/32  |
| PQB010 | 2000 mL  | 29/32  |



## ▶ PQD - Gilson



### ▶ Glass, PTFE stopcock

| Code   | Capacity | Ground |
|--------|----------|--------|
| PQD001 | 50 mL    | 19/26  |
| PQD002 | 100 mL   | 19/26  |
| PQD003 | 125 mL   | 19/26  |
| PQD004 | 250 mL   | 19/26  |
| PQD005 | 250 mL   | 24/29  |
| PQD006 | 250 mL   | 29/32  |
| PQD007 | 500 mL   | 24/29  |
| PQD008 | 1000 mL  | 29/32  |





## PQL - Cylindrical

## PTFE stopcock



| Code   | Capacity | Ground | Graduation |
|--------|----------|--------|------------|
| PQL001 | 25 mL    | 14/23  | No         |
| PQL002 | 250 mL   | 29/32  | Yes        |



## PSB - Standard

## Filter paper, standard, characteristics

| Type     | Weight<br>(g/m <sup>2</sup> ) | Thickness<br>(mm) | pH | Humidity<br>% | Dry resistance (kg) |               | Wet resistance (kg) |         | Porosity<br>(μm) |
|----------|-------------------------------|-------------------|----|---------------|---------------------|---------------|---------------------|---------|------------------|
|          |                               |                   |    |               | Longitudinal        | Through       | Longitudinal        | Through |                  |
| Standard | 77                            | 0.16/0.18         | 7  | 6.8 ± 0.2     | 3.5/4.0 > 3.5       | 1.3/1.4 > 2.2 | > 0.8               | > 0.5   | 8-11             |



| Code          | Ø (mm) | Box of (uds) |
|---------------|--------|--------------|
| <b>Flat</b>   |        |              |
| PSB001        | 55     | 100          |
| PSB002        | 70     | 100          |
| PSB003        | 90     | 100          |
| PSB004        | 100    | 100          |
| PSB005        | 130    | 100          |
| PSB006        | 150    | 100          |
| PSB007        | 185    | 100          |
| PSB008        | 190    | 100          |
| PSB009        | 250    | 100          |
| PSB010        | 330    | 100          |
| PSB011        | 400    | 100          |
| PSB012        | 450    | 100          |
| PSB013        | 500    | 100          |
| <b>Folded</b> |        |              |
| PSB014        | 70     | 100          |
| PSB015        | 100    | 100          |
| PSB016        | 130    | 100          |
| PSB017        | 150    | 100          |
| PSB018        | 190    | 100          |
| PSB019        | 250    | 100          |
| PSB020        | 330    | 100          |
| PSB021        | 400    | 100          |
| PSB022        | 450    | 100          |
| PSB023        | 500    | 100          |
| PSB024        | 650    | 100          |

## PSC - Qualitative, very slow

### Filters FC29E

- 1| Very slow filtering speed
- 2| Extra tough paper
- 3| Ideal for water solutions and volatile liquids such as alcohol, fuel, ether, etc.

| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSC001       | 25     | 100  | PSC022         | 90     | 100  |
| PSC002       | 40     | 100  | PSC023         | 110    | 100  |
| PSC003       | 55     | 100  | PSC024         | 125    | 100  |
| PSC004       | 70     | 100  | PSC025         | 135    | 100  |
| PSC005       | 90     | 100  | PSC026         | 150    | 100  |
| PSC006       | 110    | 100  | PSC027         | 185    | 100  |
| PSC007       | 125    | 100  | PSC028         | 210    | 100  |
| PSC008       | 135    | 100  | PSC029         | 240    | 100  |
| PSC009       | 150    | 100  | PSC030         | 270    | 100  |
| PSC010       | 185    | 100  | PSC031         | 320    | 100  |
| PSC011       | 210    | 100  | PSC032         | 385    | 100  |
| PSC012       | 240    | 100  | PSC033         | 450    | 100  |
| PSC013       | 270    | 100  | PSC034         | 500    | 100  |
| PSC014       | 320    | 100  | PSC035         | 650    | 50   |
| PSC015       | 385    | 100  | PSC036         | 700    | 50   |
| PSC016       | 450    | 100  | PSC037         | 800    | 50   |
| PSC017       | 500    | 100  |                |        |      |
| PSC018       | 650    | 50   |                |        |      |
| PSC019       | 700    | 50   |                |        |      |
| PSC020       | 800    | 50   |                |        |      |
| PSC021       | 900    | 50   |                |        |      |



## PSD - Qualitative, slow

### Filters FC22L

- 1| Slow filtering speed
- 2| Dense texture of high retention. Ideal for vacuum filtration of injectable serum, etc.

| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSD001       | 25     | 100  | PSD016         | 70     | 100  |
| PSD002       | 40     | 100  | PSD017         | 90     | 100  |
| PSD003       | 55     | 100  | PSD018         | 110    | 100  |
| PSD004       | 70     | 100  | PSD019         | 125    | 100  |
| PSD005       | 90     | 100  | PSD020         | 135    | 100  |
| PSD006       | 110    | 100  | PSD021         | 150    | 100  |
| PSD007       | 125    | 100  | PSD022         | 185    | 100  |
| PSD008       | 135    | 100  | PSD023         | 210    | 100  |
| PSD009       | 150    | 100  | PSD024         | 240    | 100  |
| PSD010       | 185    | 100  | PSD025         | 270    | 100  |
| PSD011       | 210    | 100  | PSD026         | 320    | 100  |
| PSD012       | 240    | 100  | PSD027         | 385    | 100  |
| PSD013       | 270    | 100  | PSD028         | 450    | 100  |
| PSD014       | 320    | 100  | PSD029         | 500    | 100  |
| PSD015       | 385    | 100  |                |        |      |



page  
[237]

### Characteristics Filters FC22L

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtrating speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|----------------------|----------------|
| FC22L | 85                         | 0.20           | 3              | 100                  | Medium         |



## PSD - Qualitative, slow

## Filters FC49L



- 1 | Slow filtering speed
- 2 | 150g/m<sup>2</sup> paper of high retention and good strength
- 3 | Ideal for biochemistry and pharmaceutical industry

| FLAT   |        |      | FOLDED |        |      |
|--------|--------|------|--------|--------|------|
| Code   | Ø (mm) | Pack | Code   | Ø (mm) | Pack |
| PSD032 | 25     | 100  | PSD047 | 90     | 100  |
| PSD033 | 40     | 100  | PSD048 | 110    | 100  |
| PSD034 | 55     | 100  | PSD049 | 125    | 100  |
| PSD030 | 70     | 100  | PSD050 | 135    | 100  |
| PSD031 | 90     | 100  | PSD051 | 150    | 100  |
| PSD035 | 110    | 100  | PSD052 | 185    | 100  |
| PSD036 | 125    | 100  | PSD053 | 210    | 100  |
| PSD037 | 135    | 100  | PSD054 | 240    | 100  |
| PSD038 | 150    | 100  | PSD055 | 270    | 100  |
| PSD039 | 185    | 100  | PSD056 | 320    | 100  |
| PSD040 | 210    | 100  | PSD057 | 385    | 100  |
| PSD041 | 240    | 100  | PSD058 | 450    | 100  |
| PSD042 | 270    | 100  | PSD059 | 500    | 100  |
| PSD043 | 320    | 100  |        |        |      |
| PSD044 | 385    | 100  |        |        |      |
| PSD045 | 450    | 100  |        |        |      |
| PSD046 | 500    | 100  |        |        |      |

## Characteristics Filters FC49L

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC49L | 150                        | 0.40           | 2              | 180                 | Very good      |



## PSF - Qualitative, medium



## Filters FC28M



- 1 | Medium filtering speed
- 2 | Very high resistance even wet
- 3 | Ideal for acid or alkaline solutions

| FLAT   |        |      | FOLDED |        |      |
|--------|--------|------|--------|--------|------|
| Code   | Ø (mm) | Pack | Code   | Ø (mm) | Pack |
| PSF067 | 25     | 100  | PSF017 | 70     | 100  |
| PSF001 | 40     | 100  | PSF018 | 90     | 100  |
| PSF002 | 55     | 100  | PSF019 | 110    | 100  |
| PSF003 | 70     | 100  | PSF020 | 125    | 100  |
| PSF004 | 90     | 100  | PSF021 | 135    | 100  |
| PSF005 | 110    | 100  | PSF022 | 150    | 100  |
| PSF006 | 125    | 100  | PSF023 | 185    | 100  |
| PSF007 | 135    | 100  | PSF024 | 210    | 100  |
| PSF008 | 150    | 100  | PSF025 | 240    | 100  |
| PSF009 | 185    | 100  | PSF026 | 270    | 100  |
| PSF010 | 210    | 100  | PSF027 | 320    | 100  |
| PSF011 | 240    | 100  | PSF028 | 385    | 100  |
| PSF012 | 270    | 100  | PSF029 | 450    | 100  |
| PSF013 | 320    | 100  | PSF030 | 500    | 100  |
| PSF014 | 385    | 100  |        |        |      |
| PSF015 | 450    | 100  |        |        |      |
| PSF016 | 500    | 100  |        |        |      |

## Characteristics Filters FC28M

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC28M | 80                         | 0.18           | 5              | 40                  | Very good      |



## PSF - Qualitative, medium



## Filters FC20M

- 1| Medium filtering speed
- 2| Good retention capacity
- 3| Ideal for general applications and for education

| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSF031       | 25     | 100  | PSF048         | 70     | 100  |
| PSF032       | 40     | 100  | PSF049         | 90     | 100  |
| PSF033       | 55     | 100  | PSF050         | 110    | 100  |
| PSF034       | 70     | 100  | PSF051         | 125    | 100  |
| PSF035       | 90     | 100  | PSF052         | 135    | 100  |
| PSF036       | 110    | 100  | PSF053         | 150    | 100  |
| PSF037       | 125    | 100  | PSF054         | 185    | 100  |
| PSF038       | 135    | 100  | PSF055         | 210    | 100  |
| PSF039       | 150    | 100  | PSF056         | 240    | 100  |
| PSF040       | 185    | 100  | PSF057         | 270    | 100  |
| PSF041       | 210    | 100  | PSF058         | 320    | 100  |
| PSF042       | 240    | 100  | PSF059         | 385    | 100  |
| PSF043       | 270    | 100  | PSF060         | 450    | 100  |
| PSF044       | 320    | 100  | PSF061         | 500    | 100  |
| PSF045       | 385    | 100  |                |        |      |
| PSF046       | 450    | 100  |                |        |      |
| PSF047       | 500    | 100  |                |        |      |



## Characteristics Filters FC20M

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC20M | 77                         | 0.13           | 5              | 40                  | Good           |

## Filters FC75M

- 1| Medium filtering speed
- 2| Very pure paper
- 3| The most used type for qualitative analyses, phosphates, sugars, fertilizers

| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSF062       | 25     | 100  | PSF080         | 70     | 100  |
| PSF068       | 40     | 100  | PSF081         | 90     | 100  |
| PSF069       | 55     | 100  | PSF082         | 110    | 100  |
| PSF063       | 70     | 100  | PSF083         | 125    | 100  |
| PSF064       | 90     | 100  | PSF084         | 135    | 100  |
| PSF065       | 110    | 100  | PSF085         | 150    | 100  |
| PSF070       | 125    | 100  | PSF086         | 185    | 100  |
| PSF071       | 135    | 100  | PSF087         | 210    | 100  |
| PSF072       | 150    | 100  | PSF088         | 240    | 100  |
| PSF073       | 185    | 100  | PSF089         | 270    | 100  |
| PSF074       | 210    | 100  | PSF090         | 320    | 100  |
| PSF066       | 240    | 100  | PSF091         | 385    | 100  |
| PSF075       | 270    | 100  | PSF092         | 450    | 100  |
| PSF076       | 320    | 100  | PSF093         | 500    | 100  |
| PSF077       | 385    | 100  |                |        |      |
| PSF078       | 450    | 100  |                |        |      |
| PSF079       | 500    | 100  |                |        |      |



## Characteristics Filters FC75M

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC75M | 75                         | 0.16           | 6              | 50                  | Medium         |



## PSG - Qualitative, fast

## Filters FC27E



- 1 | Fast filtering speed, extra soft thick paper
- 2 | Ideal for the filtration of oils, syrups, fatty substances
- 3 | Also used with Büchner funnels

| FLAT   |        |      | FOLDED |        |      |
|--------|--------|------|--------|--------|------|
| Code   | Ø (mm) | Pack | Code   | Ø (mm) | Pack |
| PSG001 | 25     | 100  | PSG019 | 90     | 100  |
| PSG002 | 40     | 100  | PSG020 | 110    | 100  |
| PSG003 | 55     | 100  | PSG021 | 125    | 100  |
| PSG004 | 70     | 100  | PSG022 | 135    | 100  |
| PSG005 | 90     | 100  | PSG023 | 150    | 100  |
| PSG006 | 110    | 100  | PSG024 | 185    | 100  |
| PSG007 | 125    | 100  | PSG025 | 210    | 100  |
| PSG008 | 135    | 100  | PSG026 | 240    | 100  |
| PSG009 | 150    | 100  | PSG027 | 270    | 100  |
| PSG010 | 185    | 100  | PSG028 | 320    | 100  |
| PSG011 | 210    | 100  | PSG029 | 385    | 100  |
| PSG012 | 240    | 100  | PSG030 | 450    | 100  |
| PSG013 | 270    | 100  | PSG031 | 500    | 100  |
| PSG014 | 320    | 100  |        |        |      |
| PSG015 | 385    | 100  |        |        |      |
| PSG016 | 450    | 100  |        |        |      |
| PSG017 | 500    | 100  |        |        |      |

## Characteristics Filters FC27E

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC27E | 160                        | 0.45           | 8              | 120                 | Good           |

## Filters FC26R



- 1 | Fast filtering speed
- 2 | Very pure paper
- 3 | Ideal for the preparation and analysis of pharmaceutical products and metallurgical analyses.

| FLAT   |        |      | FOLDED |        |      |
|--------|--------|------|--------|--------|------|
| Code   | Ø (mm) | Pack | Code   | Ø (mm) | Pack |
| PSG034 | 25     | 100  | PSG051 | 70     | 100  |
| PSG035 | 40     | 100  | PSG052 | 90     | 100  |
| PSG036 | 55     | 100  | PSG053 | 110    | 100  |
| PSG037 | 70     | 100  | PSG054 | 125    | 100  |
| PSG038 | 90     | 100  | PSG055 | 135    | 100  |
| PSG039 | 110    | 100  | PSG056 | 150    | 100  |
| PSG040 | 125    | 100  | PSG057 | 185    | 100  |
| PSG041 | 135    | 100  | PSG058 | 210    | 100  |
| PSG042 | 150    | 100  | PSG059 | 240    | 100  |
| PSG043 | 185    | 100  | PSG060 | 270    | 100  |
| PSG044 | 210    | 100  | PSG061 | 320    | 100  |
| PSG045 | 240    | 100  | PSG062 | 385    | 100  |
| PSG046 | 270    | 100  | PSG063 | 450    | 100  |
| PSG047 | 320    | 100  | PSG064 | 500    | 100  |
| PSG048 | 385    | 100  |        |        |      |
| PSG049 | 450    | 100  |        |        |      |
| PSG050 | 500    | 100  |        |        |      |

## Characteristics Filters FC26R

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC26R | 75                         | 0.15           | 10             | 30                  | Acceptable     |



## PSG - Qualitative, fast

### Filters FC21R

- 1| Fast filtering speed
- 2| Very pure paper
- 3| Ideal for filtration of mucilaginous liquids

| FLAT   |        |      | FOLDED |        |      |
|--------|--------|------|--------|--------|------|
| Code   | Ø (mm) | Pack | Code   | Ø (mm) | Pack |
| PSG127 | 25     | 100  | PSG143 | 70     | 100  |
| PSG128 | 40     | 100  | PSG144 | 90     | 100  |
| PSG129 | 55     | 100  | PSG145 | 110    | 100  |
| PSG130 | 70     | 100  | PSG146 | 125    | 100  |
| PSG131 | 90     | 100  | PSG147 | 135    | 100  |
| PSG065 | 110    | 100  | PSG148 | 150    | 100  |
| PSG132 | 125    | 100  | PSG149 | 185    | 100  |
| PSG133 | 135    | 100  | PSG150 | 210    | 100  |
| PSG134 | 150    | 100  | PSG151 | 240    | 100  |
| PSG135 | 185    | 100  | PSG152 | 270    | 100  |
| PSG136 | 210    | 100  | PSG153 | 320    | 100  |
| PSG137 | 240    | 100  | PSG154 | 385    | 100  |
| PSG138 | 270    | 100  | PSG155 | 450    | 100  |
| PSG139 | 320    | 100  | PSG156 | 500    | 100  |
| PSG140 | 385    | 100  |        |        |      |
| PSG141 | 450    | 100  |        |        |      |
| PSG142 | 500    | 100  |        |        |      |



### Characteristics Filters FC21R

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (μm) | Filtrating speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|----------------------|----------------|
| FC21R | 75                         | 0.17           | 10             | 35                   | Medium         |

### Filters FC150R

- 1| Fast filtering speed
- 2| 150 g/m<sup>2</sup> crepé paper
- 3| Ideal for filtration of loaded liquids

| FLAT   |        |      |        | FOLDED |        |      |
|--------|--------|------|--------|--------|--------|------|
| Code   | Ø (mm) | Pack | Precio | Code   | Ø (mm) | Pack |
| PSG066 | 25     | 100  |        | PSG080 | 90     | 100  |
| PSG067 | 40     | 100  |        | PSG081 | 110    | 100  |
| PSG068 | 55     | 100  |        | PSG082 | 125    | 100  |
| PSG069 | 70     | 100  |        | PSG083 | 135    | 100  |
| PSG070 | 90     | 100  |        | PSG084 | 150    | 100  |
| PSG071 | 110    | 100  |        | PSG085 | 185    | 100  |
| PSG072 | 125    | 100  |        | PSG086 | 210    | 100  |
| PSG073 | 135    | 100  |        | PSG087 | 240    | 100  |
| PSG074 | 150    | 100  |        | PSG088 | 270    | 100  |
| PSG075 | 185    | 100  |        | PSG089 | 320    | 100  |
| PSG076 | 210    | 100  |        | PSG090 | 385    | 100  |
| PSG077 | 240    | 100  |        | PSG091 | 450    | 100  |
| PSG078 | 270    | 100  |        | PSG092 | 500    | 100  |
| PSG079 | 320    | 100  |        |        |        |      |
| PSG157 | 385    | 100  |        |        |        |      |
| PSG158 | 450    | 100  |        |        |        |      |
| PSG159 | 500    | 100  |        |        |        |      |



### Characteristics Filters FC150R

| Type   | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (μm) | Filtrating speed (s) | Wet resistance |
|--------|----------------------------|----------------|----------------|----------------------|----------------|
| FC150R | 150                        | 0.35           | 8              | 40                   | Very good      |



## PSG - Qualitative, fast

## ▶ Filters FC25R

- 1 | Fast filtering speed
- 2 | Plain paper. Ideal for big volume precipitates



| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSG093       | 25     | 100  | PSG110         | 70     | 100  |
| PSG094       | 40     | 100  | PSG111         | 90     | 100  |
| PSG095       | 55     | 100  | PSG112         | 110    | 100  |
| PSG096       | 70     | 100  | PSG113         | 125    | 100  |
| PSG097       | 90     | 100  | PSG114         | 135    | 100  |
| PSG098       | 110    | 100  | PSG115         | 150    | 100  |
| PSG099       | 125    | 100  | PSG116         | 185    | 100  |
| PSG100       | 135    | 100  | PSG117         | 210    | 100  |
| PSG101       | 150    | 100  | PSG118         | 240    | 100  |
| PSG102       | 185    | 100  | PSG119         | 270    | 100  |
| PSG103       | 210    | 100  | PSG120         | 320    | 100  |
| PSG104       | 240    | 100  | PSG121         | 385    | 100  |
| PSG105       | 270    | 100  | PSG122         | 450    | 100  |
| PSG106       | 320    | 100  | PSG123         | 500    | 100  |
| PSG107       | 385    | 100  |                |        |      |
| PSG108       | 450    | 100  |                |        |      |
| PSG109       | 500    | 100  |                |        |      |

## Characteristics Filters FC25R

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC25R | 77                         | 0.15           | 8              | 35                  | Medium         |



## PSH - Qualitative, very fast

## ▶ Filters FC75R

- 1 | Very fast filtering speed
- 2 | Very resistant crepé paper
- 3 | Ideal for all kind of very fast filtrations



| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSH028       | 25     | 100  | PSH014         | 70     | 100  |
| PSH001       | 40     | 100  | PSH015         | 90     | 100  |
| PSH002       | 55     | 100  | PSH016         | 110    | 100  |
| PSH003       | 70     | 100  | PSH017         | 125    | 100  |
| PSH004       | 90     | 100  | PSH018         | 135    | 100  |
| PSH005       | 110    | 100  | PSH019         | 150    | 100  |
| PSH006       | 125    | 100  | PSH020         | 185    | 100  |
| PSH007       | 135    | 100  | PSH021         | 210    | 100  |
| PSH008       | 150    | 100  | PSH022         | 240    | 100  |
| PSH009       | 185    | 100  | PSH023         | 270    | 100  |
| PSH010       | 210    | 100  | PSH024         | 320    | 100  |
| PSH011       | 240    | 100  | PSH025         | 385    | 100  |
| PSH012       | 270    | 100  | PSH026         | 450    | 100  |
| PSH013       | 320    | 100  | PSH027         | 500    | 100  |
| PSH029       | 385    | 100  |                |        |      |
| PSH030       | 450    | 100  |                |        |      |
| PSH031       | 500    | 100  |                |        |      |

## Characteristics Filters FC75R

| Type  | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|-------|----------------------------|----------------|----------------|---------------------|----------------|
| FC75R | 60                         | 0.12           | 15             | 25                  | Good           |

## PSK - Quantitative, slow

### Filters SCLO

- 1 | Slow filtering speed, dense texture
- 2 | Ideal for retention of fine precipitates

| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSK001       | 12     | 100  | PSK014         | 70     | 100  |
| PSK002       | 22     | 100  | PSK015         | 90     | 100  |
| PSK003       | 40     | 100  | PSK016         | 110    | 100  |
| PSK004       | 55     | 100  | PSK017         | 125    | 100  |
| PSK005       | 70     | 100  | PSK018         | 135    | 100  |
| PSK006       | 90     | 100  | PSK019         | 150    | 100  |
| PSK007       | 110    | 100  | PSK020         | 185    | 100  |
| PSK008       | 125    | 100  | PSK021         | 210    | 100  |
| PSK009       | 135    | 100  | PSK022         | 240    | 100  |
| PSK010       | 150    | 100  |                |        |      |
| PSK011       | 185    | 100  |                |        |      |
| PSK012       | 210    | 100  |                |        |      |
| PSK013       | 240    | 100  |                |        |      |



### Characteristics Filters SCLO

| Type | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|------|----------------------------|----------------|----------------|---------------------|----------------|
| SCLO | 80                         | 0.2            | 3              | 100                 | Medium         |

## PSL - Quantitative, medium

### Filters SCSG

- 1 | Medium filtration speed, without fats
- 2 | Medium texture
- 3 | Ideal for determination of fat content in the food industry

| FLAT<br>Code | Ø (mm) | Pack | Precio | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|--------|----------------|--------|------|
| PSL001       | 12     | 100  |        | PSL014         | 70     | 100  |
| PSL002       | 22     | 100  |        | PSL015         | 90     | 100  |
| PSL003       | 40     | 100  |        | PSL016         | 110    | 100  |
| PSL004       | 55     | 100  |        | PSL017         | 125    | 100  |
| PSL005       | 70     | 100  |        | PSL018         | 135    | 100  |
| PSL006       | 90     | 100  |        | PSL019         | 150    | 100  |
| PSL007       | 110    | 100  |        | PSL020         | 185    | 100  |
| PSL008       | 125    | 100  |        | PSL021         | 210    | 100  |
| PSL009       | 135    | 100  |        | PSL022         | 240    | 100  |
| PSL010       | 150    | 100  |        |                |        |      |
| PSL011       | 185    | 100  |        |                |        |      |
| PSL012       | 210    | 100  |        |                |        |      |
| PSL013       | 240    | 100  |        |                |        |      |



### Characteristics Filters SCSG

| Type | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|------|----------------------------|----------------|----------------|---------------------|----------------|
| SCSG | 80                         | 0.16           | 6              | 40                  | Medium         |



## PSL - Quantitative, medium



## Filters SCMO



- 1 | Medium filtration speed, medium texture
- 2 | Ideal for all kind of gravimetric analyses

| FLAT   |        |      | FOLDED |        |      |
|--------|--------|------|--------|--------|------|
| Code   | Ø (mm) | Pack | Code   | Ø (mm) | Pack |
| PSL023 | 12     | 100  | PSL036 | 70     | 100  |
| PSL024 | 22     | 100  | PSL037 | 90     | 100  |
| PSL025 | 40     | 100  | PSL038 | 110    | 100  |
| PSL026 | 55     | 100  | PSL039 | 125    | 100  |
| PSL027 | 70     | 100  | PSL040 | 135    | 100  |
| PSL028 | 90     | 100  | PSL041 | 150    | 100  |
| PSL029 | 110    | 100  | PSL042 | 185    | 100  |
| PSL030 | 125    | 100  | PSL043 | 210    | 100  |
| PSL031 | 135    | 100  | PSL044 | 240    | 100  |
| PSL032 | 150    | 100  |        |        |      |
| PSL033 | 185    | 100  |        |        |      |
| PSL034 | 210    | 100  |        |        |      |
| PSL035 | 240    | 100  |        |        |      |

## Characteristics Filters SCMO

| Type | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|------|----------------------------|----------------|----------------|---------------------|----------------|
| SCMO | 80                         | 0.16           | 6              | 40                  | Medium         |



## PSM - Quantitative, fast

## Filters SCRO



- 1 | Fast filtering speed
- 2 | Loose texture
- 3 | Ideal for metallurgic laboratories

| FLAT   |        |      | FOLDED |        |      |
|--------|--------|------|--------|--------|------|
| Code   | Ø (mm) | Pack | Code   | Ø (mm) | Pack |
| PSM001 | 12     | 100  | PSM014 | 70     | 100  |
| PSM002 | 22     | 100  | PSM015 | 90     | 100  |
| PSM003 | 40     | 100  | PSM016 | 110    | 100  |
| PSM004 | 55     | 100  | PSM017 | 125    | 100  |
| PSM005 | 70     | 100  | PSM018 | 135    | 100  |
| PSM006 | 90     | 100  | PSM019 | 150    | 100  |
| PSM007 | 110    | 100  | PSM020 | 185    | 100  |
| PSM008 | 125    | 100  | PSM021 | 210    | 100  |
| PSM009 | 135    | 100  | PSM022 | 240    | 100  |
| PSM010 | 150    | 100  |        |        |      |
| PSM011 | 185    | 100  |        |        |      |
| PSM012 | 210    | 100  |        |        |      |
| PSM013 | 240    | 100  |        |        |      |

## Characteristics Filters SCRO

| Type | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|------|----------------------------|----------------|----------------|---------------------|----------------|
| SCRO | 80                         | 0.16           | 10             | 25                  | Acceptable     |

## ▶ PSN - Quantitative, very fast

### ▶ Filters SCTR

- 1| Very fast filtering speed
- 2| Loose texture
- 3| Ideal for retention of thick precipitates such as metal hydrides

| FLAT<br>Code | Ø (mm) | Pack | FOLDED<br>Code | Ø (mm) | Pack |
|--------------|--------|------|----------------|--------|------|
| PSN001       | 12     | 100  | PSN014         | 70     | 100  |
| PSN002       | 22     | 100  | PSN015         | 90     | 100  |
| PSN003       | 40     | 100  | PSN016         | 110    | 100  |
| PSN004       | 55     | 100  | PSN017         | 125    | 100  |
| PSN005       | 70     | 100  | PSN018         | 135    | 100  |
| PSN006       | 90     | 100  | PSN019         | 150    | 100  |
| PSN007       | 110    | 100  | PSN020         | 185    | 100  |
| PSN008       | 125    | 100  | PSN021         | 210    | 100  |
| PSN009       | 135    | 100  | PSN022         | 240    | 100  |
| PSN010       | 150    | 100  |                |        |      |
| PSN011       | 185    | 100  |                |        |      |
| PSN012       | 210    | 100  |                |        |      |
| PSN013       | 240    | 100  |                |        |      |



### Characteristics Filters SCTR

| Type | Weight (g/m <sup>2</sup> ) | Thickness (mm) | Retention (µm) | Filtering speed (s) | Wet resistance |
|------|----------------------------|----------------|----------------|---------------------|----------------|
| SCTR | 80                         | 0.13           | 15             | 12                  | Acceptable     |

## ▶ PSP - Glass fiber

### ▶ Filters FV341

- 1| Ideal for the control of atmospheric contamination

| Code   | Ø (mm) | Pack |
|--------|--------|------|
| PSP043 | 20     | 100  |
| PSP044 | 21     | 100  |
| PSP045 | 24     | 100  |
| PSP046 | 25     | 100  |
| PSP047 | 40     | 100  |
| PSP048 | 45     | 100  |
| PSP049 | 47     | 100  |
| PSP050 | 55     | 100  |
| PSP051 | 60     | 100  |
| PSP052 | 70     | 100  |
| PSP053 | 90     | 100  |
| PSP054 | 110    | 100  |
| PSP055 | 125    | 100  |
| PSP056 | 130    | 100  |
| PSP057 | 140    | 100  |
| PSP058 | 150    | 100  |
| PSP059 | 160    | 100  |
| PSP060 | 185    | 100  |
| PSP061 | 200    | 100  |
| PSP062 | 210    | 100  |
| PSP063 | 240    | 100  |



### Characteristics Filters FV341

| Type  | Efficacy (%) | Weight g/m <sup>2</sup> | Thickness mm | Retention µM | Filtering speed (S) | Wet resistance (µm) |
|-------|--------------|-------------------------|--------------|--------------|---------------------|---------------------|
| FV341 | 95           | 50                      | 0.30         | 2            | 8                   | Good                |



## PSR - Membrane filters

## ▶ Gridded sterile



- 1 | Sterilized by gamma radiation
- 2 | Supplied in individual bags

| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR001 | 47 mm    | 0.45 $\mu\text{m}$ | 50           |
| PSR002 | 47 mm    | 0.80 $\mu\text{m}$ | 50           |

## ▶ Gridded membranes



- 1 | They have a printed grid on the surface that allows to make colony counts
- 2 | Non sterile, autoclavables

| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR013 | 13 mm    | 0.22 $\mu\text{m}$ | 100          |
| PSR014 | 13 mm    | 0.45 $\mu\text{m}$ | 100          |
| PSR015 | 13 mm    | 0.80 $\mu\text{m}$ | 100          |
| PSR016 | 25 mm    | 0.22 $\mu\text{m}$ | 100          |
| PSR017 | 25 mm    | 0.45 $\mu\text{m}$ | 100          |
| PSR018 | 25 mm    | 0.80 $\mu\text{m}$ | 100          |
| PSR019 | 47 mm    | 0.22 $\mu\text{m}$ | 25           |
| PSR020 | 47 mm,   | 0.45 $\mu\text{m}$ | 25           |
| PSR021 | 47 mm    | 0.80 $\mu\text{m}$ | 25           |

## ▶ Membrane filters



| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR003 | 13 mm    | 0.22 $\mu\text{m}$ | 200          |
| PSR004 | 13 mm    | 0.45 $\mu\text{m}$ | 200          |
| PSR005 | 13 mm    | 0.80 $\mu\text{m}$ | 200          |
| PSR006 | 25 mm    | 0.22 $\mu\text{m}$ | 200          |
| PSR007 | 25 mm    | 0.45 $\mu\text{m}$ | 200          |
| PSR008 | 25 mm    | 0.80 $\mu\text{m}$ | 200          |
| PSR009 | 47 mm    | 0.22 $\mu\text{m}$ | 50           |
| PSR010 | 47 mm    | 0.45 $\mu\text{m}$ | 50           |
| PSR011 | 47 mm    | 0.80 $\mu\text{m}$ | 50           |
| PSR012 | 142 mm   | 0.80 $\mu\text{m}$ | 50           |

## ▶ Nylon



| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR022 | 25 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR023 | 25 mm    | 0,45 $\mu\text{m}$ | 100          |
| PSR024 | 47 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR025 | 47 mm    | 0,45 $\mu\text{m}$ | 100          |



## ▶ PSR - Membrane filters

### ▶ Cellulose acetate

| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR026 | 25 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR027 | 25 mm    | 0,45 $\mu\text{m}$ | 100          |
| PSR028 | 47 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR029 | 47 mm    | 0,45 $\mu\text{m}$ | 100          |



### ▶ Cellulose nitrate sterile

| Code   | Diameter | Pore               | Type              | Units/box |
|--------|----------|--------------------|-------------------|-----------|
| PSR033 | 47 mm    | 0,20 $\mu\text{m}$ | White, black grid | 100       |
| PSR032 | 47 mm    | 0,45 $\mu\text{m}$ | White, black grid | 100       |
| PSR030 | 47 mm    | 0,20 $\mu\text{m}$ | Black, white grid | 100       |
| PSR031 | 47 mm    | 0,45 $\mu\text{m}$ | Black, white grid | 100       |



### ▶ Cellulose nitrate

| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR034 | 25 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR035 | 25 mm    | 0,45 $\mu\text{m}$ | 100          |
| PSR036 | 47 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR037 | 47 mm    | 0,45 $\mu\text{m}$ | 100          |



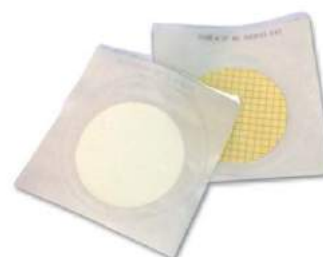
### ▶ Polyethersulfone

| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR038 | 25 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR039 | 25 mm    | 0,45 $\mu\text{m}$ | 100          |
| PSR040 | 47 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR041 | 47 mm    | 0,45 $\mu\text{m}$ | 100          |



### ▶ PTFE

| Code   | Diameter | Pore               | Box of (uds) |
|--------|----------|--------------------|--------------|
| PSR042 | 25 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR043 | 25 mm    | 0,45 $\mu\text{m}$ | 100          |
| PSR044 | 47 mm    | 0,20 $\mu\text{m}$ | 100          |
| PSR045 | 47 mm    | 0,45 $\mu\text{m}$ | 100          |





## PSR - Membrane filters

## ▶ Regenerated cellulose



| Code   | Diameter | Pore    | Box of (uds) |
|--------|----------|---------|--------------|
| PSR046 | 25 mm    | 0,20 µm | 100          |
| PSR047 | 25 mm    | 0,45 µm | 100          |
| PSR048 | 47 mm    | 0,20 µm | 100          |
| PSR049 | 47 mm    | 0,45 µm | 100          |

## Gridded sterile

| Material                  | Ø 25 mm |         | Ø 47 mm      |              |
|---------------------------|---------|---------|--------------|--------------|
|                           | 0.20 µm | 0.45 µm | 0.20 µm      | 0.45 µm      |
| Cellulose nitrate         | PSR034  | PSR035  | PSR036       | PSR037       |
| Sterile cellulose nitrate |         |         | PSR033 (BCN) | PSR032 (BCN) |
|                           |         |         | PSR030 (NCB) | PSR031 (NCB) |
| Cellulose acetate         | PSR026  | PSR027  | PSR028       | PSR029       |
| Regenerated acetate       | PSR046  | PSR047  | PSR048       | PSR049       |
| Nylon                     | PSR022  | PSR023  | PSR024       | PSR025       |
| Polietersulfona           | PSR038  | PSR039  | PSR040       | PSR041       |
| PTFE                      | PSR042  | PSR043  | PSR044       | PSR045       |



## PSX - Reams

## ▶ Reams



| Code   | Paper type        | Weight              | Dimensions  | Ream of    |
|--------|-------------------|---------------------|-------------|------------|
| PSX001 | Joseph paper      | 25 g/m <sup>2</sup> | 15x15 cm    | 500 sheets |
| PSX002 | Joseph paper      | 25 g/m <sup>2</sup> | 35x50 cm    | 500 sheets |
| PSX003 | Joseph paper      | 25 g/m <sup>2</sup> | 35x50 cm    | 800 sheets |
| PSX007 | White paper 7 Kg  | 67 g/m <sup>2</sup> | 40/42x52 cm | 500 sheets |
| PSX005 | White paper 7 Kg  | 77 g/m <sup>2</sup> | 52x52 cm    | 500 sheets |
| PSX004 | Grey paper        | 60 g/m <sup>2</sup> | 42x52 cm    | 500 sheets |
| PSX006 | Qualitative paper | 77 g/m <sup>2</sup> | 58x65 cm    | 100 sheets |



## PSZ - Otros

## ▶ Cytocentrifugation



1 | Cotton fiber cardboard paper

- 2 | Very thick (420 g/m<sup>2</sup>), very absorbent  
 3 | Used in juice extractions and centrifuges

| Code   | Dimensions (mm) | Box of |
|--------|-----------------|--------|
| PSZ001 | 75 x 25         | 200    |

## ▶ PSZ - Others

### ▶ Antibiotics test

| Code   | Dimensions (mm) | Box of      |
|--------|-----------------|-------------|
| PSZ002 | 6               | 1000 discos |
| PSZ003 | 9               | 1000 discos |
| PSZ004 | 12              | 1000 discos |
| PSZ005 | 13              | 1000 discos |

### ▶ Nitrogen free

| Code   | Dimensions (mm) | Box of |
|--------|-----------------|--------|
| PSZ006 | 120 x 120       | 200    |

### ▶ Phase separation

| Code   | Dimensions (mm) | Box of |
|--------|-----------------|--------|
| PSZ007 | 90              | 100    |
| PSZ008 | 110             | 100    |
| PSZ009 | 125             | 100    |
| PSZ010 | 150             | 100    |
| PSZ011 | 185             | 100    |
| PSZ012 | 210             | 100    |
| PSZ013 | 240             | 100    |
| PSZ014 | 270             | 100    |

### ▶ Germination test

| Code   | Dimensions (mm) | Box of |
|--------|-----------------|--------|
| PSZ018 | 85 x 120        | 500    |
| PSZ015 | 100 x 200       | 500    |
| PSZ016 | 30 x 200        | 1000   |
| PSZ017 | 440 x 680       | 250    |
| PSZ019 | Ø. 85           | 100    |



## PVB - Cellulose acetate/nitrate

## Cellulose acetate



1 | Box of 500 units

| Code<br>Ø 13 mm | Pore (µm) | Colour | Code<br>Ø 25 mm | Pore (µm) | Colour |
|-----------------|-----------|--------|-----------------|-----------|--------|
| PVB001          | 0,20      | Blue   | PVB006          | 0,20      | Blue   |
| PVB002          | 0,45      | Yellow | PVB007          | 0,45      | Yellow |
| PVB003          | 0,80      | Green  | PVB008          | 0,80      | Green  |
| PVB004          | 1,20      | Red    | PVB009          | 1,20      | Red    |
| PVB005          | 5         | Brown  | PVB010          | 5         | Brown  |

## Cellulose acetate sterile



1 | Box of 500 units

| Code<br>Ø 13 mm | Pore (µm) | Colour | Code<br>Ø 25 mm | Pore (µm) | Colour |
|-----------------|-----------|--------|-----------------|-----------|--------|
| PVB011          | 0,20      | Blue   | PVB016          | 0,20      | Blue   |
| PVB012          | 0,45      | Yellow | PVB017          | 0,45      | Yellow |
| PVB013          | 0,80      | Green  | PVB018          | 0,80      | Green  |
| PVB014          | 1,20      | Red    | PVB019          | 1,20      | Red    |
| PVB015          | 5         | Brown  | PVB020          | 5         | Brown  |

## Cellulose acetate (PP crankcase)



1 | Box of 500 units

| Code<br>Ø 13 mm | Pore (µm) | Code<br>Ø 25 mm | Pore (µm) |
|-----------------|-----------|-----------------|-----------|
| PVB021          | 0,20      | PVB026          | 0,20      |
| PVB022          | 0,45      | PVB027          | 0,45      |
| PVB023          | 0,80      | PVB028          | 0,80      |
| PVB024          | 1,20      | PVB029          | 1,20      |
| PVB025          | 5         | PVB030          | 5         |

## Regenerated cellulose



1 | Box of 500 units

| Code<br>Ø 13 mm | Pore (µm) | Code<br>Ø 25 mm | Pore (µm) |
|-----------------|-----------|-----------------|-----------|
| PVB031          | 0,20      | PVB033          | 0,20      |
| PVB032          | 0,45      | PVB034          | 0,45      |

## ▶ PVZ - Others

### ▶ Nylon

1 | Box of 500 units

| Code<br>Ø 13 mm | Pore (µm) | Code<br>Ø 25 mm | Pore (µm) |
|-----------------|-----------|-----------------|-----------|
| PVZ001          | 0,20      | PVZ003          | 0,20      |
| PVZ002          | 0,45      | PVZ004          | 0,45      |



### ▶ Polyethersulfone

1 | Box of 500 units

| Code<br>Ø 13 mm | Pore (µm) | Code<br>Ø 25 mm | Pore (µm) |
|-----------------|-----------|-----------------|-----------|
| PVZ005          | 0,20      | PVZ007          | 0,20      |
| PVZ006          | 0,45      | PVZ008          | 0,45      |



### ▶ PTFE

1 | Box of 500 units.

| Code<br>Ø 13 mm | Pore (µm) | Code<br>Ø 25 mm | Pore (µm) |
|-----------------|-----------|-----------------|-----------|
| PVZ009          | 0,20      | PVZ011          | 0,20      |
| PVZ010          | 0,45      | PVZ012          | 0,45      |



### ▶ Glass fiber

| Ø 25 mm | Pore (µm) | Box of |
|---------|-----------|--------|
| PVZ013  | 0,70      | 500    |
| PVZ014  | 1         | 500    |
| PVZ015  | 1,2       | 500    |
| PVZ016  | 3,10      | 500    |





## PXB - Membrane pumps

### ▶ Membrane pumps



- 1 | Oil free, they don't need water, thus, they don't produce any waste water
- 2 | They are provided with an analogic metallic manometer

| Code            | PXB001                                | PXB002                               |
|-----------------|---------------------------------------|--------------------------------------|
| Vacuum pressure | 638 mm Hg (Torr)/ 0.085 MP / 850 mbar | 600 mm Hg (Torr)/ 0.08 MP / 800 mbar |
| Flow            | 10 L/min - 0.6 m <sup>3</sup> /h      | 25 L/min - 1.5 m <sup>3</sup> /h     |
| Consumption     | 20 W                                  | 40 W                                 |
| Weight          | 4 Kg                                  | 7 Kg                                 |
| Dimensions      | 245 x 135 x 245 mm                    | 280 x 140 x 220 mm                   |
| Power supply    | 220-240v 50hz                         | 220-240v 50hz                        |



## PXL - Water jet pumps

### ▶ Water jet pump



- 1 | Minimum water pressure 4 kg/cm<sup>2</sup>
- 2 | Approximate vacuum of 17 mmHg

| Code   | Length | Upper Ø | Hose Ø |
|--------|--------|---------|--------|
| PXL001 | 320 mm | 18 mm   | 10 mm  |



## PZB - Chromatography

### ▶ Chromatography paper



| Code   | Dimensions (mm) | Box of     |
|--------|-----------------|------------|
| PZB006 | 100 x 300       | 100 sheets |
| PZB003 | 200 x 200       | 100 sheets |
| PZB004 | 250 x 250       | 100 sheets |
| PZB005 | 285 x 250       | 25 sheets  |
| PZB007 | 460 x 570       | 100 sheets |
| PZB008 | 580 x 600       | 100 sheets |





## [Q] INDEX OF CONTENTS DIDACTIC MATERIAL

|                                          |            |
|------------------------------------------|------------|
| <b>[QB] Models .....</b>                 | <b>256</b> |
| QBB - Anatomy .....                      | 256        |
| QBG - Botany .....                       | 264        |
| QBN - Zoology .....                      | 266        |
| QBQ - Astronomy .....                    | 267        |
| QBR - Molecular kits .....               | 268        |
| <b>[QG] Prepared slides .....</b>        | <b>269</b> |
| QGB - Animal histology .....             | 269        |
| QGF - Plant histology .....              | 270        |
| QGJ - Zoology .....                      | 273        |
| QGM - Minerals .....                     | 275        |
| QGR - Slide sets .....                   | 275        |
| <b>[QL] Physics .....</b>                | <b>279</b> |
| QLB - Mechanics and fluids .....         | 279        |
| QLD - Waves and sound .....              | 280        |
| QLG - Light and optics .....             | 282        |
| QLJ - Thermology .....                   | 284        |
| QLL - Magnetism and electrostatics ..... | 286        |
| QLN - Electricity and electronics .....  | 288        |

TRADEMARKS:





## QBB - Models, anatomy



► SENSE ORGANS - Eye



- 1| Models of eyeball can be dismantled in several parts.
- 2| These two models show the full structure of the eye: cornea and sclera, iris and choroid, optical nerve and eye muscles.
- 3| Supplied with base

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB001 | 6     | 6x             | 15x15x25 cm |

► SENSE ORGANS - Ear 3x / 1.5x



- 1| Representation of the outer, middle and inner ear.
- 2| Parts: ear flap and canal, eardrum and ossicles, eustachian tube, cochlea, semicircular canals and the auditory nerve.
- 3| Disassemble parts according to model.
- 4| Supplied with base.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB002 | 4     | 3x             | 15x36x20 cm |
| QBB003 | 3     | 1.5x           | 12x17x12 cm |

► SENSE ORGANS - Nasal cavity



- 1| The model shows the left upper half of the face.
- 2| Different structures are represented: frontal, sphenoid and maxillary sinuses, nasal cartilage and septum, olfactory mucosa and bulb, superior, medium and inferior concha.
- 3| It shows blood supply and nerve endings of the nasal and olfactory mucosa and the palate.
- 4| Supplied with base.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB004 | 2     | 3x             | 15x28x33 cm |

► SENSE ORGANS - Skin section



- 1| Three-dimensional section of human thin skin.
- 2| Representation of epidermis, dermis and hypodermis.
- 3| Different structures are also represented such as hair follicles, sebaceous and sweat glands, sensitive receptors, nerves and blood and lymphatic vessels.
- 4| Supplied with base.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB029 | 1     | 60x            | 17x17x18 cm |

**QBB - Models, anatomy**



**► SKELETON AND VERTEBRAL COLUMN - Vertebrae and pelvis**

- 1| Shows the morphology and location of the cervical, thoracic, lumbar and sacra.
- 2| The model includes a representation of the intervertebral discs and pelvis.
- 3| Supplied with support.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB006 | 1     | 1x             | 92x34x15 cm |



**► SKELETON AND VERTEBRAL COLUMN - Flexible vertebral column**

- 1| Vertebral column with occipital bone and pelvis.
- 2| Representation of a vertebral arteries and a slipped disc.
- 3| Supplied wit steel support.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB007 | 1     | 1x             | 92x34x15 cm |



**► SKELETON AND VERTEBRAL COLUMN - Mini skeleton**

- 1| Table skeleton with base.
- 2| With detachable cranium dome and mile lower jaw.
- 3| Supplied with support.

| Code   | Parts | Magnifications | Height |
|--------|-------|----------------|--------|
| QBB010 | 1     | 0.25x          | 45 cm  |



**► SKELETON AND VERTEBRAL COLUMN - Human skeleton**

- 1| Made of PVC, natural size.
- 2| Mobil lower jaw with 3 extractable teech and detachable cranium.
- 3| Nerve branches, vertebral artery and a slipped disc.
- 4| Support with wheels
- 5| Skeleton detailed poster.

| Code   | Description                           | Magnifications |
|--------|---------------------------------------|----------------|
| QBB011 | Human skeleton                        | 1x             |
| QBB012 | Numerated human skeleton with muscles | 1x             |



QBB012\_ Pelvis



QBB012\_ Rib



QBB012\_ Knee







### ► SKELETON AND VERTEBRAL COLUMN - Cranium and jaw



- 1 | Life-size representation of the cranium and face skeleton.
- 2 | The cranium dome is detachable.
- 3 | Mobile lower jaw presents 3 extractable teeth.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB014 | 2     | 1x             | 22x15x17 cm |

### ► SKELETON AND VERTEBRAL COLUMN - Body with muscles



- 1 | Made of PVC
- 2 | It includes the representation of more than 400 structures of muscles and internal organs of human body and an explicative index.
- 3 | Internal organs are detachable in a total number of 31 pieces.
- 4 | Placed vertically on a base support with high stability.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB013 | 32    | 0.75x          | 80x33x23 cm |

QBB013\_ Thigh



QBB013\_ Back



QBB013\_ Head and neck



### ► HEAD AND TORSO - Dual-sex human torso, open back



- 1 | Made of PVC, life-size.
- 2 | It shows all human systems: digestive, respiratory, urinary, reproductive and nervous.
- 3 | It shows the organs composing the head, neck, thoracic cavity (trachea, lungs, heart, oesophagus), male and female pelvic cavity, abdominal cavity (liver, stomach, intestine, pancreas).
- 4 | It also presents the back opened to show the vertebral column.
- 5 | Assembled on a base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB041 | 24    | 1x             |

## QBB - Models, anatomy

### HEAD AND TORSO - Human mini torso with head

- 1 | Human male mini-torso.
- 2 | With the following detachable pieces: head, brain, lung lobules, stomach, heart, liver, intestinal pack and male genital system.
- 3 | Supplied with base.

| Code   | Parts | Height |
|--------|-------|--------|
| QBB015 | 12    | 42 cm  |



### HEAD AND TORSO - Head and neck

- 1 | Natural size.
- 2 | Left hemisphere can be disassembled into four parts: head, left side of cranium, eyeball and cerebellum.
- 3 | Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB026 | 7     | 1x             |



### NERVOUS SYSTEM - Spinal cord

- 1 | Made of PVC.
- 2 | Representing grey matter (anterior and posterior horns, grey commissure and central canal), white matter (anterior, lateral and posterior funiculus, anterior commissure, anterior median fissure and posterior median sulcus) as well as anterior and posterior roots.
- 3 | It includes two vertebrae and shows the motor and sensory roots
- 4 | Supplied with base.

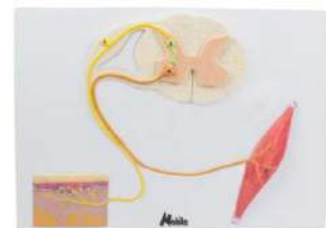
| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB024 | 1     | 2x             |



### NERVOUS SYSTEM - Spinal cord, muscle and skin

- 1 | Made of PVC.
- 2 | It includes the spinal cord (grey and white matter), a skin section with its receptor nerve end and the corresponding muscle with its motor nerve end
- 3 | All parts are assembled on the same base.

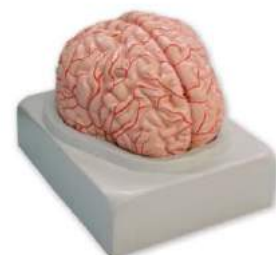
| Code   | Parts | Dimensions |
|--------|-------|------------|
| QBB025 | 1     | 50x36x6 cm |



### NERVOUS SYSTEM - Brain

- 1 | Made of PVC.
- 2 | Divided in two part.
- 3 | Model QBB027 can be disassembled into frontal and parietal lobes, half the brainstem and half cerebellum.
- 4 | Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB027 | 9     | 1x             |
| QBB028 | 2     | 1x             |





## QBB - Models, anatomy



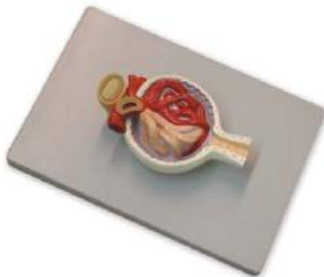
► URINARY SYSTEM - Kidney, glomerulus and nephron



- 1 | Kidney longitudinal section, nephron, blood vessels and renal corpuscle representation.
- 2 | All parts are assembled on the same base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB030 | 1     | 3x/100x/650x   |

► URINARY SYSTEM - Renal corpuscle



- 1 | This part of the nephron is responsible for filtration of the plasma.
- 2 | It includes the two basic structures: Bowman capsule and renal glomerulus.
- 3 | All parts are assembled on the same base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB017 | 1     | 700x           |

► URINARY SYSTEM - Urinary system



- 1 | Includes male and female anatomies (longitudinal section) and the organs kidney, ureters, bladder, urethra and blood vessels.
- 2 | Wide and strong panel with a handle to facilitate its use transport.
- 3 | Assembled on a base

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB018 | 1     | 1x             |

► URINARY SYSTEM - Urinary system



- 1 | Natural size model of the male and female urinary system .
- 2 | 5 detachable pieces corresponding to kidney and genital organs (bladder with prostate and bladder with uterus and ovaries respectively). .
- 3 | The model shows the retroperitoneal cavity, pelvis with bones and muscles, inferior cava, aorta with ramifications, upper urinary tract, kidney with adrenal gland, ureter, bladder, etc..

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB019 | 6     | 1x             |

## QBB - Models, anatomy

### ► RESPIRATORY SYSTEM - Respiratory system

- 1| They are represented the larynx, lungs and trachea.
- 2| We can see the trachea and two channels in which divides, called bronchial tubes, those bronchial tubes are subdivided becomes the alveolus.
- 3| A lot of disassemble parts including heart.
- 4| Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB008 | 7     | 1x             |



### ► RESPIRATORY SYSTEM - Larynx

- 1| Shows the structure of the respiratory tract that connects the pharynx to the trachea.
- 2| It contains the vocal cords, formed by elastic folds of its walls..
- 3| It shows the prominent part of the anterior side of the neck, commonly known as "Adam's apple".
- 4| Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB022 | 4     | 2.5x           |



### ► GENITALIA AND PREGNANCY - Placenta

- 1| Made of PVC.
- 2| This model represents a section of the placenta including the umbilical cord with a detailed inner structure, highly vascularized with umbilical and maternal blood vessels and placental villi and septum.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB036 | 1     | 1x             |



### ► GENITALIA AND PREGNANCY - Embryo development

- 1| Made of PVC, natural size.
- 2| Model composed of 8 natural size representations that illustrate the development of human fetus from the 4th week until the 6th month of pregnancy.
- 3| They show a single or twin fetus in normal, transversal or breech positions with the placenta and uterus as well as ovaries and the beginning of the vagina.
- 4| All parts are assembled on the same base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB037 | -     | 1x             |







## QBB - Models, anatomy



► GENITALIA AND PREGNANCY - Pregnancy pelvis



- 1 | Made of PVC, natural size.
- 2 | Represents the female pelvis in the 40th week of pregnancy and the fetus in its normal position previous to birth.
- 3 | The fetus can be taken off for its study.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB038 | 2     | 1x             |

► GENITALIA AND PREGNANCY - Male genital apparatus



- 1 | Made of PVC.
- 2 | Vertical section of genital male apparatus.
- 3 | Composed of the penis, testicles inside the scrotum, deferent conducts and the prostate.
- 4 | A representation of the bladder and the rectal colon are also included..
- 5 | Natural size model placed on a vertical and rotating rod stand.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB020 | 2     | 1x             |

► GENITALIA AND PREGNANCY - Female genital apparatus



- 1 | Made of PVC.
- 2 | Vertical section of the female genital apparatus in charge of producing female gametes.
- 3 | It shows different parts as vagina, uterus, ovaries and Fallopian tubes as well as bladder and rectal colon.
- 4 | Natural size model placed on a vertical and rotating rod stand.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB021 | 2     | 1x             |

► DENTAL MODELS - Mouth cavity



- 1 | Specially designed to show how to clean and protect your teeth appropriately.
- 2 | They are represented the following parts: tongue, teeth, gingival, jawbones and palate.
- 3 | Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB040 | 2     | 2x             |

## QBB - Models, anatomy

### ► DENTAL MODELS - Canine and molar

- 1 | Canine and molar with double root.
- 2 | Both have two detachable parts that show a longitudinal section of crown and root.
- 3 | Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB031 | 4     | 10x            |



### ► DENTAL MODELS - Upper incisor

- 1 | Upper incisor, cross section of the crown and longitudinal section of the root.
- 2 | Supplied with base.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB032 | 2     | 8x             | 24x11x11 cm |



### ► DENTAL MODELS - Upper premolar

- 1 | Upper twin-root molar with caries.
- 2 | Cross section of the crown and the root.
- 3 | Supplied with base.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB033 | 2     | 8x             | 27x10x12 cm |



### ► DENTAL MODELS - Half lower mandible

- 1 | Right half of the lower jaw with second dentition showing several caries.
- 2 | A part can be open to show blood supply and dental roots.
- 3 | Supplied with base.

| Code   | Parts | Magnifications | Dimensions |
|--------|-------|----------------|------------|
| QBB034 | 2     | 1x             | 7x10x2 cm  |



### ► DENTAL MODELS - Upper molar, 3 roots

- 1 | Upper triple-root molar with caries.
- 2 | Longitudinal section of the crown and the root.
- 3 | Supplied with base.

| Code   | Parts | Magnifications | Dimensions  |
|--------|-------|----------------|-------------|
| QBB035 | 2     | 6x             | 24x12x12 cm |





## QBB - Models, anatomy



▶ OTHER ORGANS - Heart



- 1 | Represented arteries, capillary blood vessels, venules, veins, atriums and ventricles.
- 2 | Disassembled in 3 parts: aorta and pulmonary arteries and the heart.
- 3 | Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB005 | 3     | 3x             |

▶ OTHER ORGANS - Stomach



- 1 | The upper half of the model is removable.
- 2 | They are represented the layers of the stomach wall, inner part or the oesophagus, cardiac part of the stomach, upper part of the duodenum, vessels and nerves.
- 3 | Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBB023 | 2     | 2x             |

▶ ADULT TORSO CPR MANIKIN



- 1 | We present this new range of CPR models suitable for teaching and learning the technique of Cardiopulmonary resuscitation (CPR) in health training centers.
- 2 | Allows the application of artificial breath and chest compression.
- 3 | With visual and sound alarm of both the correct position of hands and applied intensity in chest compression.
- 4 | Kit of accessories and spare parts included with the model:
  - 1 piece mouth/nose
  - 5 disposable airways
  - 1 box of hygienic applications (C/50 pcs)
  - 1 working surface
  - 1 cover for model storage and transport

| Code   | Dimensions  |
|--------|-------------|
| QBB039 | 80x30x40 cm |



## QBG - Botany



▶ Plant cell



- 1 | Longitudinal section that shows the internal structure of the plant cell.
- 2 | It represents the compound for the nucleus of the most representative organelles (vacuoles, chloroplasts, ER and mitochondria).
- 3 | Shows the external morphology of cell union between adjacent cells, through the cell wall and its primary pores on intermembrane connection that constitute the plasmodesmata.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBG004 | 1     | 10000x         |

## QB - Botany



### ► Dicotyledon stem

- 1| Cross and longitudinal section of the root.
- 2| It shows the vascular bundles (xylem, phloem, procambium), the cortex and the parenchyma (medullary and interfascicular) as well as outer epidermis.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBG001 | 1     | 125x           |



### ► Longitudinal section of root

- 1| Longitudinal section of root that shows its internal and external morphology .
- 2| Represents division zones (calyptra and apical meristem) elongation and differentiation (apical hair).
- 3| It allows to distinguish from outside to inside: epidermis, cortical parenchyma, vascular beam, xylem and phloem.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBG002 | 1     | 100x           |



### ► Peach blossom

- 1| Represents the essentials parts of a flower: receptacle, calyx, corolla, stamens, filament and pistils.
- 2| Supplied with base.

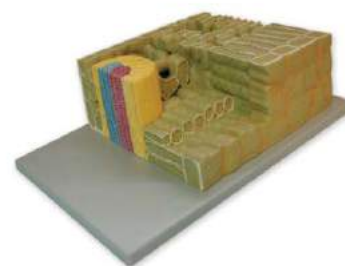
| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBG003 | 1     | 20x            |



### ► Leaf section

- 1| Cross and longitudinal section of the leaf.
- 2| Are represented the upper epidermis, palisade mesophyll, vascular tissue, spongy mesophyll, lower epidermis and stoma.
- 3| Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBG005 | 1     | 700x           |



### ► Vascular bundles

- 1| Cross and longitudinal section of the vascular bundles.
- 2| Represents the different sections numerically (parenchyma, xylem, phloem, cambium, fiber, etc).
- 3| Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBG006 | 1     | 550x           |





## QBG - Botany



## Fertilization of angiosperm



- 1 | Sample with the male organ in detail (androecium) and female (gynoecium) of an angiosperm flower.
- 2 | It shows the stamens, with pollen and the carpel (stigma, style, ovary and ova).

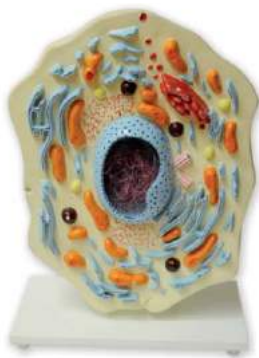
| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBG007 | 1     | 300x           |



## QBN - Zoology



## Animal cell



- 1 | Longitudinal section which provide you an overview of the general morphology commonly present in animal eukaryotic cell.
- 2 | Includes the nucleus and its general genetic content (DNA / RNA).
- 3 | It shows various organelles and elements presents in the cytoplasmic space (smooth and rough endoplasmic reticulum, Golgi, mitochondria, vesicles, lysosomes, ribosomes, centrioles, etc.).

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBN001 | 1     | 10000x         |

## Ameba



- 1 | Longitudinal section of an unicellular organism called Amoeba proteus.
- 2 | It allows to distinguish morphology sections as the plasmatic membrane, digestive and contractile vacuoles and its characteristic pseudopods used to feed and to move in the medium.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBN002 | 1     | 10000x         |

## Mitosis



- 1 | Made of PVC.
- 2 | Illustrates the division of the nucleus (mitosis) in a dividing cell at different times, all of them included within the four stages of the nuclear division: prophase, metaphase, anaphase and telophase.
- 3 | All parts are assembled on the same base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBN003 | 1     | 10000x         |

## QBN - Zoology



### ► Earthworm dissection

- 1| Longitudinal section of the anterior region of an earthworm (*Lumbricus terrestris*).
- 2| Transversal section raised .
- 3| The digestive tube can be dismantled.
- 4| Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBN004 | 2     | 15x            |



### ► Locust dissection

- 1| Longitudinal section of locust (*Locusta migratoria*).
- 2| With the following parts to disassemble: legs, antenna, buccal apparatus, wings and digestive system.
- 3| Supplied with base.

| Code   | Parts | Magnifications |
|--------|-------|----------------|
| QBN005 | 6     | 10x            |



### ► Dog skeleton

- 1| Assembled on a rectangular base of black plastic.
- 2| It has two vertical metal supports that join the skeleton in the thoracic and lumbar vertebrae respectively.
- 3| The tail (caudal vertebrae) is detachable as well as the head.
- 4| Mobile jaw.

| Code   | Parts | Dimensions  |
|--------|-------|-------------|
| QBN006 | 1     | 53x20x30 cm |



### ► Cat skeleton

- 1| Assembled on a rectangular base of black plastic.
- 2| It has two vertical metal supports that join the skeleton in the thoracic and lumbar vertebrae respectively.
- 3| The tail (caudal vertebrae) is detachable as well as the head.
- 4| Mobile jaw.

| Code   | Parts | Dimensions  |
|--------|-------|-------------|
| QBN007 | 1     | 47x20x27 cm |



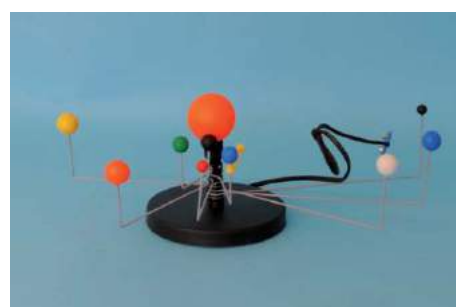
## QBQ - Astronomy



### ► Solar system

- 1| Sun+9 planet+terrestrial moon, lighting of the Sun
- 2| Gyrotary mechanism of the planets with wooden support

| Code   | Magnifications | Parts |
|--------|----------------|-------|
| QBQ001 | 20x            | 1     |







## QBR - Molecular kits



▶ CHART 1: "Number of atoms"

| Code   | Carbon | Hydrogen | Oxygen | Nitrogen | Sulfur | Phosphorus | Halogens | Metal |
|--------|--------|----------|--------|----------|--------|------------|----------|-------|
| QBR003 | 20     | 30       | 6      | 6        | 2      | 2          | 8        | 2     |
| QBR004 | 12     | 14       | 22     | 10       | 13     | 7          | 8        | 14    |
| QBR005 | 66     | 105      | 40     | 34       | 2      | 6          | -        | 2     |

▶ CHART 2: "Number of bonds"

| Code   | Short (white) | Medium (gray) | Long (grey) | Non-visible (grey) |
|--------|---------------|---------------|-------------|--------------------|
| QBR003 | 50            | 41            | 12          | -                  |
| QBR004 | -             | 50            | 36          | -                  |
| QBR005 | 100           | -             | -           | 60                 |

▶ Organic Chemistry molecular kit, student



- 1| It is composed of a total of 50 pcs of atoms for the representation of simple molecules of organic chemistry
- 2| The kit is supplied in a box for storage and with a tool for detaching unions.
- 3| . The kit is composed of: Carbon (20 pieces), Hydrogen (30 pieces), Oxygen (6 pieces), Nitrogen (6 pieces), Sulfur (2 pieces), Phosphorus (2 pieces), Halogens (8 pieces), Metal (2 pieces).
- 4| Bonds: short (50, white colour), medium (41, grey colour), long (12, grey colour)

## Code

QBR003

▶ Organic Chemistry molecular kit, teacher



- 1| It is composed of a total of 97 pcs of atoms for the representation of simple molecules of organic chemistry
- 2| The kit is supplied in a box for storage and with a tool for detaching unions.
- 3| The kit is composed of: Carbon (12 pieces), Hydrogen (14 pieces), Oxygen (22 pieces), Nitrogen (10 pieces), Sulfur (13 pieces). Halogens (8 pieces), Meta (14 pieces).
- 4| Bonds: short (50, white colour), long (36, grey colour)

## Code

QBR004

▶ Biochemistry molecular kit, teacher



- 1| It is composed of a total of 255 pcs of atoms for the representation of biochemistry molecules such as amino acids, peptides, polysaccharides, purines, phospholipids, nucleotides, etc
- 2| The kit is supplied in a box for storage and with a tool for detaching unions.
- 3| The kit is composed of: Carbon (66 pieces), Nitrogen (34 pieces), Metal (2 pieces), Hydrogen (105 pieces), Oxygen (40 pieces), Sulfur (2 pieces), Phosphorus (6 pieces).
- 4| Bonds: short (100, white colour), not visible (60, grey colour)

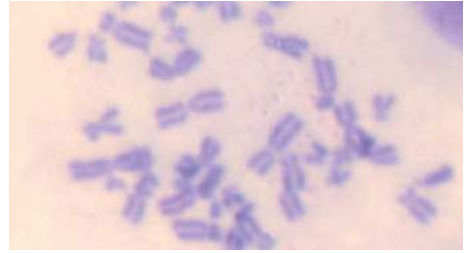
## Code

QBR005

## QGB - Animal histology

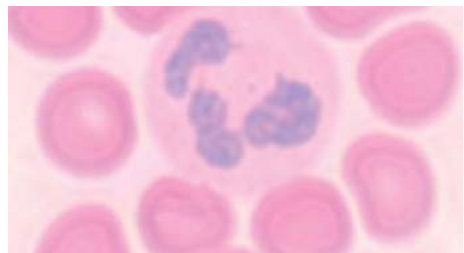
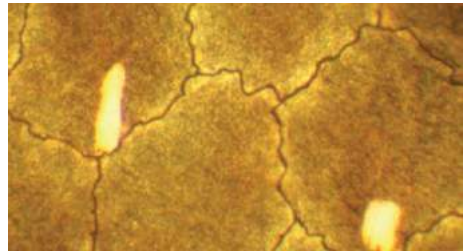
### Cytology

| Code   | Description                                 |
|--------|---------------------------------------------|
| QGB001 | Mitosis horse Ascaris eggs, SEC.            |
| QGB002 | Locusta testicle, SEC. )                    |
| QGB003 | Giant chromosomes of salivary gland, W.M.   |
| QGB077 | Human chromosomes in blood, male and female |



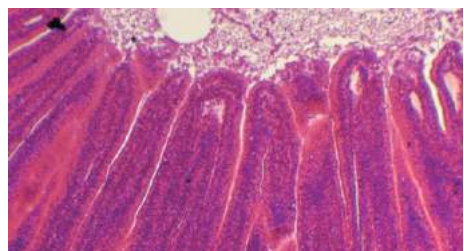
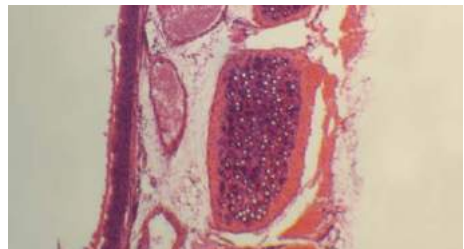
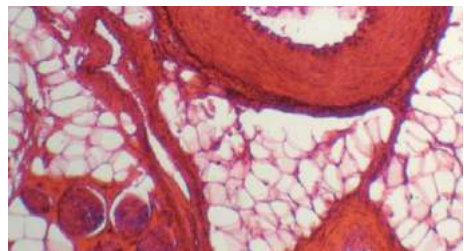
### Basic tissue types

| Code   | Description                           |
|--------|---------------------------------------|
| QGB011 | Simple flat epithelium, W.M.          |
| QGB012 | Stratified flat epithelium, SEC.      |
| QGB013 | Adipose tissue, SEC.                  |
| QGB014 | Loose connective tissue, W.M.         |
| QGB015 | Cartilage, SEC.                       |
| QGB016 | Compact bone, W.M.                    |
| QGB017 | Human blood smear                     |
| QGB018 | Frog blood smear                      |
| QGB019 | Fish blood smear                      |
| QGB020 | Snake blood smear                     |
| QGB021 | Smooth muscle, teared, W.M.           |
| QGB022 | Skeletal muscle, L.S. and C.S.        |
| QGB023 | Cardiac muscle, SEC.                  |
| QGB058 | Gallus domestica blood smear          |
| QGB059 | Tendon, dense connective tissue, L.S. |
| QGB066 | Mouse tail, C.S.                      |
| QGB078 | Bird blood smear                      |
| QGB079 | Ciliated epithelium, SEC.             |



### Organs and systems

| Code                    | Description                  |
|-------------------------|------------------------------|
| Circulatory system      |                              |
| QGB046                  | Artery and vein, C.S.        |
| QGB074                  | Frog heart, C.S.             |
| QGB075                  | Frog artery, C.S.            |
| QGB076                  | Frog vein, C.S.              |
| Respiratory system      |                              |
| QGB043                  | Lung, SEC.                   |
| QGB044                  | Lung, blood irrigation, SEC. |
| QGB045                  | Smoking lung, human, SEC.    |
| QGB063                  | Trachea, C.S.                |
| QGB064                  | Trachea, L.S.                |
| Gastrointestinal system |                              |
| QGB005                  | Frog small intestine, s.t.   |
| QGB033                  | Esophagus, s.t.              |
| QGB034                  | Parotid, SEC.                |
| QGB035                  | Stomach wall, SEC.           |
| QGB036                  | Small intestine, s.t.        |
| QGB037                  | Jejunum, SEC.                |
| QGB039                  | Large intestine, s.t.        |
| QGB040                  | Pancreas, SEC.               |
| QGB042                  | Gallbladder, SEC.            |
| QGB061                  | Pig liver, SEC.              |
| QGB062                  | Rabbit liver, SEC.           |
| QGB070                  | Frog stomach wall, SEC.      |
| QGB071                  | Frog liver, SEC.             |
| QGB073                  | Frog large intestine, SEC.   |

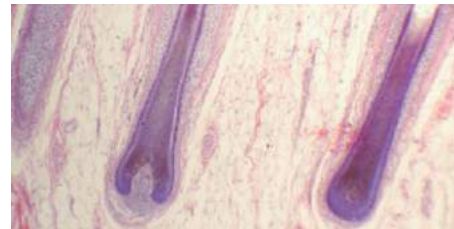
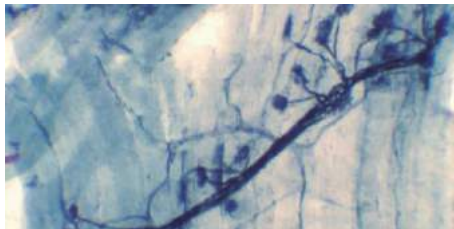
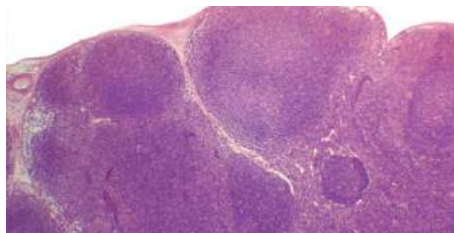
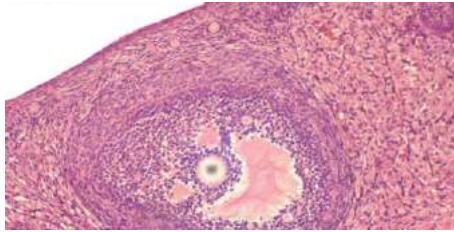




## QGB - Animal histology



## Organs and systems



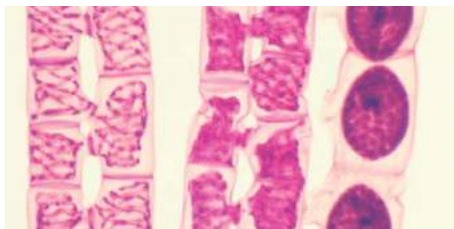
| Code                                          | Description                               |
|-----------------------------------------------|-------------------------------------------|
| Reproductive system and embryonic development |                                           |
| QGB006                                        | Frog egg, SEC.                            |
| QGB007                                        | Two cell stage frog egg, SEC.             |
| QGB008                                        | Cleavage stage frog egg, SEC.             |
| QGB009                                        | Frog blastula, SEC.                       |
| QGB010                                        | Frog gastrula, SEC. .                     |
| QGB050                                        | Rabbit ovary, SEC. .                      |
| QGB051                                        | Human sperm smear                         |
| QGB052                                        | Fallopian tube, C.S.                      |
| QGB053                                        | Mammary gland, active phase, SEC.         |
| QGB065                                        | Rabbit testicle, SEC.                     |
| QGB067                                        | Frog sperm smear                          |
| QGB068                                        | Frog testicle, SEC.                       |
| QGB069                                        | Frog ovary, SEC.                          |
| Urinary system                                |                                           |
| QGB047                                        | Kidney, L.S.                              |
| QGB048                                        | Kidney, blood irrigation, SEC.            |
| QGB049                                        | Urinary bladder, SEC.                     |
| QGB072                                        | Frog kidney, L.S.                         |
| Immune system                                 |                                           |
| QGB038                                        | Appendix section                          |
| QGB041                                        | Spleen, SEC.                              |
| QGB054                                        | Lymph node, sec                           |
| Nervous system and sense organs               |                                           |
| QGB004                                        | Frog skin, W.M.                           |
| QGB024                                        | Rabbit spinal cord, C.S.                  |
| QGB025                                        | Brain, rabbit, silver staining, SEC.      |
| QGB026                                        | Cerebellum, rabbit, silver staining, SEC. |
| QGB027                                        | Cerebellum, rabbit, HE, SEC.              |
| QGB028                                        | Motor nerve endings, rabbit, W.M.         |
| QGB029                                        | Motor neuron, W.M.                        |
| QGB030                                        | Brain, human, HE, SEC.                    |
| QGB031                                        | Brain, human, silver staining, SEC.       |
| QGB032                                        | Taste buds, rabbit, SEC.                  |
| QGB055                                        | Eyeball, L.S.                             |
| QGB056                                        | Human skin, sweat glands, SEC.            |
| QGB057                                        | Human skin, hair follicles, SEC.          |
| QGB060                                        | Tongue with filiform papillae, L.S.       |



## QGF - Plant histology

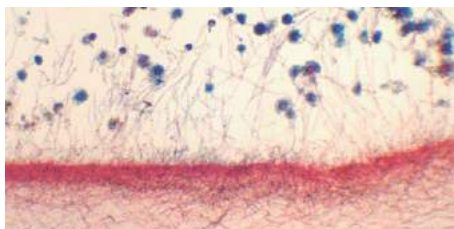


## Alga



| Code   | Description                     |
|--------|---------------------------------|
| QGF010 | Chlamydomonas, W.M.             |
| QGF011 | Volvox, W.M.                    |
| QGF012 | Spirogyra conjugation, W.M.     |
| QGF013 | Porphyra, W.M.                  |
| QGF023 | Brown alga leaf, C.S.           |
| QGF116 | Spirogyra vegetative mass, W.M. |
| QGF125 | Blue-green alga, W.M.           |
| QGF129 | Oscillatoria, W.M.              |
| QGF130 | Euglena, W.M.                   |

## Fungi and lichens



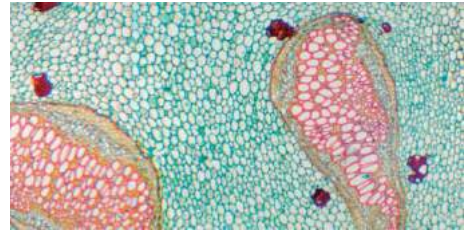
| Code   | Description              |
|--------|--------------------------|
| QGF004 | Mushroom, SEC.           |
| QGF005 | Rhizopus nigricans, W.M. |
| QGF006 | Penicillium, W.M.        |
| QGF007 | Aspergillus, W.M.        |
| QGF008 | Yeast, W.M.              |
| QGF009 | Lichen, SEC.             |



## QGF - Plant histology

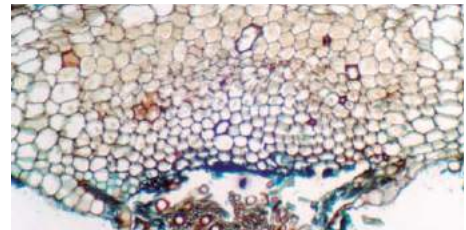
### Ferns

| Code   | Description                              |
|--------|------------------------------------------|
| QGF024 | Fern prothallus w/young sporophyte, W.M. |
| QGF025 | Fern prothallus w/antheridium, C.S.      |
| QGF026 | Fern prothallus w/archegonium, C.S.      |
| QGF117 | Fern sorus, SEC.                         |
| QGF118 | Fern subterraneous stem, C.S.            |
| QGF128 | Fern sporangium, W.M.                    |



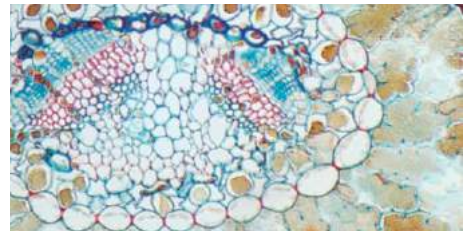
### Moss and liverworts

| Code   | Description                  |
|--------|------------------------------|
| QGF014 | Marchantia thallus, s.t.     |
| QGF015 | Marchantia sorus, s.l.       |
| QGF016 | Marchantia antheridium, s.l. |
| QGF017 | Marchantia archegonia, s.l.  |
| QGF018 | Moss leaf, m.e.              |
| QGF019 | Moss, m.e.                   |
| QGF020 | Moss protonema, m.e.         |
| QGF021 | Moss antheridium, s.l.       |
| QGF022 | Moss archegonia, s.l.        |
| QGF122 | Moss stem, s.t.              |



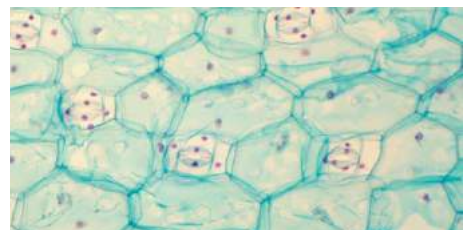
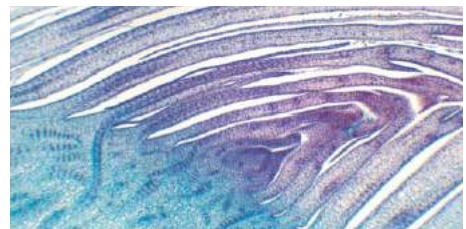
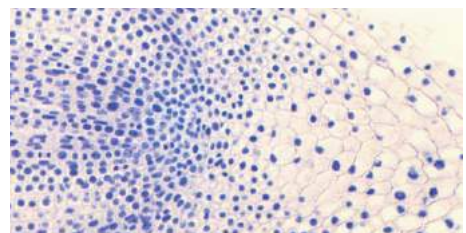
### Gymnosperms

| Code   | Description                  |
|--------|------------------------------|
| QGF027 | Pine leaf, s.t.              |
| QGF028 | 1 year old pine stem, s.t.   |
| QGF029 | 10 years old pine stem, s.t. |
| QGF030 | Male pine cone, s.l.         |
| QGF031 | Female pine cone, s.l.       |
| QGF032 | Pine pollen, m.e.            |



### Angiosperms- basic structures and tissues

| Code   | Description                                        |
|--------|----------------------------------------------------|
| QGF046 | Mitosis onion root tip, s.l.                       |
| QGF051 | Punta de raíz de Narcissus tazetta (narciso), s.l. |
| QGF065 | Stem with collenchyma, C.S.                        |
| QGF066 | Stem with sclerenchyma, C.S.                       |
| QGF067 | Stem with lenticels, C.S.                          |
| QGF068 | Morus alba petiole, abscission layer, L.S.         |
| QGF069 | Stem with sieve tubes, L.S.                        |
| QGF070 | Stem with intercalary meristem, L.S.               |
| QGF071 | Syringo stem tip, L.S.                             |
| QGF072 | Hydrilla verticillata stem tip, L.S.               |
| QGF073 | Onion stomata, W.M.                                |
| QGF074 | Triticum aestivum stomata, W.M.                    |
| QGF075 | Oryza sativa stomata, W.M.                         |
| QGF076 | Vicia faba stomata, s.e.                           |
| QGF077 | Commelina communis stomata, W.M.                   |
| QGF078 | Three types of plant leaves, C.S.                  |
| QGF080 | Nerium indicum leaf, sunken stomata, C.S.          |
| QGF086 | Osmanthus fragrans leaf, stone cells, C.S.         |
| QGF091 | Sunken plant leaf, aerenchyma, C.S.                |
| QGF105 | Stone cells, pear fruit, SEC.                      |
| QGF106 | Plasmodesmata, endosperm SEC.                      |
| QGF113 | Meiosis, lily anther, C.S.                         |
| QGF126 | Persimmon pulp cells                               |
| QGF127 | Sugarcane armpit bud, C.S.                         |
| QGF132 | Solanum tuberosum tuber, SEC.                      |

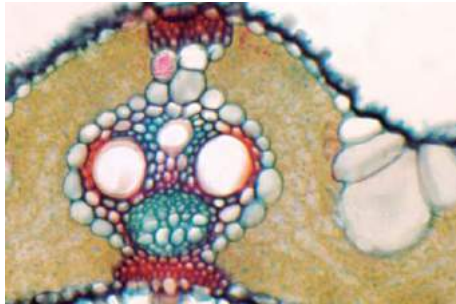




## QGF - Plant histology

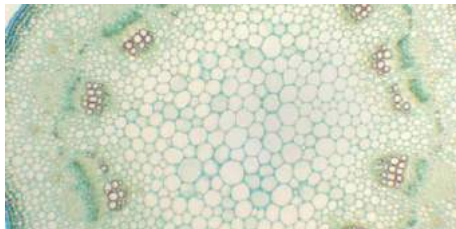


## ► Angiospermas - Leaves



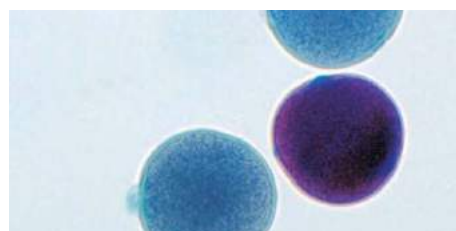
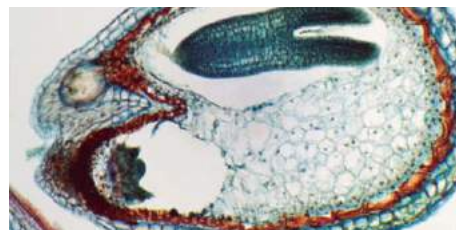
| Code   | Description                       |
|--------|-----------------------------------|
| QGF079 | Ficus leaf, sunken stomata, C.S.  |
| QGF081 | Ligustrum lucidum leaf, C.S.      |
| QGF082 | Jasminum nudiflorum leaf, C.S.    |
| QGF083 | Lily leaf, C.S.                   |
| QGF084 | Coffee leaf, C.S.                 |
| QGF085 | Camellia sinensis leaf, C.S.      |
| QGF087 | Triticum aestivum leaf, C.S.      |
| QGF088 | Oryza sativa leaf, C.S.           |
| QGF089 | Corn leaf, C.S.                   |
| QGF090 | Narzissus tazetta leaf, C.S.      |
| QGF092 | Fig leaf, C.S.                    |
| QGF093 | Privet leaf, C.S.                 |
| QGF094 | Sugarcane leaf, C.S.              |
| QGF111 | Mono and dicotyledon leaves, C.S. |
| QGF003 | Nicotina tabacum leaf C.S.        |

## ► Angiospermas - Stems



| Code   | Description                       |
|--------|-----------------------------------|
| QGF052 | Helianthus young stem, L.S.       |
| QGF053 | Sambucus williamsii stem, C.S.    |
| QGF054 | Hibiscus syriacus stem, C.S.      |
| QGF055 | Tilia 1 year stem, C.S.           |
| QGF056 | Arachis hypogaea young stem, C.S. |
| QGF057 | Arachis hypogaea old stem, C.S.   |
| QGF058 | Triticum aestivum stem, C.S.      |
| QGF059 | Corn stem, C.S.                   |
| QGF060 | Corn stem, L.S.                   |
| QGF061 | Medicago sativa stem, C.S.        |
| QGF062 | Orange stem, C.S.                 |
| QGF063 | Nerium indicum stem, C.S.         |
| QGF064 | Pelargonium hortorum stem, C.S.   |
| QGF110 | Mono and dicotyledon stems, C.S.  |
| QGF112 | Tilia 1, 2 and 3 year stem, C.S.  |
| QGF115 | Herbage and woody stem, C.S.      |
| QGF119 | Helianthus stem, C.S.             |
| QGF120 | Gossypium young stem, C.S.        |
| QGF121 | Gossypium old stem, C.S.          |
| QGF123 | Sugarcane stem, C.S.              |
| QGF001 | Ricinus comunis old stem C.S.     |
| QGF002 | Pyrus s.p. stem, C.S.             |

## ► Angiospermas - Reproductive organs and seeds



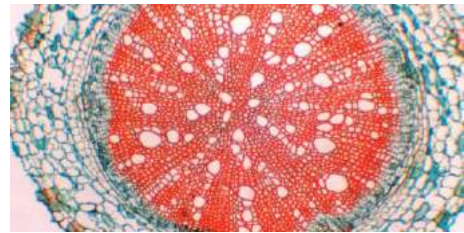
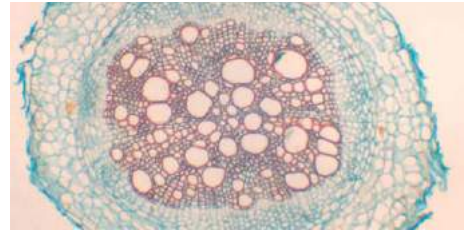
| Code   | Description                   |
|--------|-------------------------------|
| QGF095 | Lily pollen, W.M.             |
| QGF096 | Lily anther, C.S.             |
| QGF097 | Lily ovary, C.S.              |
| QGF098 | Narcissus tazetta ovary, C.S. |
| QGF099 | Helianthus ovary, c.l.        |
| QGF100 | Capsella young embryo, SEC.   |
| QGF101 | Capsella middle embryo, SEC.  |
| QGF102 | Capsella mature embryo, SEC.  |
| QGF103 | Triticum aestivum seed, L.S.  |
| QGF104 | Corn seed, L.S.               |
| QGF107 | Capsicum pericarp, SEC.       |
| QGF108 | Luffa cylindrica pollen, W.M. |
| QGF114 | Lilium embryo sac development |
| QGF133 | Germinated pollen, W.M.       |

▶ QGF - Plant histology



▶ Angiospermas - Roots

| Code   | Description                            |
|--------|----------------------------------------|
| QGF033 | Cuscuta chinensis parasitic root, C.S. |
| QGF034 | Helianthus old root, C.S.              |
| QGF035 | Ranunculus japonicus root, C.S.        |
| QGF036 | Vicia faba young root, c.t.            |
| QGF037 | Vicia faba old root, s.t.              |
| QGF038 | Vicia faba lateral root, C.S.          |
| QGF039 | Ipomoea batatas root, C.S.             |
| QGF040 | Iris root, C.S.                        |
| QGF041 | Gossypium root, C.S.                   |
| QGF042 | Glycine max root, C.S.                 |
| QGF043 | Glycine max root nodule, C.S.          |
| QGF044 | Raphanus sativus fleshy root, C.S.     |
| QGF045 | Daucus carota root, C.S.               |
| QGF047 | Onion root, C.S.                       |
| QGF048 | Corn root, C.S.                        |
| QGF049 | Oryza sativa root, C.S.                |
| QGF050 | Earthpea root, C.S.                    |
| QGF109 | Mono and dicotyledon roots, C.S.       |
| QGF124 | Mono and dicotyledon roots, C.S.       |
| QGF131 | Allium tuberosum root, C.S.            |

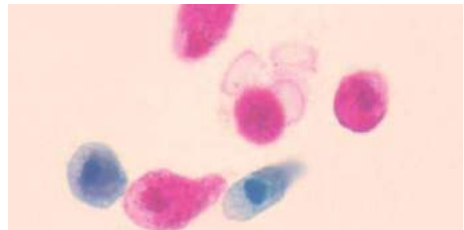


▶ QGJ - Zoology



▶ Bacteria and protozoa

| Code   | Description                   |
|--------|-------------------------------|
| QGJ001 | Paramecium, W.M.              |
| QGJ002 | Unicellular animal, W.M.      |
| QGJ046 | Three types of bacteria smear |



▶ Cnidaria

| Code   | Description          |
|--------|----------------------|
| QGJ003 | Hydra W.M.           |
| QGJ004 | Hydra spermary, C.S. |
| QGJ005 | Hydra ovary, C.S.    |
| QGJ009 | Hydra, L.S.          |
| QGJ047 | Hydra, C.S.          |



▶ Aschelminthes, molluscs and annelids

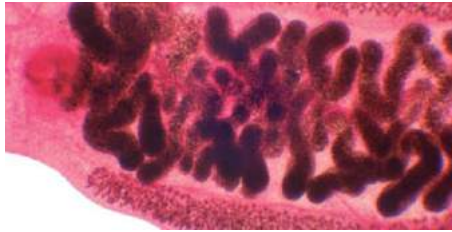
| Code   | Description                   |
|--------|-------------------------------|
| QGJ013 | Ascaris male, C.S.            |
| QGJ014 | Ascaris female, C.S.          |
| QGJ015 | Ascaris male and female, C.S. |
| QGJ052 | Mussel gills, W.M.            |
| QGJ016 | Hirudo niponia, W.M.          |
| QGJ017 | Earthworm, C.S.               |





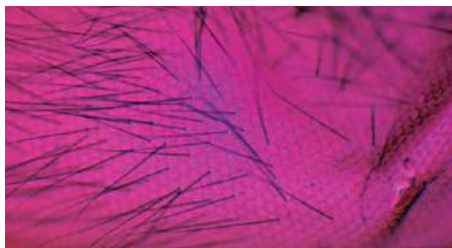


### ► Plathelminthes



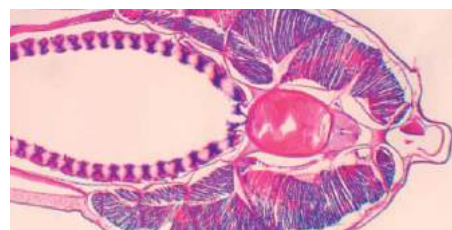
| Code   | Description                                   |
|--------|-----------------------------------------------|
| QGJ010 | Turbellaria, W.M.                             |
| QGJ011 | Turbellaria, C.S.                             |
| QGJ012 | Bladder worm, W.M.                            |
| QGJ028 | Schistosoma miracidium, W.M.                  |
| QGJ029 | Schistosoma male, W.M.                        |
| QGJ030 | Schistosoma female, W.M.                      |
| QGJ031 | Schistosoma male and female conjugation, W.M. |
| QGJ048 | Turbellaria, digestive tube, W.M.             |
| QGJ049 | Clonorchis sinensis, W.M.                     |
| QGJ064 | Schistosoma eggs, W.M.                        |
| QGJ065 | Schistosoma cercaria, W.M.                    |

### ► Arthropods



| Code   | Description                       |
|--------|-----------------------------------|
| QGJ006 | Daphnia, W.M.                     |
| QGJ007 | Siphonaptera, W.M.                |
| QGJ008 | Aphis, W.M.                       |
| QGJ018 | Male mosquito mouth parts, W.M.   |
| QGJ019 | Female mosquito mouth parts, W.M. |
| QGJ020 | House fly mouth parts, W.M.       |
| QGJ021 | Honeybee mouth parts, W.M.        |
| QGJ022 | Butterfly mouth parts, W.M.       |
| QGJ023 | Grasshopper mouth parts, W.M.     |
| QGJ024 | Periplaneta mouth parts, W.M.     |
| QGJ025 | Insect compound eye, SEC.         |
| QGJ033 | Caterpillar                       |
| QGJ034 | Spider, W.M.                      |
| QGJ035 | Mosquito larva, W.M.              |
| QGJ036 | House fly, W.M.                   |
| QGJ037 | Female mosquito, W.M.             |
| QGJ038 | Male mosquito, W.M.               |
| QGJ039 | Fruit fly, W.M.                   |
| QGJ040 | Ant, W.M.                         |
| QGJ041 | Insect digging leg, W.M.          |
| QGJ042 | Insect walking leg, W.M.          |
| QGJ043 | Insect swimming leg, W.M.         |
| QGJ044 | Insect leaping leg, W.M.          |
| QGJ045 | Insect pollinating leg, W.M.      |
| QGJ050 | Tetranychus telarius, W.M.        |
| QGJ051 | Insect compound eye, W.M.         |
| QGJ054 | House fly wing, W.M.              |
| QGJ055 | Butterfly wing, W.M.              |
| QGJ056 | Honeybee wing, W.M.               |
| QGJ057 | House fly leg, W.M.               |
| QGJ058 | Honeybee front and back leg, W.M. |
| QGJ059 | House fly antenna, W.M.           |
| QGJ060 | White ant antenna, W.M.           |
| QGJ061 | Mosquito antenna, W.M.            |
| QGJ062 | Chafer antenna, W.M.              |
| QGJ063 | Honeybee antenna, W.M.            |

### ► Chordates and vertebrates



| Code   | Description                           |
|--------|---------------------------------------|
| QGJ026 | Branchiostoma belcheri, W.M.          |
| QGJ027 | Branchiostoma belcheri, pharynx, C.S. |
| QGJ032 | Bird feather, W.M.                    |
| QGJ053 | Fish scale, W.M.                      |

## QGM - Minerals

| Code   | Description        |
|--------|--------------------|
| QGM001 | Schiste            |
| QGM002 | Micaschiste 2 type |
| QGM003 | Granite anatexis   |
| QGM004 | Gneiss             |
| QGM005 | Basalt 2 type      |
| QGM006 | Gabbro             |
| QGM007 | Andesite           |
| QGM008 | Rhyolite           |

## QGR - Slide sets

### Histology and organography

1 | Aimed at studying and recognizing the most important animal and plant tissues, and their organization and specialization to form different organs.

2 | Supplied in a plastic box that can hold 25 slides, to ensure their protection and durability.

#### 1\_ Animal histology

| Code   | Set              | Nº slides |
|--------|------------------|-----------|
| QGR001 | Animal histology | 24        |

1 | Includes slides of blood, epithelial tissue, connective tissue, bone, cartilage, muscle and nerve tissue.

|                                                |                                            |
|------------------------------------------------|--------------------------------------------|
| QGB017 - Human blood smear                     | QGB073 - Frog large intestine, C.S.        |
| QGB018 - Frog blood smear                      | QGB063 - Trachea, C.S.                     |
| QGB019 - Fish blood smear                      | QGB015 - Cartilage, SEC.                   |
| QGB020 - Snake blood smear                     | QGB016 - Compact bone, W.M.                |
| QGB058 - Gallus domestica blood smear          | QGB066 - Mouse tail, C.S.                  |
| QGB014 - Loose connective tissue, W.M.         | QGB047 - Kidney, L.S.                      |
| QGB059 - Tendon, dense connective tissue, L.S. | QGB021 - Smooth muscle, teared, W.M.       |
| QGB057 - Human skin hair follicles, SEC.       | QGB042 - Vesícula biliar, SEC.             |
| QGB056 - Human skin sweat glands, SEC.         | QGB022 - Skeletal muscle, L.S. and C.S.    |
| QGB012 - Stratified flat epithelium, SEC.      | QGB023 - Cardiac muscle, SEC.              |
| QGB011 - Simple flat epithelium, W.M.          | QGB024 - Rabbit spinal cord, C.S.          |
| QGB036 - Small intestine, C.S.                 | QGB028 - Motor nerve endings, rabbit, W.M. |

#### 2\_ Plant histology

| Code   | Set             | Nº slides |
|--------|-----------------|-----------|
| QGR002 | Plant histology | 24        |

1 | Includes slides of meristem, parenchyma, chlorenchyma, sclerenchyma, xylem, phloem and protective tissue.

|                                                     |                                                    |
|-----------------------------------------------------|----------------------------------------------------|
| QGF046 - Mitosis onion root tip, S.L.               | QGF081 - Ligustrum lucidum leaf, C.S.              |
| QGF105 - Stone cells, pear, SEC.                    | QGF076 - Vicia faba stomata, s.e.                  |
| QGF051 - <i>Narcissus tazetta</i> , root tip S.L.   | QGF132 - Solanum tuberosum tuber, SEC.             |
| QGF086 - Osmanthus fragrans leaf, stone cells, C.S. | QGF077 - Commelina communis stomata, W.M.          |
| QGF071 - Syringo stem tip, L.S.                     | QGF091 - Sunken plant leaf, aerenchyma, C.S.       |
| QGF082 - Jasminum nudiflorum leaf, C.S.             | QGF088 - Oryza sativa leaf, C.S.                   |
| QGF072 - Hydrilla verticillata stem tip, L.S.       | QGF065 - Stem with collenchyma, C.S.               |
| QGF069 - Stem with sieve tubes, L.S.                | QGF087 - Triticum aestivum leaf, C.S.              |
| QGF127 - Sugarcane armpit bud, C.S.                 | QGF053 - Sambucus williamsii stem, C.S.            |
| QGF074 - Triticum aestivum stomata, W.M.            | QGF080 - Nerium indicum leaf, sunken stomata, C.S. |
| QGF070 - Stem with intercalary meristem, L.S.       | QGF066 - Stem with sclerenchyma, C.S.              |
| QGF075 - Oryza sativa stomata, W.M.                 | QGF092 - Fig leaf, C.S.                            |



## QGR - Slide sets



## ► Histology and organography

## 3\_ Animal organography

| Code   | Set                 | Nº slides |
|--------|---------------------|-----------|
| QGR003 | Animal organography | 25        |

1 | Includes slides of mammal skin, digestive, urinary, respiratory, and reproductive apparatus, lymphoid, circulatory, nervous system and special sense organs.

QGB046 - Artery and vein, C.S.

QGB033 - Esophagus, C.S.

QGB035 - Stomach wall, SEC.

QGB037 - Jejunum, SEC.

QGB039 - Large intestine, C.S.

QGB040 - Pancreas, SEC.

QGB061 - Pig liver, SEC.

QGB042 - Gallbladder, SEC.

QGB041 - Spleen, SEC.

QGB054 - Spleen, SEC.

QGB047 - Kidney, S.L.

QGB048 - Kidney blood irrigation, SEC.

QGB049 - Urinary bladder, SEC.

QGB063 - Trachea, C.S.

QGB064 - Trachea, L.S.

QGB043 - Lung, SEC.

QGB044 - Lung, blood irrigation, SEC.

QGB050 - Rabbit ovary, SEC.

QGB065 - Rabbit testicle, SEC.

QGB024 - Rabbit spinal cord, C.S.

QGB057 - Human skin, hair follicles, SEC.

QGB056 - Human skin, sweat glands, SEC.

QGB060 - Tongue with filiform papillae, L.S.

QGB032 - Taste buds, rabbit, SEC.

QGB055 - Eyeball, L.S.

## 4\_ Plant organography

| Code   | Set                | Nº slides |
|--------|--------------------|-----------|
| QGR004 | Plant organography | 25        |

1 | Includes slides of gymnosperm and angiosperm (monocot and dicot) stems, roots, leaves and reproductive organs.

QGF028 - 1 year old pine stem, C.S.

QGF029 - 10 years old pine stem, C.S.

QGF112 - Tilia 1, 2 and 3 year stems, C.S.

QGF110 - Mono and dicotyledon stems, C.S.

QGF115 - Herbage and woody stem, C.S.

QGF056 - Arachis hypogaea young stem, C.S.

QGF057 - Arachis hypogaea old stem, C.S.

QGF067 - Stem with lenticels, C.S.

QGF109 - Mono and dicotyledon roots, C.S.

QGF033 - Cuscuta chinensis parasitic root, C.S.

QGF039 - Ipomoea batatas root, C.S.

QGF045 - Daucus carota root, C.S.

QGF035 - Ranunculus japonicus root, C.S.

QGF042 - Glycine max root, C.S.

QGF038 - Vicia faba lateral root, C.S.

QGF049 - Oryza sativa root, C.S.

QGF043 - Glycine max root nodule, C.S.

QGF027 - Hoja de pino, C.S.

QGF111 - Mono and dicotyledon leaves, C.S.

QGF078 - Three types of plant leaves, C.S.

QGF068 - Morus alba petiole, abscission layer, S.L.

QGF097 - Lily ovary, C.S.

QGF098 - Narcissus tazetta ovary, C.S.

QGF099 - Helianthus ovary, S.L.

QGF096 - Lily anther, C.S.

## ► Reproduction and genetics

1 | Aimed at studying the animal and plant reproduction processes; from the apparently simple division of a cell by the mechanism of mitosis to the complex embryonic development of superior animals and plants..

2 | Supplied in a plastic box that can hold 25 slides, to ensure their protection and durability.

## 1\_ 2- Genetics

| Code   | Set      | Nº slides |
|--------|----------|-----------|
| QGR006 | Genetics | 5         |

1 | Includes slides of human and politenic chromosomes, animal and vegetal mitosis and meiosis.

QGB077 - Human chromosomes in blood, male and female.

QGB001 - Mitosis horse Ascaris eggs, C.S.

QGB003 - Giant chromosomes of salivary gland, W.M.

QGF113 - Meiosis, lily anther, C.S.

QGF046 - Mitosis onion root tip, S.L.

▶ QGR - Colecciones



▶ Reproduction and genetics

2\_ Animal and plant rep.

| Code   | Set                   | Nº slides |
|--------|-----------------------|-----------|
| QGR005 | Animal and plant rep. | 24        |

1 | Includes preparations of the gametogenesis process And early stages of the embryonic development of amphibians, Sexual reproduction of gymnosperms and angiosperms. Composed by :

|                                        |                                               |
|----------------------------------------|-----------------------------------------------|
| QGB051 - Human sperm smear             | QGF095 - Lily pollen, M.E.                    |
| QGB067 - Frog sperm smear              | QGF108 - Luffa cylindrical pollen, M.E.       |
| QGB068 - Frog testicle, SEC.           | QGF133 - Germinated pollen, M.E.              |
| QGB069 - Frog ovary, SEC.              | QGF114 - Lilium embryo sac development        |
| QGB006 - Frog egg, SEC.                | QGF100 - Capsella young embryo, SEC.          |
| QGB007 - Two cell stage frog egg, SEC. | QGF101 - Capsella middle embryo, SEC.         |
| QGB008 - Cleavage stage frog egg, SEC. | QGF102 - Capsella mature embryo, SEC.         |
| QGB009 - Frog blastula, SEC.           | QGF103 - Triticum aestivum (wheat) seed, S.L. |
| QGB010 - Frog gastrula, SEC.           | QGF104 - Corn seed, S.L.                      |
| QGF032 - Pine pollen, M.E.             | QGF126 - Persimmon pulp cells                 |
| QGF030 - Male pine cone, S.L.          | QGF107 - Capsicum pericarp, SEC.              |
| QGF031 - Female pine cone, S.L.        |                                               |

▶ Zoology

1 | Aimed at the study of the different evolutionary groups that form the animal kingdom, with special emphasis in the animal group with the highest diversification and specialization: insects.

2 | Supplied in a plastic box to ensure protection and durability of the slides.

1\_ Insects anatomy

| Code   | Set             | Nº slides |
|--------|-----------------|-----------|
| QGR007 | Insects anatomy | 24        |

1 | Insects anatomy. Composed of:

|                                            |                                                    |
|--------------------------------------------|----------------------------------------------------|
| QGJ041 - Insect digging leg                | QGJ023 - Grasshopper mouth parts, m.e.             |
| QGJ042 - Insect walking leg, m.e.          | QGJ024 - Periplaneta (cockroach) mouth parts, m.e. |
| QGJ043 - Insect swimming leg, m.e.         | QGJ059 - House fly antenna, m.e.                   |
| QGJ044 - Insect leaping leg, m.e.          | QGJ060 - Ant antenna, m.e.                         |
| QGJ045 - Insect pollinating leg, m.e.      | QGJ061 - Mosquito antenna, m.e.                    |
| QGJ057 - House fly leg, m.e.               | QGJ062 - Beetle antenna, m.e.                      |
| QGJ058 - Honey front and hind legs, m.e.   | QGJ063 - Honeybee antenna, m.e.                    |
| QGJ018 - Male mosquito mouth parts, m.e.   | QGJ054 - House fly wing, m.e.                      |
| QGJ019 - Female mosquito mouth parts, m.e. | QGJ055 - Butterfly wing, m.e.                      |
| QGJ020 - House fly mouth parts, m.e.       | QGJ056 - Honeybee wing, m.e.                       |
| QGJ021 - Honeybee mouth parts, m.e.        | QGJ051 - Insect compound eye, m.e.                 |
| QGJ022 - Butterfly mouth parts, m.e.       | QGJ025 - Insect compound eye, SEC.                 |

2\_ Microorganisms

| Code   | Set            | Nº slides |
|--------|----------------|-----------|
| QGR008 | Microorganisms | 13        |

1 | . It includes slides with examples of prokaryotes, fungi and animals and unicellular algae. Composed of:

|                                         |                                               |
|-----------------------------------------|-----------------------------------------------|
| QGJ001 Paramecium, M.E.                 | QGF008 Yeast, M.E.                            |
| QGJ002 Unicellular animal, M.E.         | QGF010 <i>Chlamydomonas</i> , M.E.            |
| QGJ046 Three types of bacteria smear.   | QGF130 <i>Euglena</i> , M.E.                  |
| QGF125 Blue-green alga, M.E.            | QGF011 <i>Volvox</i> , M.E.                   |
| QGF005 <i>Rhizopus nigricans</i> , M.E. | QGF012 <i>Spirogyra</i> conjugation, M.E.     |
| QGF006 <i>Penicillium</i> , M.E.        | QGF116 <i>Spirogyra</i> vegetative mass, M.E. |
| QGF007 <i>Aspergillus</i> , M.E.        |                                               |



## Zoology

## 3\_ Life cycles

| Code   | Set          | Nº slides |
|--------|--------------|-----------|
| QGR009 | Life cycless | 14        |

1 | Includes slides of the different phases of liverwort, moss and fern life cycles:

|                                     |                                                 |
|-------------------------------------|-------------------------------------------------|
| QGF014 Marchantia thallus, C.S.     | QGF022 Moss archegonium, S.L.                   |
| QGF015 Marchantia sorus, SEC.       | QGF024 Fern prothallus w/young sporophyte, W.M. |
| QGF016 Marchantia antheridium, S.L. | QGF117 Fern sorus, SEC.                         |
| QGF017 Marchantia archegonium, S.L. | QGF128 Fern sporangium, M.E.                    |
| QGF019 Moss, M.E.                   | QGF025 Fern prothallus w/antheridium, C.S.      |
| QGF020 Moss protonema, M.E.         | QGF026 Fern prothallus w/archegonium, C.S.      |
| QGF021 Moss antheridium, S.L.       | QGF118 Fern subterraneous stem, C.S.            |

## 4\_ Zoology

| Code   | Set     | Nº slides |
|--------|---------|-----------|
| QGR010 | Zoology | 40        |

1 | Includes slides of representative examples of animal kingdom phylums: protozoa, cnidaria, plathelminths, molluscs, annelids, arthropods and cephalochordata.

|                                                        |                                                |
|--------------------------------------------------------|------------------------------------------------|
| QGG001 - Paramecium, W.M.                              | QGG013 - Ascaris male, C.S.                    |
| QGG002 - Unicellular animal, W.M.                      | QGG014 - Ascaris female, C.S.                  |
| QGG003 - Hydra W.M.                                    | QGG015 - Ascaris male and female, C.S.         |
| QGG004 - Hydra spermary, C.S.                          | QGB001 - Mitosis horse Ascaris eggs, SEC.      |
| QGG005 - Hydra ovary, C.S.                             | QGG052 - Mussel gills, W.M.                    |
| QGG009 - Hydra, L.S.                                   | QGG006 - Daphnia, W.M.                         |
| QGG047 - Hydra, C.S.                                   | QGG007 - Siphonaptera, W.M.                    |
| QGG010 - Turbellaria, W.M.                             | QGG008 - Aphis, W.M.                           |
| QGG011 - Turbellaria, C.S.                             | QGG050 - Tetranychus telarius, W.M.            |
| QGG012 - Bladder worm, W.M.                            | QGG034 - Spider, m.e.                          |
| QGG028 - Schistosoma miracidium, W.M.                  | QGG035 - Mosquito larva, W.M.                  |
| QGG029 - Schistosoma male, W.M.                        | QGG036 - House fly, W.M.                       |
| QGG030 - Schistosoma female, W.M.                      | QGG037 - Female mosquito, W.M.                 |
| QGG031 - Schistosoma male anf female conjugation, W.M. | QGG038 - Male mosquito, W.M.                   |
| QGG048 - Turbellaria, digestive tube, W.M.             | QGG039 - Fruit fly, W.M.                       |
| QGG049 - Clonorchis sinensis, W.M.                     | QGG040 - Ant, W.M.                             |
| QGG064 - Schistosoma eggs, W.M.                        | QGG026 - Branchiostoma belcheri, W.M.          |
| QGG065 - Schistosoma cercaria, W.M.                    | QGG027 - Branchiostoma belcheri, pharynx, C.S. |
| QGG016 - Hirudo niponia, W.M.                          | QGG032 - Bird feather, W.M.                    |
| QGG017 - Earthworm, C.S.                               | QGG053 - Fish scale, W.M.                      |

## QLB - Mechanics and fluids



### Inclined plane

- 1| The whole structure is made of metal providing a good durability and robustness.
- 2| It is made of 2 metal plates hinged at one end; one of the plates is used as base and the other one as inclined plane.
- 3| The plate acting as inclined plane presents a graduated scale 20-40 cm (divisions of 1 cm) in one side to measure the lineal distance along its length and can be inclined and fixed at any angle from 0 to 40°.
- 4| The instrument is completed with a plastic trolley with hook, a set of weights (including 1x100 g, 1x50 g y 1x20 g) and a pan with a lightweight cord.

| Code   | Description    |
|--------|----------------|
| QLB001 | Inclined plane |



### Force table

- 1| Made of a thick aluminium circular table, of about 40 cm diameter and covered by scratch resistant black epoxy coating.
- 2| The external rim presents a circular scale graduated from 0° to 360° (divisions every 1° and marked every 10°).
- 3| The table is mounted on a heavy, stable cast metal tripod base.
- 4| Provided with 4 pulleys with clamps that can be attached anywhere along the rim.
- 5| The instrument is supplied complete with a set of cords tied to the centring ring, a detachable pin and 4 sets of slotted masses with hanger. Each set of masses is composed of 1x100 g, 1x10 g, 1x20 g, 1x50 g and one hanger of 100 g.

| Code   | Description |
|--------|-------------|
| QLB002 | Force table |



### Free fall apparatus with digital timer

- 1| The instrument consists of an electromagnet mounted on a plastic case to allow releasing a metallic ball fitted on a square sectional rod.
- 2| The instrument includes a precise digital timer with the possibility of programming the time in micro seconds, milliseconds or seconds.
- 3| The time is shown on a 7-segment LED display.
- 4| It also includes all the necessary connection cables.

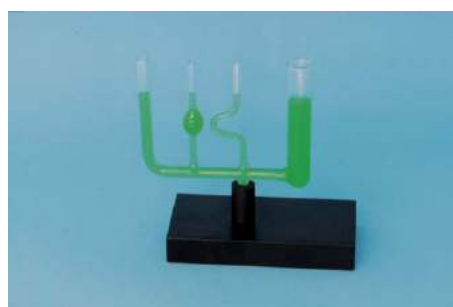
| Code   | Description                            |
|--------|----------------------------------------|
| QLB003 | Free fall apparatus with digital timer |



### Communicating vessels

- 1| It is composed of 4 glass tubes each one of them with different section diameter and shape, connected together at the bottom through a common horizontal glass tube, sealed to a manifold and mounted on a stand.

| Code   | Description           |
|--------|-----------------------|
| QLB004 | Communicating vessels |



### Pressure syringes

- 1| Comprises a pair of graduated glass syringes of capacities 50 and 10 cm<sup>3</sup> respectively; both having ground pistons with limit stop to prevent their complete ejection from the barrels and providing a cross-sectional area ratio of 3:1 respectively.
- 2| The syringes are mounted on a stable, non-skid metal base with a platform at their top to place the weights; the nozzles of both syringes are connected by a 3-position valve.
- 3| The graduated syringes also permit simple Boyle's Law experiments to be performed.
- 4| Set of weights included: 1x200 g, 1x100 g, 1x50 g, 2x20 g and 1x10 g

| Code   | Description       |
|--------|-------------------|
| QLB005 | Pressure syringes |







## QLB - Mechanics and fluids



## Bell jar with hand vacuum pump



- 1 | This instrument is composed of a transparent bell jar and a hand-operated vacuum pump.
- 2 | The bell jar is provided with a robust chamber with a vacuum release valve and a vacuum gauge.
- 3 | **Note:** the exposure or contact of the apparatus to organic solvents or vapours or other aggressive chemicals must be totally avoided. The instrument is non-autoclavable.

| Code   | Description                    |
|--------|--------------------------------|
| QLB006 | Bell jar with hand vacuum pump |

## U-tube manometer



- 1 | Glass manometer U-shaped tube with stopcock near the end of one of the arms and mounted on a stand.
- 2 | The scale presents a graduation 50-0-50 cm with divisions of 1 mm.

| Code   | Description      |
|--------|------------------|
| QLB007 | U-tube manometer |

## Magdeburg hemispheres



- 1 | The instrument consists of two plastic hemispheres of about 100 mm diameter, both with a handle at their top.
- 2 | One of them presents a plastic stopcock for pumping out air and releasing vacuum and a rubber O-ring seal inside.

| Code   | Description           |
|--------|-----------------------|
| QLB008 | Magdeburg hemispheres |



## QLD - Waves and sound



## Wave form helix



- 1 | Steel wire helixes specially designed for demonstration of wave motion.
- 2 | The Snakey helix presents looped ends for safety.

| Code   | Description | Ø     | Longitud |
|--------|-------------|-------|----------|
| QLD001 | Snakey      | 19 mm | 3 m      |
| QLD002 | Slinky      | 75 mm | 10 cm    |

## QLD - Waves and sound

### Vibrator generator with accessories

- 1| Specially indicated to produce mechanical oscillations.
- 2| The voltage input is via a pair of 4 mm banana sockets and mechanical oscillation output is obtained through a shaft at the top.
- 3| A locking device confers safety by blocking the movement of the shaft.
- 4| The equipment is supplied complete with Chladni plates and steel strips.

| Code   | Description                         |
|--------|-------------------------------------|
| QLD003 | Vibrator generator with accessories |



### Melde's apparatus

- 1| To show the effects of the vibrations in a stretched cord and investigate the relationship between frequency, tension and density.
- Composed of a thin steel rod mounted on a clamp formed by a pair of 4 mm terminal sockets, so that its free length can be adjusted as desired.

| Code   | Description       |
|--------|-------------------|
| QLD004 | Melde's apparatus |



### Pendulum

- 1| The instrument consists of a meter rule with 0 at the bottom, graduated in millimetres and with readings every centimetre that is attached vertically on a support rod.
- 2| At the upper end of the support rod a hanger is fixed, from which 3 pendulum bobs, each of 25 mm diameter and of different material (wood, steel and aluminium) are suspended. The suspension length of each pendulum can be controlled.

| Code   | Description |
|--------|-------------|
| QLD005 | Pendulum    |



### Pair of tuning forks with box

- 1| It comprises two matched nickel plated tuning forks of frequency A (426.6), each one of them mounted on top of hollow wooden box open at one end.
- 2| Both forks present a sliding mass on one prong by means of which its frequency can be varied from the nominal 426.6 Hz.
- 3| The instrument also includes a disk-shaped rubber mounted hammer.

| Code   | Description                   |
|--------|-------------------------------|
| QLD006 | Pair of tuning forks with box |

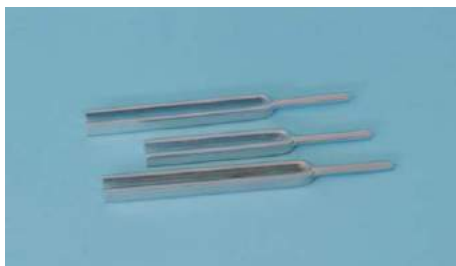




## QLD - Waves and sound



## Set of 8 tuning forks, steel



- 1| With the best quality, plain shanks and with frequency clearly marked.
- 2| Each set is composed of 8 forks, one each of diatonic scale frequencies: C1-(256), D-(288), E-(320), F-(341.3), G-(384), A-(426.6), B-(480) y C2-(512).
- 3| The complete set is supplied in a box.

| Code   | Description                  |
|--------|------------------------------|
| QLD007 | Set of 8 tuning forks, steel |



## QLG - Light and optics



## Newton colour disks



- 1| They consist of a multi-coloured circular disk having sectors of various spectral colours in proper proportions.
- 2| By rotating the disk at sufficient speed, all the colours will be observed to disappear by merging into a single white colour.

| Code     | Diameter | Type                             |
|----------|----------|----------------------------------|
| QLQLG001 | 200 mm   | Manual (Handle at the back)      |
| QLG002   | 80 mm    | Motorized (Low DC voltage motor) |

## Light box and optical set



- 1| A complete kit providing comprehensive range of optical experiments involving reflection, refraction and colour mixing.
- 2| The complete set includes: set of 5 acrylic prisms, set of 3 acrylic lenses, set of 3 mirrors, set of 2 plates, set of 8 colour filters, set of 8 colour plates.

| Code   | Description               |
|--------|---------------------------|
| QLG003 | Light box and optical set |

## Optical bench



- 1| An optical bench made of cross sectional aluminium pipe with closed ends, fitted on two moulded supports with levelling screws.
- 2| The optical bench is supplied complete with the following accessories: halogen lamp, plane glass, lens holder, black circular screen with aperture, diaphragm, ground glass screen, grating holder, plate with cross slits, Jolly's photometer, support with needles, receiver screen

| Code   | Description                             |
|--------|-----------------------------------------|
| QLG004 | Optical bench complete with accessories |

## ▶ QLG - Light and optics

### ▶ Complete Hartl disk

- 1| It is composed of a rotatable white metal disk, of around 30 cm diameter.
- 2| The disk presents a graduation of  $90^{\circ}$ - $0^{\circ}$ - $90^{\circ}$ - $0^{\circ}$ - $90^{\circ}$  (divisions of  $1^{\circ}$ ) that divides the disk in 4 equal quadrants with its centre clearly marked.
- 3| The apparatus is supplied with a laser type light source that allows the projection of 1, 3 or 5 parallel beams for performing different experiments. A complete set of optical elements is also included: Acrylic prisms and mirrors (reflection): plane and semi-circular

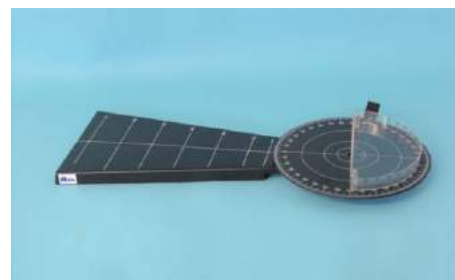
| Code   | Description             |
|--------|-------------------------|
| QLG005 | Disco de Hartl completo |



### ▶ Refraction disk

- 1| A metallic circular disk graduated ( $0^{\circ}$ - $90^{\circ}$ ) in 4 quadrants and subdivided into  $1^{\circ}$ .
- 2| All this assembly is fitted on a metallic base which is graduated from 1-7 to place the light box at any desired level.

| Code   | Description     |
|--------|-----------------|
| QLG006 | Refraction disk |



### ▶ Laser ray box, red

- 1| Laser ray box of red colour (wavelength 650 nm) with the option of 1, 3 or 5 parallel beams. It is supplied complete with power adapter.

| Code   | Description        |
|--------|--------------------|
| QLG007 | Laser ray box, red |



### ▶ Hand spectroscope

- 1| It presents the main components as collimator, prism and telescope mounted inside an straight tube; one of the ends of the tube presents an adjustable slit to regulate the light entering inside and the other end is provided with an eyepiece.
- 2| Supplied complete in a wooden box.

| Code   | Description       |
|--------|-------------------|
| QLG008 | Hand spectroscope |



### ▶ Power supply for spectral tubes

- 1| It presents a sturdy and durable case made of metal and allows placing the tubes vertically.
- 2| With On/Off switch and shielded sockets for safety during use.

| Code   | Power supply        |
|--------|---------------------|
| QLG009 | 220-240 V AC, 50 Hz |

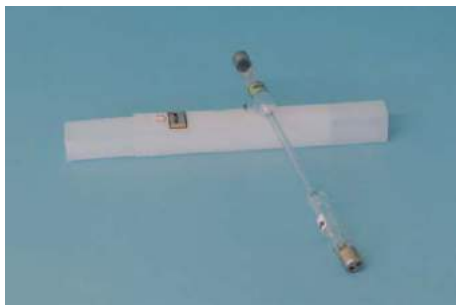




## QLG - Light and optics



## ▶ Spectral tubes



- 1 | With straight shape and about 20 cm long, each tube is filled with a type of gas or vapour.
- 2 | The metal cap electrodes at both ends serve as connection to the high voltage power supply.

| Code   | Type of gas | Length |
|--------|-------------|--------|
| QLG010 | Argon       | 200 mm |
| QLG011 | Helium      | 200 mm |
| QLG012 | Neon        | 200 mm |
| QLG013 | Hydrogen    | 200 mm |
| QLG014 | Nitrogen    | 200 mm |
| QLG015 | Mercury     | 200 mm |



## QLJ - Thermology



## ▶ Gravesande's ring and ball



- 1 | It is composed of a brass ring and ball each one of them mounted on separate insulated handles.
- 2 | When cold, the ball of 19 mm diameter.

| Code   | Description                |
|--------|----------------------------|
| QLJ001 | Gravesande's ring and ball |

## ▶ Joule's calorimeter



- 1 | It is composed of an inner vessel of about 300 mL of capacity contained inside and outer vessel of about 900 mL both of them made of aluminium and separated by an isolating material that minimizes heat loss.
- 2 | The lid is also provided with stirrer and a hole to put a thermometer (thermometer is not included).

| Code   | Description         |
|--------|---------------------|
| QLJ003 | Joule's calorimeter |

## ▶ Thermal conductivity apparatus star shaped



- 1 | For demonstration of differences in the thermal conductivity of five different metals: brass, copper, aluminium, mild steel and stainless steel.
- 2 | The 5 metal rods spread radially outwards and are equally spaced on each side of hexagonal brass hub.
- 3 | The instrument is completed with an isolating handle.

| Code   | Description                                |
|--------|--------------------------------------------|
| QLJ002 | Thermal conductivity apparatus star shaped |

## QLJ - Thermology

### ► Calorimeter block

1 | Each block is cylindrical shaped, has a mass of  $1 \text{ Kg} \pm 2\%$  and presents 2 holes, a large central hole (about 12.5 mm diameter) to accept special immersion heater and a smaller hole (about 7.5 mm diameter) to accept a thermometer or temperature sensor.

| Code   | Material  |
|--------|-----------|
| QLJ004 | Aluminium |
| QLJ005 | Steel     |
| QLJ006 | Copper    |
| QLJ007 | Brass     |



### ► Heating resistance for calorimeter blocks

1 | It is a especial heater designed for use with metal block calorimeters.  
 2 | The heating element is enclosed in a stainless steel tube with two flying leads coming out of the sealed tube body for electrical connections

| Code   | Description                               |
|--------|-------------------------------------------|
| QLJ008 | Heating resistance for calorimeter blocks |



### ► Boyle's law apparatus

1 | This device allows studying the relationship pressure/volume of a gas at constant temperature.  
 2 | It consists of a graduated cylinder of (0-300)  $\text{cm}^3$ , made of transparent material and mounted on a support. One of the ends of the cylinder is closed by a piston and the other end presents a valve to adjust the mass of air contained inside the cylinder..  
 3 | The reading of the pressure inside the cylinder is made by a pressure gauge placed near the valve and graduated from (0-3.4)  $\times 10^5 \text{ Pa}$ .

| Code   | Description           |
|--------|-----------------------|
| QLJ009 | Boyle's law apparatus |



### ► Gas kinetics theory model

1 | It is composed of a clear cylindrical tube closed at the top through a loose-fitting lid and with a rubber diaphragm at the base. The instrument also includes a set of small metal spheres and a cardboard disk for loading at the top.

| Code   | Description               |
|--------|---------------------------|
| QLJ010 | Gas kinetics theory model |







## QLL - Magnetism and electrostatics



### ► Magnets



| Code   | Shape       | Dimensions  | Material      |
|--------|-------------|-------------|---------------|
| QLL001 | Rectangular | 75x15x10 mm | Alnico        |
| QLL002 | Cylindrical | 100x12 mm   | Alnico        |
| QLL003 | Ring        | 36x18x8 mm  | Ceramics      |
| QLL004 | Horseshoe   | 75x12x5 mm  | Chromed steel |

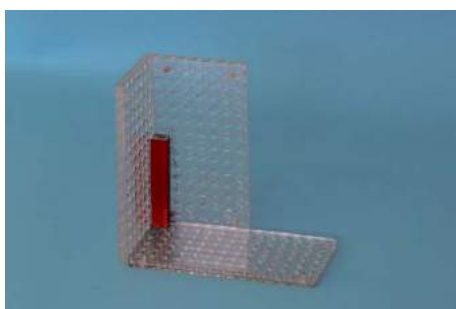
### ► Iron filling, fine



1 | For the study of magnetic fields. Supplied in box of 500 g.

| Code   | Description        |
|--------|--------------------|
| QLL005 | Iron filling, fine |

### ► Magnetic field demonstrator, 3D



- 1 | Set of 4 transparent plate with size 155x76x6 mm that present a matrix of small circular chambers (14x7 mm) each one containing an iron rod and that act as small compasses.
- 2 | The transparent nature of the plates makes them suitable to be used with a projector
- 3 | The set also includes a rectangular magnet.

| Code   | Description                     |
|--------|---------------------------------|
| QLL006 | Magnetic field demonstrator, 3D |

### ► Magnetic field chamber



- 1 | Composed of an empty chamber made of transparent acrylic material with a hole in its central part to enclose the cylindrical magnet.
- 2 | It also allows studying magnets of other shapes by simply placing adjacent poles at any side of the chamber.

| Code   | Description            |
|--------|------------------------|
| QLL007 | Magnetic field chamber |

### ► Stand with magnetic needle



- 1 | Stable circular base of bakelite with non-magnetic pillar and carbon steel pivoting point for the needle. Total height of about 110 mm.

| Code   | Description                |
|--------|----------------------------|
| QLL011 | Stand with magnetic needle |

## ▶ QLL - Magnetism and electrostatics

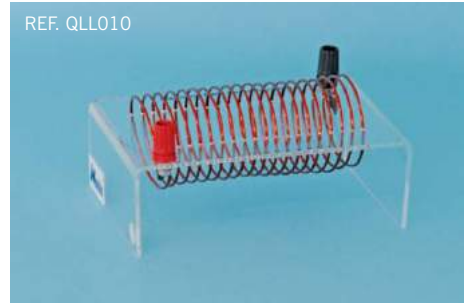
### ▶ Magnetic field demonstrators

1| . For the study and demonstration of magnetic fields associated to different shapes of an electric current conductive wire. 3 models available:

1. Straight: U-shaped copper wire vertically mounted on the base. Maximum current of 8 A.
2. Circular coil: 1-coil copper wire. Maximum current of 8 A.
3. Solenoid: copper solenoid of about 52x125 mm (diam. x length).

| Code   | Shape    |
|--------|----------|
| QLL008 | Straight |
| QLL009 | Coil     |
| QLL010 | Solenoid |

REF. QLL010



### ▶ Compass inclinometer

- 1| To demonstrate the earth magnetic field and illustrate the general rule.
- 2| It consists of an aluminium ring with a double pointed needle pivoting in the centre; the ring is graduated from 0-360° in both clockwise and anticlockwise directions.
- 3| The whole assembly is fitted on an aluminium pillar and mounted on a plastic base of approx. 142x80x40 mm .

| Code   | Description          |
|--------|----------------------|
| QLL012 | Compass inclinometer |



### ▶ Laplace's rail

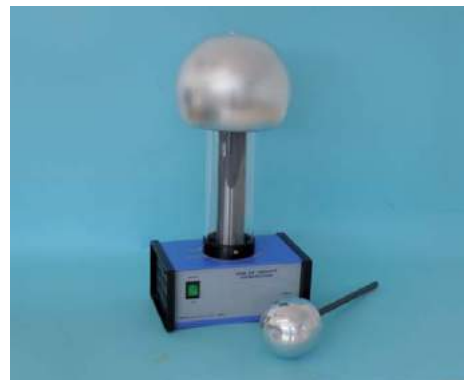
- 1| It consists of an acrylic base from which 2 parallel brass bars of about 120 mm length come out .
- 2| To demonstrate the action of a magnetic field on a free moving conductive element placed on two conductive elements.

| Code   | Description    |
|--------|----------------|
| QLL013 | Laplace's rail |

### ▶ Van de Graaf generator

- 1| The aluminium base presents isolated sides made of plastic for a higher safety.
- 2| The motor operates on AC power supply 220-240 V, 50/60 Hz and is activated through an On/Off switch.
- 3| The equipment presents a socket for 4 mm banana plug at the base for earth connection and another socket at the top for charge transfer or for attaching accessories.
- 4| It is supplied complete with accessories and a discharge sphere with isolating handle.

| Code   | Description             |
|--------|-------------------------|
| QLL014 | Van de Graaff generator |





## QLL - Magnetism and electrostatics



### ► Wimshurst electrostatic generator



**1** | It is equipped with 2 acrylic parallel plates that rotate in opposite directions through a system of pulleys and belts. The device has also 2 crossed rods with collecting "combs" at their end and 2 discharge spheres. The charge can be accumulated in a couple of high capacity Leyden jars.

**2** | When the machine starts rotating, the spheres start accumulating charge until the charge transfer between both spheres takes place in the form of an electric spark. The spark is produced intermittently by the continuous rotation of plates.

**3** | The complete machine is mounted on a well-isolated base that has also a couple of sockets for earth connection of the Leyden jars.

| Code   | Description                       |
|--------|-----------------------------------|
| QLL015 | Wimshurst electrostatic generator |



## QLN - Electricity and electronics



### ► Power supply 1-12 V AC/DC



**1** | The equipment is provided with overloading and short circuit protection.

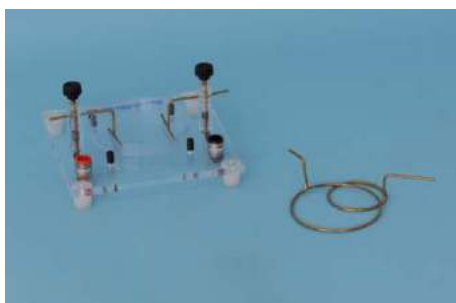
|                      |                     |
|----------------------|---------------------|
| Code                 | QLN001              |
| Power supply         | 220-240 V AC, 50 Hz |
| Output voltage       | AC/DC 1-12 V        |
| Intensity            | 6 A máx.            |
| Primary protection   | Fuse 2 A            |
| Secondary protection | Thermal switch      |

### ► Regulated power supply 1-15 V DC



|                            |                                          |
|----------------------------|------------------------------------------|
| Code                       | QLN002                                   |
| Power supply               | 110-220 V $\pm$ 10% AC, 50/60 Hz         |
| Output voltage             | 0-15 V DC, continuous variable range     |
| Intensity                  | 0-2 A max., continuous variable range    |
| Displays                   | 2 LED displays for voltage and intensity |
| Environmental cond. of use | 0-40°C, 95% HR                           |

### ► Electric field apparatus



**1** | Rectangular transparent base provided with 2 sockets for 4 mm banana plugs.

**2** | It is supplied complete with a transparent circular plastic plate, 2 lineal electrodes and 2 circular electrodes (35 and 70 mm respectively).

| Code   | Description              |
|--------|--------------------------|
| QLN003 | Electric field apparatus |

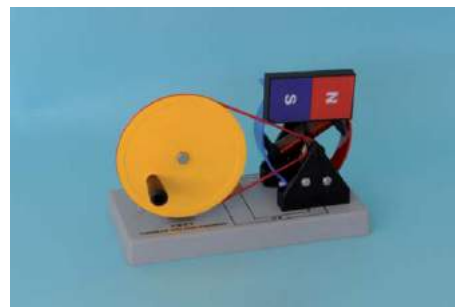


## QLN - Electricity and electronics

### ► Demonstration dynamo AC/DC

- 1| The whole instrument is mounted on a base and is capable of generating AC and Dc current simultaneously as it is shown by the illumination of a couple of light bulbs placed at the base.
- 2| The equipment consists of an isolated copper wire coil mounted on a support that is placed between two curved metal strips.
- 3| The instrument is completed with a hand operated pulley connect to the coil support through a rubber belt.

| Code   | Description                |
|--------|----------------------------|
| QLN004 | Demonstration dynamo AC/DC |



### ► Power cord bananas

- 1| Power cords with 4 mm banana type connectors, available in red and black colour and length of 1 m.

| Code   | Colour | Length |
|--------|--------|--------|
| QLN005 | Black  | 1 m    |
| QLN006 | Red    | 1 m    |



LABORATORY  
SUPPLIERS

SERVICES

TRADEMARKS

STOCK

COMPETITIVITY

AUXILAB  
+ ROGO  
SAMPAIC



**ENDO**  
glassware

Own brand of the group Auxilab/ Rogo Sampaic.  
Please know the wide range of laboratory glass  
products we offer at your disposal. Glass of quality at a  
competitive price to satisfy all your needs

|                                          |                                                                                     |
|------------------------------------------|-------------------------------------------------------------------------------------|
| Z - others                               |    |
| Q - didactic material                    |    |
| P - filtration and separation            |    |
| M - liquid handling                      |    |
| L - stirring                             |    |
| K - measuring instruments                |    |
| J - heating - cooling                    |    |
| H - optical equipments                   |    |
| G - centrifuges                          |   |
| F - laboratory assemblies and tools      |  |
| D - volumetry                            |  |
| C - beakers, flasks and other containers |  |
| B - general use                          |  |

[R]

## INDEX OF CONTENTS PROTECTION AND SAFETY

|                                         |            |
|-----------------------------------------|------------|
| <b>[RB] Protection clothes .....</b>    | <b>292</b> |
| RBB - Coats.....                        | 292        |
| RBD - Caps .....                        | 292        |
| RBG - Glasses.....                      | 293        |
| RBJ - Masks .....                       | 296        |
| RBL - Gloves.....                       | 296        |
| RBN - Shoe covers .....                 | 297        |
| <b>[RD] Showers and eyewashes .....</b> | <b>297</b> |
| RDB - Stations .....                    | 297        |
| <b>[RZ] Others.....</b>                 | <b>298</b> |
| RZB - Table protectors .....            | 298        |

TRADEMARKS:







## RBB - Coats



► Lab coats, 100% cotton



- 1| Optical white color, snap type buttons (pressure closing), 3 pockets and with collar flap
- 2| Weight 240g/m<sup>2</sup>

| Code   | For  | Size |
|--------|------|------|
| RBB001 | Man  | S    |
| RBB002 | Man  | M    |
| RBB003 | Man  | L    |
| RBB004 | Man  | XL   |
| RBB009 | Lady | S    |
| RBB010 | Lady | M    |
| RBB011 | Lady | L    |
| RBB012 | Lady | XL   |

► Lab coats, mixture



- 1| 65% polyester-35% cotton
- 2| Optical white colour, snap type buttons (pressure closing), 3 pockets and collar flap
- 3| Weight 240g/m<sup>2</sup>

| Code   | For  | Size |
|--------|------|------|
| RBB005 | Man  | S    |
| RBB006 | Man  | M    |
| RBB007 | Man  | L    |
| RBB008 | Man  | XL   |
| RBB013 | Lady | S    |
| RBB014 | Lady | M    |
| RBB015 | Lady | L    |
| RBB016 | Lady | XL   |

► Lab coats, disposable



- 1| Unisex, synthetic material (non-woven material)
- 2| Snap type buttons (pressure closing), elastic cuff and collar flap

| Code   | Colour | Size            |
|--------|--------|-----------------|
| RBB017 | White  | L (165-175 cm)  |
| RBB018 | Green  | L (165-175 cm)  |
| RBB019 | White  | XL (176-190 cm) |
| RBB020 | Green  | XL (176-190 cm) |



## RBD - Caps



- 1| Only size, with elastic band. Disposable synthetic material (non-woven material)
- 2| Circular shape, 30 cm diameter
- 3| Supplied in boxes of 100 units

| Code   | Colour |
|--------|--------|
| RBD001 | White  |
| RBD002 | Green  |

 RBG - Glasses
**Antifog****Antifog Plus coating**

Fine coat over all the surface of the lens of few  $\mu\text{m}$  thick that prevents the formation of condensation water by absorbing the moisture drops. It avoids fog preventing to conduct the job safely.

The Antifogging Plus treatment is permanent

**Antiscratch****Antiscratch Plus**

Treatment applied on the surface of the lens constituting a barrier against surface damages. Lens are protected from scratches and abrasions caused by the rubbing of solid particles.

The Antiscratch Plus treatment is permanent.

**Use areas of application****3**

Liquids (drops)

**4**Dust with particle thickness  $> 5 \mu\text{m}$ **5**Gas, vapour, spray, smoke and dust with particle thickness  $< 5 \mu\text{m}$ **9**

Melted metal splashes and penetration of red-hot solids

 Safety goggles, series 601

- 1| Panoramic goggle with wide vision field. RX insertion for corrections
- 2| II class IPE (polycarbonate lens). Adjustable elastic headband and soft frame.



|           |                |
|-----------|----------------|
| Code      | RBG001         |
| Frame     | Clear-unvented |
| Use areas | 3, 4, 5, 9     |
| Lens      | Clear PC       |


 Safety goggles, series 602

- 1| Polycarbonate lens. Indirect ventilation system
- 2| Can be worn over prescription glasses. Adjustable elastic headband and soft frame

|           |                              |
|-----------|------------------------------|
| Code      | RBG002                       |
| Frame     | Clear                        |
| Use areas | 3, 4                         |
| Lens      | Clear UC (without treatment) |


 Safety eyewear model 503, can be sterilized

- 1| Adjustable length of temples. Version without treatment (UC) that can be sterilized
2. Built-in lateral protections

 = 29 g

|       |          |
|-------|----------|
| Code  | RBG003   |
| Frame | Clear    |
| Lens  | Clear UC |


 = 29 g 

|       |            |
|-------|------------|
| Code  | RBG004     |
| Frame | Light blue |
| Lens  | Clear      |





## RBG - Glasses



► Safety eyewear series 505



- 1 | Neck cord included in the packaging
- 2 | Extremely light and wraparound, anti-slip soft rubber nose pad
- 3 | Elastic structure, very flexible and resistant. Increased UV protection (UV400)

**g** = 22 g

|       |        |
|-------|--------|
| Code  | RBG005 |
| Frame | Clear  |
| Lens  | Clear  |



**g** = 22 g

|       |        |
|-------|--------|
| Code  | RBG006 |
| Frame | Clear  |
| Lens  | Clear  |

► Safety eyewear model 511, small faces



- 1 | Temples adjustable in length and inclination
- 2 | Certified small faces version, with H marking according to EN166 standards
- 3 | Frame made of anti-allergic material, built-in lateral protection

**g** = 34 g

|       |        |
|-------|--------|
| Code  | RBG007 |
| Frame | Blue   |
| Lens  | Clear  |

► Safety eyewear series 511



- 1 | Temples adjustable in length and inclination
- 2 | Frame made of anti-allergic material, built-in lateral protection

**g** = 34 g

|       |        |
|-------|--------|
| Code  | RBG008 |
| Frame | Black  |
| Lens  | Clear  |



**g** = 34 g

|       |        |
|-------|--------|
| Code  | RBG009 |
| Frame | Blue   |
| Lens  | Clear  |

► Safety eyewear series 520



- 1 | Ventilation system on lateral protections
- 2 | Can be worn over prescription glasses. Version without UC treatment that can be sterilized

**g** = 43 g

|       |          |
|-------|----------|
| Code  | RBG012   |
| Frame | Clear    |
| Lens  | Clear UC |

## RBG - Glasses



### ► Safety eyewear series 519

- 1 | Ventilation system on the lateral protections
- 2 | Temples adjustable in length and inclination. Can be worn over prescription glasses



|       |              |
|-------|--------------|
| Code  | RBG010       |
| Frame | Black - grey |
| Lens  | Clear        |



|       |              |
|-------|--------------|
| Code  | RBG011       |
| Frame | Black - grey |
| Lens  | Clear        |



### ► Safety eyewear series 546

- 1 | Wraparound lens with excellent lateral covering
- 2 | Temples that ensure an excellent fit and comfort
- 3 | Non-slip rubber nose band

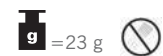


|       |                |
|-------|----------------|
| Code  | RBG014         |
| Frame | Black - orange |
| Lens  | Orange         |



### ► Safety eyewear series 568

- 1 | Economic eyewear ideal for essential protection
- 2 | Light, practical, completely made of polycarbonate.

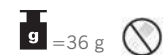


|       |        |
|-------|--------|
| Code  | RBG015 |
| Frame | Clear  |
| Lens  | Clear  |



### ► Safety eyewear series 535

- 1 | Large lens without frontal frame, excellent protection of the face and wide vision field
- 2 | Temples adjustable in inclination and length



|       |                |
|-------|----------------|
| Code  | RBG013         |
| Frame | Black - orange |
| Lens  | Clear          |





## RBG - Glasses



## Safety eyewear series 5x7



- 1| Can be worn over prescription glasses
- 2| The frame design prevents the overlapping of temples to enjoy absolute comfort
- 3| SoftPad technology. Length adjustment of temples



|       |              |
|-------|--------------|
| Code  | RBG016       |
| Frame | White - blue |
| Lens  | Clear        |

## Face shield series 699 with frame



- 1| Interchangeable frontal foam sweat band. Upper band for height adjustment of the shield
- 2| Upper adjustment through an elastic band. 1mm thick 90° folding polycarbonate shield
- 3| Can be used over protection eyewear and breathing masks

|          |        |
|----------|--------|
| Code     | RBG017 |
| Use area | 3      |



## RBJ - Masks



- 1| Only size, 17.50x9.50 cm (wide x high), with elastic bands
- 2| 2 polypropylene layers+filter and built-in nasal pad. Disposable synthetic non-woven material
- 3| Supplied in boxes of 50 units.

| Code   | Colour |
|--------|--------|
| RBJ001 | White  |
| RBJ002 | Green  |



## RBL - Gloves

## Silicone rubber semi-glove



- 1| Of silicone. Raised inner surface to ensure optimal grabbing

| Code   | Temperature max.. | Size |
|--------|-------------------|------|
| RBL002 | 140 °C            | Only |

## RBL - Gloves

### ► Of cotton

- 1| Cotton thickness: 850 g/m<sup>2</sup>. For short length handlings

| Code   | Temperature max.. | Size |
|--------|-------------------|------|
| RBL003 | 100 °C            | Only |



## RBN - Shoe covers



- 1| Only size, 40x17 cm (wide x high)  
2| Supplied in boxes of 100 units.

| Code   | Colour |
|--------|--------|
| RBN001 | White  |
| RBN002 | Green  |



## RDB - Stations

### ► Emergency eyewasher



- 1| Pedestal type and base anchored to ground. Automatic opening and closing valve  
2| With two big flow sprays of water aired at low pressure

| Code   | Material                                            |
|--------|-----------------------------------------------------|
| RDB005 | Stainless steel                                     |
| RDB006 | Anticorrosion plastic tank<br>PVC coated steel pipe |



### ► Emergency shower



- 1| Big diameter shower head, triggered by a rigid handle  
2| With pedestal type eyewasher, with two big flow sprays of water aired at low pressure and manual lateral opening



| Code   | Material            |
|--------|---------------------|
| RDB004 | Stainless steel 304 |







## RZB - Table protectors

## ► Protection paper



- 1 | To protect working surfaces and the user in case of aggressive liquid spills
- 2 | Weight: 140 g/m<sup>2</sup>, thickness: 250 μm.

| Code   | Dimensions | N° sheets |
|--------|------------|-----------|
| RZB013 | 460x570 mm | 50        |



## [Z] INDEX OF CONTENTS OTHERS

|                                              |            |
|----------------------------------------------|------------|
| <b>[ZC] Cleaning and sterilization .....</b> | <b>298</b> |
| ZCC - Ultrasound baths.....                  | 298        |
| ZCF - Brushes .....                          | 299        |
| ZCH - Paper.....                             | 300        |
| ZCZ - Others .....                           | 301        |
| <b>[ZF] Autoclaves, accessories .....</b>    | <b>301</b> |
| ZFD - Molecular biology .....                | 301        |
| ZFP - Histology .....                        | 304        |
| ZFR - Histology, accessories.....            | 307        |
| <b>[ZH] Sample preparation .....</b>         | <b>308</b> |
| ZHB - Paddle blenders .....                  | 308        |
| ZHD - Paddle blenders, accessories .....     | 308        |
| <b>[ZK] Water, food analysis.....</b>        | <b>309</b> |
| ZKN - Productos lácteos .....                | 309        |
| ZKZ - Others .....                           | 310        |
| <b>[ZM] Items for clinical use.....</b>      | <b>310</b> |
| ZMB - Blood analysis.....                    | 311        |
| ZMD - Urine containers.....                  | 311        |

trademarks:





## ZCC - Ultrasound baths

► Digital without heating



- 1 | Made of ABS plastic with an oval shaped tank med of AISI 304 (EN 1.4301) stainless steel.
- 2 | High frequency generators with overload protection.
- 3 | Supplied with plastic lid (for phonic isolation) and basket (for protection of the instruments to be cleaned and the tank).
- 4 | Timer from 1-7 min
- 5 | IP20 protection grade

|                                    |                     |
|------------------------------------|---------------------|
| Code                               | ZCC012              |
| Tank volume                        | 0.6 L               |
| Ultrasound power                   | 50 W                |
| Generator                          | 1 x 50 W            |
| Drain tap                          | No                  |
| External dim. (LxAxH) (mm)         | 193x120x123         |
| Inner tank dimensions (LxAxH) (mm) | 160x90x50           |
| Basket dimensions (LxAxH) (mm)     | 140x70x40           |
| Power                              | 220-240 V; 50-60 Hz |

► Digital with heating



- 1 | Tank and case made of AISI 304 (EN 1.4301) stainless steel.
- 2 | Supplied with lid (for phonic isolation) and basket (for protection of the instruments to be cleaned and the tank).
- 3 | Timer from 1-60 min and also continuous operation
- 4 | With degas and sweep functions. With drain tap for emptying the tank

|                              |                     |             |             |
|------------------------------|---------------------|-------------|-------------|
| Code                         | ZCC005              | ZCC006      | ZCC007      |
| Tank volume                  | 3 L                 | 6 L         | 13 L        |
| Ultrasound power             | 160 W               | 240 W       | 400 W       |
| Generators                   | 2x80 W              | 3x80 W      | 5x80 W      |
| Potencia calefacción         | 120 W               | 120 W       | 200 W       |
| Rango temperatura            | RT + 5°C – 80°C     |             |             |
| Drain tap                    | Yes                 | Yes         | Yes         |
| Dim. ext. (LxAxH) (mm)       | 265x165x225         | 330x175x290 | 330x270x355 |
| Inner tank dim. (LxAxH) (mm) | 238x138x100         | 302x152x150 | 302x239x200 |
| Basket dimensions* (mm)      | 220x120x60          | 285x140x135 | 280x225x180 |
| Power                        | 220-240 V; 50-60 Hz |             |             |

\* (LxAxH)

► Analógicos con calefacción



- 1 | Tank and case made of AISI 304 (EN 1.4301) stainless steel.
- 2 | Supplied with lid (for phonic isolation) and basket (for protection of the instruments to be cleaned and the tank)
- 3 | Timer from 1-60 min and also continuous operation
- 4 | With drain tap for emptying the tank (except ref. ZCC008)

|                    |                     |             |             |             |
|--------------------|---------------------|-------------|-------------|-------------|
| Code               | ZCC008              | ZCC009      | ZCC010      | ZCC011      |
| Tank volume        | 0.8 L               | 3 L         | 6 L         | 12 L        |
| Potencia ultrason. | 60 W                | 120 W       | 180 W       | 300 W       |
| Generators         | 1x60 W              | 2x60 W      | 3x60 W      | 5x60 W      |
| Heating power      | 140 W               | 120 W       | 120 W       | 200 W       |
| Temp. range.       | RT + 5°C – 80°C     |             |             |             |
| Drain tap          | No                  | Yes         | Yes         | Yes         |
| External dim.*     | 200x110x160         | 265x165x225 | 330x175x290 | 600x65x355  |
| inner tank dim.*   | 180x90x50           | 238x138x100 | 302x152x150 | 500x135x150 |
| Basket dimensions* | 170x75x40           | 220x120x60  | 285x140x135 | 480x120x135 |
| Power              | 220-240 V; 50-60 Hz |             |             |             |

\* (LxAxH) (mm)

## ZCC - Ultrasound baths

### Detergent for ultrasonic baths



- 1 | Formulated to eliminate general dirt and chemical residues from glass and laboratory instruments
- 2 | Biodegradable, without phosphates and concentrated, to mix 20 mL per liter of water

| Code   | Capacity      |
|--------|---------------|
| ZCC004 | 1 L container |



## ZCF - Brushes

### Mousse range



- 1 | Autoclavables.
- 2 | Model n°1 made from fibres.
- 3 | Models n° 2, 3 and 4 made from polyethylene foam that is durable and long lasting

| Code   | N° | Total length | Application                      |
|--------|----|--------------|----------------------------------|
| ZCF001 | 3  | 480 mm       | Measuring cylinders...           |
| ZCF002 | 2  | 250 mm       | Beakers, flasks, jars...         |
| ZCF003 | 1  | 220 mm       | Test tubes Ø < 25mm              |
| ZCF004 | 4  | 440 mm       | Test tubes, Erlenmeyer flasks... |



### Flexible brushes



- 1 | Flexible rubber hose covered with a sheath of polyvinyl chloride.

| Code   | Ø bristle | Bristle length | Total length |
|--------|-----------|----------------|--------------|
| ZCF005 | 30 mm     | 165 mm         | 580 mm       |
| ZCF006 | 45 mm     | 200 mm         | 720 mm       |



### With tuft



- 1 | Made of zinc-plated steel wire and natural bristle. With ring to be hung at the end of the handle.

| Code   | Length | Brush (ØxL) | For            |
|--------|--------|-------------|----------------|
| ZCF008 | 360 mm | 15x70 mm    | Small tubes    |
| ZCF009 | 350 mm | 25x75 mm    | Medium tubes   |
| ZCF010 | 350 mm | 30x85 mm    | Large tubes    |
| ZCF015 | 850 mm | 10x180 mm   | Burettes 10 mL |
| ZCF016 | 870 mm | 15x260 mm   | Burettes 25 mL |



### Without tuft



- 1 | Made of zinc-plated steel wire and natural bristle. With ring to be hung at the end of the handle.

| Code   | Length | Brush (ØxL) | For              |
|--------|--------|-------------|------------------|
| ZCF007 | 300 mm | 10x70 mm    | Hemolysis tubes  |
| ZCF011 | 380 mm | 40x110 mm   | Probetas 250 mL  |
| ZCF012 | 380 mm | 50x130 mm   | Cylinders 500 mL |
| ZCF013 | 440 mm | 56x140 mm   | Cylinders 1 L    |
| ZCF014 | 440 mm | 80x160 mm   | Cylinders, 2 L   |
| ZCF018 | 500 mm | 10x100 mm   | Pipettes         |
| ZCF017 | 450 mm | 80x150 mm   | Glasses          |
| ZCF019 | 210 mm | 15x70 mm    | Tracheal         |
| ZCF020 | 270 mm | 5/10x80 mm  | Butyrometers     |





## ZCH - Paper

► Standar wiping paper



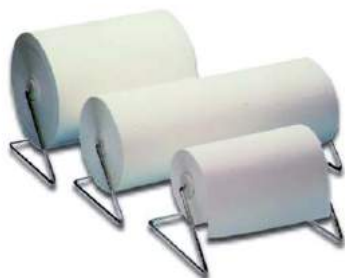
1 | Of pure white cellulose.

| Code   | Dimensions | Nº sheets/roll | Quantity |
|--------|------------|----------------|----------|
| ZCH001 | 260x 50 mm | 1000           | 2 rolls  |

Stand support for standard wiping paper  
In white colour, without cutting bar for the paper

|      |        |
|------|--------|
| Code | ZCH007 |
|------|--------|

► Krantex rolls



1 | In pure white cellulose, super absorbent.

| Code   | Dimensions | Nº sheets/roll | Quantity |
|--------|------------|----------------|----------|
| ZCH003 | 200x250mm  | 1000           | 2 rolls  |
| ZCH004 | 250x380mm  | 500            | 2 rolls  |
| ZCH005 | 250x380mm  | 250            | 1 roll   |
| ZCH006 | 380x500mm  | 500            | 2 rolls  |

Table support for Krantex rolls

| Code   | Dimensions | For code        |
|--------|------------|-----------------|
| ZCH008 | 250x380 mm | ZCH004 / ZCH005 |
| ZCH009 | 380x500 mm | ZCH006          |

Wall mounting kit for roll support

| Code   | Dimensions | For code |
|--------|------------|----------|
| ZCH010 | 250x380 mm | ZCH008   |
| ZCH011 | 380x500 mm | ZCH009   |

► Lens cleaning paper



1 | Code ZCH012 is supplied in 25 packs of 25 sheets each one.

| Code   | Dimensions   | Nº sheets |
|--------|--------------|-----------|
| ZCH012 | 95 x 135 mm  | 625       |
| ZCH013 | 190 x 135 mm | 500       |
| ZCH014 | 190 x 270 mm | 500       |
| ZCH015 | 380 x 540 mm | 500       |

► Slides drying paper



| Code   | Dimensions | Nº sheets |
|--------|------------|-----------|
| ZCH002 | 100x40 mm  | 50 sheets |

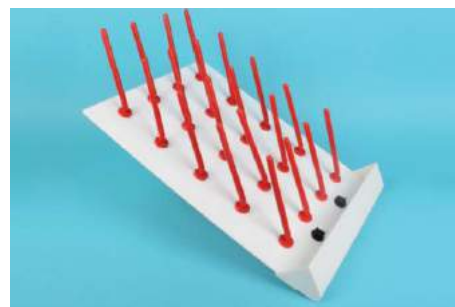
## ▶ ZCZ - Others

### ▶ Draining rack 20 places



1| Made of polypropylene (PP). Wall model. 20 pins detachables

| Code   | Dimensions     |
|--------|----------------|
| ZCZ003 | 500x350x100 mm |



### ▶ Draining rack, desktop or hanged



- 1| Made of plastic coated steel.  
2| Lower shelf for dripping water

| Code   | Hangers | HxLxA (mm)    |
|--------|---------|---------------|
| ZCZ001 | 32      | 470x360x160mm |
| ZCZ002 | 55      | 640x360x140mm |



## ▶ ZFD - Molecular biology



### ▶ Thermalcycler PureAmp G

- 1| High quality and durability of Peltier technology components which increase the working life of the equipment  
2| Gradient function to facilitate the set-up of the technique.  
3| High-performance universal power supply  
4| Large 5.7 inch high definition LCD display. Graphical interface.  
5| Power-down data protection. Heated and adjustable lid  
6| Resistant metal shell, solid and durable

|                               |                              |
|-------------------------------|------------------------------|
| Code                          | ZFD012                       |
| Capacity                      | 96x0.2 mL                    |
| Temperature range             | 0 – 99.9°C                   |
| Heating rate                  | 4°C/s                        |
| Cooling rate                  | 3°C/s                        |
| Uniformity                    | ≤±0.3°C                      |
| Accuracy                      | ≤±0.2°C                      |
| Screen resolution             | 0.1°C                        |
| Temperature contro            | Block / Tube                 |
| Tasa de incremento de temp.   | 0.1 - 4°C/s                  |
| Uniformity de gradiente       | ≤±0.3°C                      |
| Accuracy de gradiente         | ≤±0.2°C                      |
| Gradient temperature range    | 30-99.9°C                    |
| Gradient extension            | 1-30°C                       |
| Hot lid range                 | 30 - 110°C                   |
| Adjustable lid                | Yes                          |
| Number of programs            | 200                          |
| Max. number of segments       | 9                            |
| Max. number of steps          | 9                            |
| Max. number of cycles         | 99                           |
| Time increase/decrease        | 1 second – 9 min 59 s        |
| Temperature increase/decrease | 0.1 – 9.9°C                  |
| Pause function                | Yes                          |
| Auto data protection          | Yes                          |
| Graphical display             | Yes                          |
| Hold low temperature at 4°C   | Indefinite time              |
| LCD display                   | 5.7", 320x240 pixels         |
| Port                          | RS232                        |
| Dimensios (LxAxH)             | 392x262x252 mm               |
| Weight                        | 10 Kg                        |
| Power                         | 85-260 V AC, 50-60 Hz, 600 W |







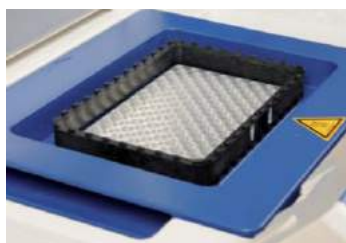
## ZFD - Molecular biology



► Thermalcyclers, models 4096 and 4196



- 1| High quality and durability of Peltier-based components increasing the life time of the equipment up to 1.000.000 cycles.
- 2| Compact, light and noiseless design for space-saving and easy setup and transportation
- 3| 7" Color Touch Screen that allows setting and controlling all functions and that offers information and detailed graphical display of protocols and running status.
- 4| Combi-block to adapt to different type of tubes, strips or plates depending on analysis requirements.
- 5| Heated and height adjustable lid .
- 6| USB and LAN communication ports for data transferring and possibility of connection of USB flash drive for unlimited storage of protocols
- 7| Gradient function (only model 4196).
- 8| 2 different temperature control modes available: block temperature and tube temperature.
- 9| Multi-user log in..
- 10| Tm calculator: automatically calculates the melting and annealing temperature through input two primer sequences.
- 11| Pause and resume function.



[01]  
Detail of 2 in 1  
combi-bloc



[02]  
Detail of software  
application

|                           |                                                                                        |                            |
|---------------------------|----------------------------------------------------------------------------------------|----------------------------|
| Code                      | ZFD001                                                                                 | ZFD002                     |
| Modelo                    | 4096                                                                                   | 4196                       |
| Bloc                      |                                                                                        |                            |
| Capacity                  | 96 x 0.2 mL; 77 x 0.5 mL                                                               |                            |
| Compatibility             | Tuboos of 0.2 mL and 0.5 mL (thin-wall)<br>8 and 12 tube-strips<br>96 wells PCR plates |                            |
| Technology                | New generation Peltier-based technology (up to 1.000.000 cycles)                       |                            |
| Display                   | 7" Color Touch Screen                                                                  |                            |
| USB Flash Drive           | Unlimited storage of protocols in USB Flash Drive                                      |                            |
| Communication ports       | 2 USB 2.0 y LAN                                                                        |                            |
| Temperature               |                                                                                        |                            |
| Block temperature range   | 0° C – 100° C                                                                          |                            |
| Max. heating rate         | 5 °C/s                                                                                 |                            |
| Max. cooling rate         | 4 °C/s                                                                                 |                            |
| Temp. uniformity.         | ≤ ± 0.2 °C (a 95°C)                                                                    |                            |
| Temp. accuracy            | ≤ ± 0.2 °C (35°C – 100°C)                                                              |                            |
| Temp. control mode.       | Tube and bloc                                                                          |                            |
| Adjustable ramping rate   | Yes                                                                                    |                            |
| Gradient                  |                                                                                        |                            |
| Gradient accuracy         | -                                                                                      | ≤ ± 0.3 °C (35°C – 100 °C) |
| Column uniformity         | -                                                                                      | ≤ ± 0.3 °C (at 95°C)       |
| Gradient range            | -                                                                                      | 30 °C – 99.9 °C            |
| Gradient range            | -                                                                                      | 1 °C – 30 °C               |
| Lid                       |                                                                                        |                            |
| Height                    | Adjustable lid, accommodates all kinds of PCR tubes, strips and plates                 |                            |
| Temperature range         | 30°C - 112 °C                                                                          |                            |
| Auto shut-off             | Yes                                                                                    |                            |
| Software                  |                                                                                        |                            |
| Programs                  | Max. 10.000 programs on board, unlimited storage with USB flash drive                  |                            |
| Max. step & max. cycle    | 30 steps, 100 typical cycles, max. 60.000 nesting cycles                               |                            |
| Auto pause & Auto restart | Yes                                                                                    |                            |
| Hold at 4°C               | Yes, for unlimited time                                                                |                            |
| Power                     | 85 - 265 V ± 25%, 47/63 Hz, Max. 600W                                                  |                            |

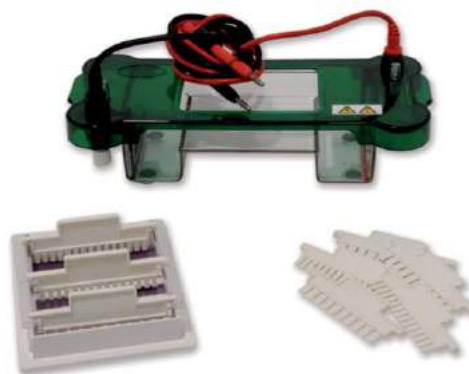
## ▶ ZFD - Molecular biology



### ▶ Horizontal electrophoresis cell

- 1| Bucket made of high quality acrylic material and in one piece to prevent liquid leakage.
- 2| Transparent cover that provides a correct seal to avoid buffer evaporation and electrical leakage; with fixed power cables with banana type connector.
- 3| Easy to replace platinum electrodes.
- 4| The volume of buffer required guarantees not only the refrigeration but also keeps the pH values stable throughout the process.
- 5| Auto-off function when lid is removed

|                    |                |
|--------------------|----------------|
| Code               | ZFD013         |
| Gel size           | 78x100 mm      |
| Nº of samples      | 8/15           |
| Combs size         | 1 y 2 mm       |
| Buffer (approx.)   | 300 mL approx. |
| Input voltage      | 150 V          |
| Dimensions (LxAxH) | 365x105x55 mm  |



### ▶ Vertical electrophoresis cell

- 1| For the separation of molecules in polyacrylamide gels
- 2| With platinum electrodes. Compatible with power supply code ZFD014 and the transfer module ZFD006
- 3| It includes:
  - Tank made of acrylic material and in one piece
  - Gel support
  - Gel casting device
  - Glass and notched plates with 1 mm or 1.5 mm thick fixed spacers
  - Combs set of 10 and 15 wells for 1 and 1.5 mm thick gels
  - Thick glass plate in case of conducting electrophoresis of a single gel

|                         |                     |
|-------------------------|---------------------|
| Code                    | ZFD005              |
| Number of gels          | 1 ó 2               |
| Gel size                | 82 x 82 mm          |
| Nº of samples           | 10 ó 15 per gel     |
| Glass plate dimensions  | 102 x 85 mm         |
| Buffer                  | 750 mL              |
| Electrophoresis time    | 45-60 min (a 200 V) |
| Tank dimensions (LxAxH) | 150x140x100 mm      |
| Weight                  | 0.9 Kg              |



### ▶ Transfer module

- 1| For protein transference from polyacrylamide gels (Western Blot)
- 2| Support with platinum electrodes
- 3| With colour code to ensure the correct orientation of the gel during the transferring process
- 4| Compatible with external tank of the vertical electrophoresis cell and supply source code ZFD014
- 5| It includes:
  - 2 polycarbonate cassettes with pore plates
  - 4 pads

|                       |                 |
|-----------------------|-----------------|
| Code                  | ZFD006          |
| Pore plate dimensions | 95 x 87 mm      |
| Buffer                | 500 mL          |
| Working conditions    | 0-40°C; ≤80% HR |





## ZFD - Molecular biology



## UV transiluminator



- 1| UV illumination source wavelength 312 nm
- 2| Equipped with 4 quartz lamps of 8 W.
- 3| Screen highly transparent and protective against UV emission. It can be positioned at any angle for safe and comfortable use of equipment.

|                    |                |
|--------------------|----------------|
| Code               | ZFD015         |
| Wavelength         | 312 nm         |
| Filter size, UV    | 150x200 mm     |
| Emission power     | 4 x 8 W        |
| Dimensions (LxAxH) | 325x265x150 mm |
| Power              | 220 V; 50 Hz   |

## Power supply for electrophoresis



- 1| Easy to use the LCD display and control panel.
- 2| Programed value and actual value are indicated at the same time. Programmable time function.
- 3| With automatic detection of lack of load, overload, short circuit, rapid change of resistance and system overheating.

|                    |                    |
|--------------------|--------------------|
| Code               | ZFD014             |
| Output voltage     | 10-300 V           |
| Output current     | 1-400 mA           |
| Output power       | 1-120 W            |
| Outputs            | 4 parallel outputs |
| Dimensions (LxAxH) | 230x237x118 mm     |
| Power              | 220 V; 50 Hz       |



## ZFP - Histology



## Hand microtome, model 501



- 1| With glass stage and inner clip to fasten the inclusion.
- 2| Micrometric screw in the base to move the sample up.
- 3| Slice range from 10  $\mu$ m.
- 4| Fix folding knife included.

|          |          |
|----------|----------|
| Code     | ZFP001   |
| Diameter | 65-66 mm |

## Microtomo de rotación manual, básico



- 1| Light to turn handwheel, it presents a locking device locks in the inner mechanism.
- 2| Micrometric screw in the base for advancing the sample.
- 3| Clip for samples with orientation system
- 4| The equipment is supplied with a 12 cm-long knife; it is also compatible with blade holder for disposable blades ref. ZFR008 (not included).
- 5| The blade carrier can be moved front and backwards and also laterally.

|                          |                |
|--------------------------|----------------|
| Code                     | ZFP010         |
| Section thickness        | 1-25 $\mu$ m   |
| Min. adjustment          | 1 $\mu$ m      |
| Accuracy                 | $\pm$ 10%      |
| Max. specimen size       | 25x35 mm       |
| Blade orientation angle  | 0-10°          |
| Horizontal sample stroke | 35 mm          |
| Vertical sample stroke   | 46 mm          |
| Dimensions (LxWxH)       | 350x350x270 mm |
| Weight                   | 26 Kg          |

## ZFP - Histology



### Manual rotary microtome, advanced

- 1| Robust and easy to clean design.
- 2| Manual handwheel: the equipment presents a light to turn handwheel with ergonomic handle that minimizes fatigue after long periods of use.
- 3| Coarse feed wheel with a lower position for an easy access.
- 4| The blade carrier can be also moved front and backwards and presents a regulation system of the cutting edge angle.
- 5| The microtome is supplied with both standard and universal clamp for embedding cassettes.

|                           |                                                                                                                                                                                                                               |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Code                      | ZFP011                                                                                                                                                                                                                        |
| Section thickness         | 0.5-60 $\mu\text{m}$                                                                                                                                                                                                          |
| Section thickness setting | From 0.5-2 $\mu\text{m}$ in steps of 0.5 $\mu\text{m}$<br>From 2-10 $\mu\text{m}$ in steps of 1 $\mu\text{m}$<br>From 10-20 $\mu\text{m}$ in steps of 2 $\mu\text{m}$<br>From 20-60 $\mu\text{m}$ in steps of 5 $\mu\text{m}$ |
| Accuracy                  | $\pm 5\%$                                                                                                                                                                                                                     |
| Max. specimen size        | 50x45 mm                                                                                                                                                                                                                      |
| Blade orientation angle   | 0-12°                                                                                                                                                                                                                         |
| Coarse feed               | Manual                                                                                                                                                                                                                        |
| Horizontal sample stroke  | 35 mm                                                                                                                                                                                                                         |
| Vertical sample stroke    | 46 mm                                                                                                                                                                                                                         |
| Sample orientation        | 8° (axis X-Y); rotatable 360°                                                                                                                                                                                                 |
| Dimensions (LxAxH)        | 300x570x270 mm                                                                                                                                                                                                                |
| Weight                    | 34 Kg                                                                                                                                                                                                                         |



### Rotary microtome semi-automatic

- 1| Robust, comfortable and easy to clean design.
- 2| Safety for user, with Blade holder for disposable blades with finger safety guard to protect user during work breaks and locking system by means of a lever placed at the lateral base of equipment that locks handwheel at any position.
- 3| Touch screen for parameter set and control: motorized feeding of the sample, section thickness, trimming section thickness and slice counting.
- 4| Manual handwheel with ergonomic handle.
- 5| The blade carrier presents a lateral adjustment mechanism.
- 6| The microtome is supplied with standard and universal clamp. The microtome can be also used with a special clamp for slicing plastic layers (not included).

|                                          |                                                                                                                                                                                                                                                                                         |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Code                                     | ZFP012                                                                                                                                                                                                                                                                                  |
| Section thickness range                  | 0.5-100 $\mu\text{m}$                                                                                                                                                                                                                                                                   |
| Section thickness setting value          | From 0.5-2 $\mu\text{m}$ in steps of 0.5 $\mu\text{m}$<br>From 2-10 $\mu\text{m}$ in steps of 1 $\mu\text{m}$<br>From 10-20 $\mu\text{m}$ in steps of 2 $\mu\text{m}$<br>From 20-50 $\mu\text{m}$ in steps of 5 $\mu\text{m}$<br>From 50-100 $\mu\text{m}$ in steps of 10 $\mu\text{m}$ |
| Trimming section thickness range         | 5-500 $\mu\text{m}$                                                                                                                                                                                                                                                                     |
| Trimming section thickness setting value | From 5-100 $\mu\text{m}$ in steps of 10 $\mu\text{m}$<br>From 100-200 $\mu\text{m}$ in steps of 20 $\mu\text{m}$<br>From 200-500 $\mu\text{m}$ in steps of 50 $\mu\text{m}$                                                                                                             |
| Horizontal sample stroke                 | 28 mm, motorized                                                                                                                                                                                                                                                                        |
| Vertical sample stroke                   | 60 mm                                                                                                                                                                                                                                                                                   |
| Sample retraction                        | 12 $\mu\text{m}$                                                                                                                                                                                                                                                                        |
| Accuracy                                 | $\pm 5\%$                                                                                                                                                                                                                                                                               |
| Max. specimen size                       | 50x45 mm                                                                                                                                                                                                                                                                                |
| Blade orientation angle                  | 0-14°                                                                                                                                                                                                                                                                                   |
| Sample orientation                       | 8° (axis X-Y); rotatable 360°                                                                                                                                                                                                                                                           |
| Dimensions (LxWxH)                       | 520x450x300 mm                                                                                                                                                                                                                                                                          |
| Weight                                   | 30 Kg                                                                                                                                                                                                                                                                                   |
| Power                                    | 220 V / 50 Hz                                                                                                                                                                                                                                                                           |





## ZFP - Histology



► Paraffin dispensing unit



- 1 | Independent temperature adjustment of the different parts: working area, paraffin reservoir, manual/cassettes warmer and dispenser.
- 2 | Large easy to clean granite surface. Dispenser can be activated manually or via foot switch.
- 3 | Dispenser can be activated manually or via foot switch (included).
- 4 | Drainage system with reservoir and easily removable.
- 5 | Heated forceps holder for 6 units.

|                            |                               |
|----------------------------|-------------------------------|
| Code                       | ZFP006                        |
| Temperatura de trabajo     | 55°C / 70°C (in steps of 5°C) |
| Capacity                   |                               |
| Depósito parafina          | 1 x 2 L                       |
| Depósitos casetes y moldes | 2 x 1 L                       |
| Programme operation        | Temperature and starting time |
| Dimensions                 | 390 x 550 x 500 mm            |
| Power                      | 220 V, 50 Hz                  |

► Cold plate for paraffin dispensing unit



- 1 | Designed to be used with paraffin dispensing unit during sample embedding and during sectioning with the microtome.
- 2 | Frame around steel surface to prevent dropping around.

|                  |                     |
|------------------|---------------------|
| Code             | ZFP007              |
| Temperature      | Up to -20°C         |
| Plate dimensions | 31 x 29.8 cm        |
| Total dimensions | 57 x 34.5 x 38.5 cm |

► Histology bath for paraffin sections



- 1 | Black tank for a proper localization of paraffin sections.
- 2 | Wide thermal limit for drying paraffin sections.

|                   |               |
|-------------------|---------------|
| Code              | ZFP008        |
| Capacity          | 2 L (aprox.)  |
| Temperature range | Up to 90 °C   |
| Tank dimensions   | 24x18x5.4 cm  |
| Total dimensions  | 34x35x10.5 cm |

► Hot plate for histology



- 1 | For drying microscope slides.

|                   |               |
|-------------------|---------------|
| Code              | ZFP009        |
| Temperature range | Up to 90 °C   |
| Tank dimensions   | 34x25cm       |
| Total dimensions  | 34x25x10.5 cm |



## ZFR - Accessories

## ► Feather blades

- 1 | Made of stainless steel, supplied in cassettes of 50 units..
- 2 | Dimensions: 80x8 mm

- Blades not included in microtomes
- Compatible with all models of microtomes
- For basic model, it is necessary to install previously blade holder ref. ZFR008



| Code   | Model | Description                |
|--------|-------|----------------------------|
| ZFR003 | R35   | For routine purposes       |
| ZFR004 | S35   | For extrathin sectioning   |
| ZFR001 | A35   | For hard tissue sectioning |
| ZFR002 | N35   | Long duration blades       |

## ► CHART 1: 'Microtomes accessories'

|                                                                                     | Code   | Description                                                                                             | Model                                                                                 |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                     |        |                                                                                                         | 501                                                                                   | Basic                                                                                 | Advanced                                                                              | Semi-automatic                                                                        |
|  | ZFR008 | Blade holder for disposable blades<br>Stainless steel; dim. 170x30x10 mm                                |                                                                                       |  |                                                                                       |                                                                                       |
|  | ZFR011 | Clamp for plastic plate for microtome advanced<br>To slice thin plastic plates as HDPE plates           |                                                                                       |                                                                                       |  |                                                                                       |
|  | ZFR012 | Clamp for slicing plastic layers<br>Special clamp for slicing plastic layers in industrial applications |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|  | FMB001 | Histologic folding knife, stainless steel handle                                                        |  |                                                                                       |                                                                                       |  |
|  | FMB002 | Histologic folding knife, plastic handle                                                                |  |                                                                                       |                                                                                       |                                                                                       |

 = Accesorio **incluido** con el equipo indicado

 = Accesorio **compatible** con el equipo indicado





## ZHB - Paddle blenders



- 1 | Stainless steel compact design for sample volumes of 50-400 mL.
- 2 | Frontal door with a glass window to allow the control of samples.
- 3 | Tray to collect possible liquid leaks.
- 4 | Digital display that shows the most important parameters.
- 5 | Adjustable homogenization time and speed.
- 6 | Paddle distance and blending strength adjustment mechanism

|                      |                                              |
|----------------------|----------------------------------------------|
| Code                 | ZHB001                                       |
| Timer                | 10, 30, 60, 90 s; 2, 3, 6 min; modo continuo |
| Frecuencia de golpeo | 6, 7, 8 ó 9 golpes                           |
| Potencia             | 165 W                                        |
| Dimensions (LxAxH)   | 22 x 41 x 25 cm                              |
| Weight               | 18 Kg                                        |



## ZHD - Accessories



► CHART 2: 'Paddle blender accessories'

|                                                                                     | Code   | Description                             | Model<br>Paddle blenders                                                              |
|-------------------------------------------------------------------------------------|--------|-----------------------------------------|---------------------------------------------------------------------------------------|
|   | ZHD001 | Bags with filter, pack 200 uds          |    |
|  | ZHD002 | Standard bags , pack 500 uds            |  |
|  | ZHD003 | Rack for blender bags                   |  |
|  | ZHD004 | Straws for blender bags, pack of 50 uds |  |
|                                                                                     | ZHD005 | Opener for blender bags                 |  |

 = Accessories **included** with indicated item

 = Accessories **compatible** with indicated item



## ZKN - Productos lácteos

## ► Milk analyzer, Lactoscan SP

- 1| Easy to use, maintain, install and calibrate
- 2| Compact design easily transportable
- 3| Very small milk quantity needed
- 4| Not necessary to use any chemical reagent to make the analysis
- 5| Calibration of measurements can be made through RS232 output
- 6| Printer output ESC POS
- 7| 9 measuring parameters:
  - Fat: 0.01-25%  $\pm$  0.1%
  - Solids-non-fat (SNF): 3-15%  $\pm$  0.15%
  - Density: 1015-1040 Kg/m<sup>3</sup>  $\pm$  0.3 Kg/m<sup>3</sup>
  - Protein: 2-7 %  $\pm$  0.15%
  - Lactose: 0.01-6%  $\pm$  0.2%
  - Added water: 0-70%  $\pm$  3%
  - Temperature: 1-40°C  $\pm$  1°C
  - Freezing point: 0.4-0.7 °C  $\pm$  0.001°C
  - Salts: 0.4-1.5%  $\pm$  0.05%



|                      |                |
|----------------------|----------------|
| Code                 | ZKN001         |
| Temperatura ambiente | 10 - 40 °C     |
| Temperatura leche    | 1 - 40 °C      |
| Humedad relativa     | 30 - 80%       |
| Power                | AC 220V - 110V |
| Consumption          | 30 W           |
| Dimensions (LxAxH)   | 22x41x25 cm    |
| Weight               | < 1,5 Kg       |

## ► CHART 3: 'LACTOSCAN SP accessories'

|                                                                                     | Code   | Description                                  | Model<br>LASTOSCAN SP                                                                 |
|-------------------------------------------------------------------------------------|--------|----------------------------------------------|---------------------------------------------------------------------------------------|
|  | ZKN002 | Printer for Lactoscan SP analyzer            |  |
|  | ZKN003 | Alkaline cleaning solution, Lactodaily, 1 Kg |  |
|  | ZKN004 | Acidic cleaning solution, Lactoweekly, 1 Kg  |  |

 = Accessories **included** with indicated item

 = Accessories **compatible** with indicated item

## ZKZ - Others



## ▶ Digester apparatus for trichina



1 | Kit especialmente pensado para llevar a cabo el análisis por medio del método de digestión de muestras colectivas con utilización de un agitador magnético.

| Code   | Description                     |
|--------|---------------------------------|
| ZKZ001 | Digester apparatus for trichina |

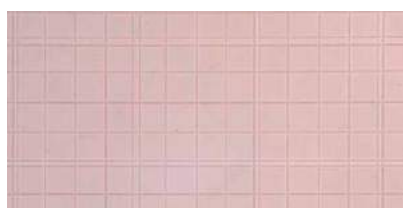
Composed of:

- LBD001 Digital magnetic stirrer w/heating, 692/1
- PQB030 Separating funnel 2L, open, f/trichina apparatus
- PQL006 Cylindrical funnel 50 mL, open, f/trichina apparatus
- ZKZ002 Sieve 100x40, 180  $\mu$ m
- FCB005 Retort stand, cast steel, 300x180 mm, rod 10x600mm
- FCV004 Retort ring w/shank closed  $\varnothing$  int. 105 mm, chromeplated steel
- FCV002 Retort ring w/shank closed  $\varnothing$  int. 65 mm, chromeplated steel
- FCG001 Clamp 2 prongs w/o bosshead, 12-45 mm
- FCP002 Double bosshead, painted, medium, 16 mm (3 units)
- CBC025 Beaker low form, 3000 mL
- LDB011 PTFE magnetic stirrer bar, cylindrical, 55x8 mm
- DBG003 Measuring cylinder, glass, 25 ml
- DGJ010 Graduated pipette, 25ml/0.1ml
- MBJ009 Pipette pump, 25 mL red
- LDR010 Policemen stirring rods
- BRB012 Rodac dishes gridded B/20

The equipment is supplied with a standard configuration, although it can be extended with the following element:

- KBC001: Precision balance 300g/0.01g, series 5162
- HDD005: Stereomicroscope ZUZI 234
- FMJ010: Dissecting forceps 1:2 teeth, 160 mm
- FMN011: Straight scissors sharp-sharp, 160 mm
- KKF002: Pocket timer 24 h, 1 memory
- DGJ005: Graduated pipette, 1ml/0.01ml
- DGJ008: Graduated pipette, 10ml/0.1ml

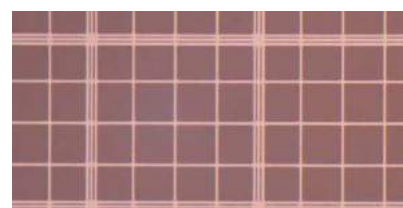
## ▶ ZMB - Blood analysis



**[1] STANDARD:** the ruling is engraved on the bottom of the chamber and under the microscope it appears as a grid of dark lines.



**[2] WITH CLAMPS:** similar to standard format but in this case the counting chamber is provided with a pair of clamps to hold the cover glass.



**[3] BRIGHT-LINED:** they present a rhodium-coated bottom that makes the ruling appear as a grid of bright lines under the microscope, allowing an optimum contrast.

|                   | Trademark           | Standard |        | With clamps | Bright lines |
|-------------------|---------------------|----------|--------|-------------|--------------|
|                   |                     | Double   | Simple | Double      | Double       |
| Neubauer Improved | ZUZI                | ZMB007   |        |             | ZMB009       |
|                   | PRECISS EUROPE (CE) | ZMB027   | ZMB030 | ZMB028      | ZMB029       |
| Bürker            | ZUZI                | ZMB001   |        |             | ZMB003       |
|                   | PRECISS EUROPE (CE) | ZMB013   | ZMB016 |             | ZMB015       |
| Fuchs-Rosenthal   | ZUZI                | ZMB004   |        |             | ZMB006       |
|                   | PRECISS EUROPE (CE) | ZMB017   | ZMB020 | ZMB018      | ZMB019       |
| Thoma             | ZUZI                | ZMB010   |        |             | ZMB012       |
|                   | PRECISS EUROPE (CE) | ZMB031   | ZMB034 | ZMB032      | ZMB033       |
| Malassez          | ZUZI                |          |        |             |              |
|                   | PRECISS EUROPE (CE) | ZMB021   | ZMB024 |             |              |

## ZMB - Blood analysis

### Neubauer Improved counting chamber

- 1 | Depth: 0.100 mm
- 2 | Volume 1 mm<sup>2</sup>: 0.1 µL
- 3 | Area minimum: 0.0025 mm<sup>2</sup>
- 4 | They are mainly used for counting erythrocytes, thrombocytes and leukocytes.



- 1 | Without CE (IVD) marked, for sales outside the EC.

| Code   | Formato                                    |
|--------|--------------------------------------------|
| ZMB007 | [1] Standard, double net ruling dark-lined |
| ZMB009 | [3] Double net ruling bright-lined         |



- 1 | With CE (IVD) marked.

| Code   | Formato                                    |
|--------|--------------------------------------------|
| ZMB027 | [1] Standard, double net ruling dark-lined |
| ZMB028 | [2] Double net ruling dark-lined           |
| ZMB029 | [3] Double net ruling bright-lined         |
| ZMB030 | [1] Simple net ruling dark-lined           |



### Bürker counting chamber

- 1 | Depth: 0.100 mm
- 2 | Volume 1 mm<sup>2</sup>: 0.1 µL
- 3 | Area minimum: 0.0025 mm<sup>2</sup>
- 4 | They are mainly used for counting erythrocytes and thrombocytes.



- 1 | Without CE (IVD) marked, for sales outside the EC.

| Code   | Formato                                    |
|--------|--------------------------------------------|
| ZMB001 | [1] Standard, double net ruling dark-lined |
| ZMB003 | [3] Double net ruling bright-lined         |



- 1 | With CE (IVD) marked.

| Code   | Formato                                    |
|--------|--------------------------------------------|
| ZMB013 | [1] Standard, double net ruling dark-lined |
| ZMB015 | [3] Double net ruling bright-lined         |
| ZMB016 | [1] Simple net ruling dark-lined           |





## ZMB - Blood analysis

## Fuchs-Rosenthal counting chamber



- 1 | Depth: 0.200 mm
- 2 | Volume 1 mm<sup>2</sup>: 0.2 μL
- 3 | Area minimum: 0.0625 mm<sup>2</sup>
- 4 | They are mainly used for counting cells in cerebrospinal fluids (CSF).



- 1 | Without CE (IVD) marked, for sales outside the EC.

| Code   | Format                                     |
|--------|--------------------------------------------|
| ZMB004 | [1] Standard, double net ruling dark-lined |
| ZMB006 | [3] Double net ruling bright-lined         |



- 1 | With CE (IVD) marked.

| Code   | Format                                        |
|--------|-----------------------------------------------|
| ZMB017 | [1] Standard, double net ruling dark-lined    |
| ZMB018 | [2] Double net ruling dark-lined, with clamps |
| ZMB019 | [3] Double net ruling bright-lined            |
| ZMB020 | [1] Simple net ruling dark-lined              |

## Thoma counting chamber



- 1 | Depth: 0.100 mm
- 2 | Volume 1 mm<sup>2</sup>: 0.1 μL
- 3 | Area minimum: 0.0025 mm<sup>2</sup>
- 4 | They are mainly used for counting erythrocytes and thrombocytes.



- 1 | Without CE (IVD) marked, for sales outside the EC.

| Code   | Format                                     |
|--------|--------------------------------------------|
| ZMB010 | [1] Standard, double net ruling dark-lined |
| ZMB012 | [3] Double net ruling bright-lined         |



- 1 | With CE (IVD) marked.

| Code   | Format                                        |
|--------|-----------------------------------------------|
| ZMB031 | [1] Standard, double net ruling dark-lined    |
| ZMB032 | [2] Double net ruling dark-lined, with clamps |
| ZMB033 | [3] Double net ruling bright-lined            |
| ZMB034 | [1] Simple net ruling dark-lined              |

## Counting chamber Malassez



- 1 | Depth: 0.200 mm
- 2 | Volume 1 mm<sup>2</sup>: 0.2 μL
- 3 | Area minimum: 0.0025 mm<sup>2</sup>
- 4 | They are mainly used for counting blood cells.
- 5 | With CE (IVD) marked

| Code   | Format                           |
|--------|----------------------------------|
| ZMB021 | [1] Double net ruling dark-lined |
| ZMB024 | [1] Simple net ruling dark-lined |

## ▶ ZMB - Blood analysis

### ▶ Coverglasses



- 1 | Made of soda glass, with ground edges.
- 2 | Thickness 0.4 mm.
- 3 | Is supplied in boxes of 10 units.

| Code   | Dimensions |
|--------|------------|
| ZMB036 | 20x26 cm   |
| ZMB037 | 22x22 cm   |
| ZMB038 | 24x24 mm   |



### ▶ Microhaematocrit capillaries



- 1 | Disposable, with easily sealing for a later centrifugation.

| Code    | Volume     | Length | Heparinized | Pack            |
|---------|------------|--------|-------------|-----------------|
| ZMB047  | 75 $\mu$ L | 75 mm  | No          | Box of 200 uds. |
| ZMB048* | 35 $\mu$ L | 40 mm  | No          | Box of 100 uds. |
| ZMB049* | 35 $\mu$ L | 40 mm  | Yes         | Box of 100 uds. |

\* for Fugevet centrifuge



## ▶ ZMD - Urine containers

### ▶ Urine Bottles "Sabot" Model Man

- 1 | Non graduated.

| Code   | Volume |
|--------|--------|
| ZMD003 | 900mL  |





LABORATORY  
SUPPLIERS

SERVICES

TRADEMARKS

STOCK

COMPETITIVITY



 **IENDO**  
plasticware

Own brand of the group Auxilab/ Rogo Sampaic.  
Please know the wide range of laboratory plastic  
products we offer at your disposal. Plastic of quality at  
a competitive price to satisfy your needs



index  
of contents

catalogue  
2018 - 2019

# **B** general use

|        |   |        |    |        |    |        |    |        |    |        |    |
|--------|---|--------|----|--------|----|--------|----|--------|----|--------|----|
| BBB001 | 6 | BDL005 | 9  | BJD006 | 16 | BMD121 | 21 | BPD022 | 24 | BTD032 | 31 |
| BBB002 | 6 | BDL011 | 9  | BJD007 | 16 | BMD122 | 21 | BPD023 | 24 | BTD033 | 31 |
| BBB003 | 6 | BDL012 | 9  | BJD008 | 16 | BMD123 | 21 | BPD024 | 24 | BTD034 | 31 |
| BBB004 | 6 | BDL013 | 10 | BJD009 | 16 | BMD124 | 21 | BPD025 | 24 | BTD035 | 31 |
| BBC001 | 6 | BDL014 | 10 | BJD010 | 16 | BMD125 | 21 | BPG001 | 25 | BTD036 | 31 |
| BBC002 | 6 | BDL015 | 10 | BJD011 | 16 | BMD126 | 21 | BPG002 | 25 | BTD037 | 31 |
| BBC003 | 6 | BDL016 | 10 | BJD012 | 16 | BMD127 | 21 | BPG003 | 25 | BTD038 | 31 |
| BBC004 | 6 | BDL017 | 10 | BJD013 | 16 | BMD128 | 21 | BPG004 | 25 | BTD039 | 31 |
| BBC005 | 6 | BGB001 | 10 | BJD014 | 16 | BMD129 | 21 | BPG005 | 25 | BTD040 | 31 |
| BBC006 | 6 | BGB002 | 10 | BJD015 | 16 | BMD130 | 21 | BPG006 | 25 | BTD041 | 31 |
| BBC007 | 6 | BGB003 | 10 | BJD016 | 16 | BMH103 | 21 | BPG007 | 25 | BTD042 | 31 |
| BBD001 | 6 | BGB005 | 10 | BJD017 | 16 | BMH104 | 21 | BPG008 | 25 | BTD043 | 31 |
| BBD002 | 6 | BGB006 | 10 | BJD018 | 16 | BMH105 | 21 | BPG009 | 25 | BTD044 | 31 |
| BBD003 | 6 | BGB007 | 10 | BJD019 | 16 | BMH106 | 21 | BPG010 | 25 | BTD045 | 31 |
| BBD004 | 6 | BGB008 | 10 | BJD020 | 16 | BMH107 | 21 | BPG011 | 25 | BTD046 | 31 |
| BBD005 | 6 | BGB009 | 10 | BJD021 | 16 | BMH108 | 21 | BPG012 | 25 | BTD047 | 31 |
| BBD006 | 6 | BGB010 | 10 | BJD022 | 16 | BMH109 | 21 | BPG013 | 25 | BTD048 | 31 |
| BBD007 | 6 | BGB011 | 10 | BJD023 | 16 | BMH110 | 21 | BPG014 | 25 | BTD049 | 31 |
| BBD008 | 6 | BGB025 | 10 | BJD024 | 16 | BMH111 | 21 | BPG015 | 26 | BTD050 | 31 |
| BBD009 | 6 | BGB026 | 10 | BJD025 | 16 | BMH112 | 21 | BPG016 | 26 | BTD051 | 31 |
| BBD010 | 6 | BGB027 | 10 | BJD026 | 16 | BMH113 | 21 | BPG017 | 26 | BTQ001 | 32 |
| BBD011 | 6 | BGB028 | 10 | BJD027 | 16 | BMH114 | 21 | BPG018 | 26 | BTS001 | 32 |
| BBD012 | 6 | BGD001 | 11 | BJD028 | 16 | BMH115 | 21 | BPJ001 | 26 | BTS002 | 32 |
| BBD013 | 6 | BGD002 | 11 | BJD029 | 16 | BMH116 | 21 | BPJ006 | 26 | BTS003 | 32 |
| BBD014 | 6 | BGD003 | 11 | BJD030 | 16 | BMH117 | 21 | BPJ011 | 26 | BTS004 | 32 |
| BBD015 | 6 | BGD004 | 11 | BJD031 | 16 | BMH118 | 21 | BPJ016 | 27 | BTS005 | 32 |
| BBD016 | 6 | BGD005 | 11 | BJD032 | 16 | BMH119 | 21 | BPJ039 | 27 | BTS006 | 32 |
| BBD017 | 6 | BGD006 | 11 | BJD033 | 16 | BMH120 | 21 | BPJ040 | 27 | BYF001 | 32 |
| BBD018 | 6 | BGD007 | 11 | BJD034 | 17 | BMH121 | 21 | BPJ041 | 27 | BYF002 | 32 |
| BBD019 | 6 | BGD008 | 11 | BJD035 | 17 | BMH122 | 21 | BPJ042 | 27 | BYF003 | 32 |
| BBD020 | 6 | BGD009 | 11 | BJD036 | 17 | BML001 | 21 | BPJ043 | 27 | BYF017 | 33 |
| BBD021 | 6 | BGD010 | 11 | BJD037 | 17 | BML002 | 21 | BPL001 | 27 | BYF018 | 33 |
| BBD022 | 6 | BGD011 | 11 | BJJ001 | 17 | BML003 | 21 | BPL003 | 28 | BYF019 | 33 |
| BBD023 | 6 | BGD070 | 11 | BJJ002 | 17 | BPB001 | 22 | BPL005 | 28 | BYF020 | 33 |
| BBD024 | 6 | BGG001 | 12 | BJJ003 | 17 | BPB002 | 22 | BPL007 | 28 | BYF024 | 33 |
| BBD025 | 6 | BGG002 | 12 | BJJ004 | 17 | BPB003 | 22 | BPL008 | 28 | BYF025 | 33 |
| BBD026 | 6 | BGG003 | 12 | BJJ005 | 17 | BPB004 | 22 | BPL009 | 28 | BYF026 | 33 |
| BBD027 | 6 | BGG004 | 12 | BJJ006 | 17 | BPB005 | 22 | BPL010 | 28 | BYF027 | 33 |
| BBD028 | 6 | BGG005 | 12 | BJJ007 | 17 | BPB006 | 22 | BPL012 | 28 | BYF028 | 33 |
| BBD029 | 6 | BGG006 | 12 | BJJ008 | 17 | BPB007 | 22 | BPL013 | 28 | BYF029 | 33 |
| BBD030 | 6 | BGG007 | 12 | BJJ009 | 17 | BPB008 | 22 | BPL014 | 29 | BYF030 | 33 |
| BBD031 | 6 | BGG008 | 12 | BJJ010 | 17 | BPB009 | 22 | BPL015 | 29 | BYF031 | 33 |
| BBD032 | 6 | BGG009 | 12 | BJJ011 | 17 | BPB010 | 22 | BPL028 | 28 | BYF032 | 33 |
| BBD033 | 6 | BGG010 | 12 | BJJ012 | 17 | BPB011 | 22 | BRB001 | 29 | BYF033 | 33 |
| BBD034 | 6 | BGG011 | 12 | BJJ013 | 17 | BPB012 | 22 | BRB002 | 29 | BYF034 | 33 |
| BBD035 | 6 | BGG012 | 12 | BJJ014 | 17 | BPB013 | 22 | BRB003 | 29 | BYF035 | 33 |
| BBD036 | 6 | BGG013 | 12 | BJJ015 | 17 | BPB014 | 22 | BRB004 | 29 | BYF036 | 33 |
| BBD037 | 6 | BGG014 | 12 | BJJ016 | 17 | BPB015 | 22 | BRB005 | 29 | BYF037 | 33 |
| BBD038 | 6 | BGG015 | 12 | BJJ017 | 18 | BPB016 | 23 | BRB006 | 29 | BYF038 | 33 |
| BBD039 | 6 | BGG016 | 12 | BJJ018 | 18 | BPB017 | 23 | BRG009 | 29 | BYF039 | 33 |
| BBD040 | 6 | BGG017 | 12 | BJJ019 | 18 | BPB018 | 23 | BRG010 | 29 | BYF040 | 33 |
| BBD041 | 6 | BGG018 | 12 | BJJ020 | 18 | BPB019 | 23 | BRG011 | 29 | BYF041 | 33 |
| BBD042 | 6 | BGG019 | 12 | BJJ021 | 18 | BPB020 | 23 | BRG012 | 29 | BYF042 | 33 |
| BBD043 | 6 | BGG020 | 12 | BJJ022 | 18 | BPB021 | 22 | BRG013 | 29 | BYF043 | 33 |
| BBD044 | 6 | BGG021 | 12 | BJJ023 | 18 | BPB022 | 22 | BRJ001 | 30 | BYF044 | 33 |
| BBD045 | 6 | BGG022 | 12 | BJJ024 | 18 | BPB023 | 22 | BRJ002 | 30 | BYF045 | 33 |
| BBD046 | 6 | BGG023 | 12 | BJJ025 | 18 | BPB024 | 22 | BTB013 | 30 | BYF046 | 33 |
| BBD047 | 6 | BGG024 | 12 | BJJ026 | 18 | BPB025 | 22 | BTB014 | 30 | BYF047 | 33 |
| BBD048 | 6 | BGG025 | 12 | BJJ027 | 18 | BPB026 | 22 | BTB015 | 30 | BYF048 | 33 |
| BBD049 | 6 | BGG026 | 12 | BJJ028 | 18 | BPB027 | 22 | BTB016 | 30 | BYF049 | 33 |
| BBD050 | 6 | BGG027 | 12 | BJJ029 | 18 | BPB028 | 22 | BTB017 | 30 | BYF050 | 33 |
| BBD051 | 6 | BGG028 | 12 | BJJ030 | 18 | BPB029 | 22 | BTB018 | 30 | BYF051 | 33 |
| BBD052 | 6 | BGG029 | 12 | BJJ031 | 18 | BPB030 | 22 | BTB019 | 30 | BYF052 | 33 |
| BBD053 | 6 | BGG030 | 12 | BJL001 | 18 | BPB031 | 22 | BTB028 | 30 | BYF053 | 33 |
| BBD054 | 6 | BGG031 | 12 | BJL002 | 18 | BPB032 | 22 | BTB029 | 30 | BYF054 | 33 |
| BBD055 | 6 | BGG032 | 12 | BJL003 | 18 | BPB033 | 23 | BTB030 | 30 | BYF055 | 33 |
| BBD056 | 6 | BGG033 | 12 | BJL004 | 18 | BPB034 | 23 | BDT001 | 31 | BYF056 | 33 |
| BBD057 | 6 | BGG034 | 12 | BJN008 | 19 | BPB035 | 23 | BDT002 | 31 | BYF057 | 33 |
| BBD058 | 6 | BGG035 | 12 | BJN009 | 19 | BPB036 | 23 | BDT003 | 31 | BYF058 | 33 |
| BBD059 | 6 | BGG036 | 12 | BJQ001 | 19 | BPB037 | 23 | BDT005 | 31 | BYF059 | 33 |
| BBD060 | 6 | BGG037 | 12 | BJQ002 | 19 | BPB038 | 23 | BDT006 | 31 | BYF060 | 33 |
| BBD061 | 6 | BGG038 | 12 | BJQ003 | 19 | BPB041 | 23 | BDT007 | 31 | BYF061 | 33 |
| BBD062 | 6 | BGG039 | 12 | BJQ004 | 19 | BPB042 | 23 | BDT008 | 31 | BYF062 | 33 |
| BBD063 | 6 | BGG040 | 12 | BJQ005 | 19 | BPB043 | 23 | BDT009 | 31 | BYF063 | 33 |
| BBD064 | 6 | BGG041 | 12 | BJQ006 | 19 | BPB044 | 23 | BDT010 | 31 | BYF064 | 33 |
| BBD065 | 6 | BGG042 | 12 | BJQ007 | 19 | BPB045 | 22 | BDT011 | 31 | BYF065 | 33 |
| BBD066 | 6 | BGG043 | 12 | BJQ008 | 19 | BPD001 | 24 | BDT012 | 31 | BYF066 | 32 |
| BBD067 | 6 | BGG044 | 12 | BJQ009 | 19 | BPD002 | 24 | BDT013 | 31 | BYF067 | 32 |
| BBD068 | 6 | BGG045 | 12 | BJQ010 | 19 | BPD003 | 24 | BDT014 | 31 | BYF068 | 32 |
| BBD069 | 6 | BGG046 | 12 | BJQ011 | 19 | BPD004 | 24 | BDT015 | 31 | BYF069 | 32 |
| BBD070 | 6 | BGG047 | 12 | BJQ012 | 19 | BPD005 | 24 | BDT016 | 31 | BYF070 | 32 |
| BBD071 | 6 | BGG048 | 12 | BJQ013 | 19 | BPD006 | 24 | BDT017 | 31 | BYF071 | 32 |
| BBD072 | 6 | BGG049 | 12 | BJQ014 | 19 | BPD007 | 24 | BDT018 | 31 | BYF072 | 32 |
| BBD073 | 6 | BGG050 | 12 | BJQ015 | 19 | BPD008 | 24 | BDT019 | 31 | BYF073 | 32 |
| BBD074 | 6 | BGG051 | 12 | BJQ016 | 19 | BPD009 | 24 | BDT020 | 31 | BYF074 | 32 |
| BBD075 | 6 | BGG052 | 12 | BJQ017 | 19 | BPD010 | 24 | BDT021 | 31 | BYF075 | 32 |
| BBD076 | 6 | BGG053 | 12 | BJQ018 | 19 | BPD011 | 24 | BDT022 | 31 | BYF076 | 32 |
| BBD077 | 6 | BGG054 | 12 | BJQ019 | 19 | BPD013 | 24 | BDT023 | 31 |        |    |
| BBD078 | 6 | BGG055 | 12 | BJQ020 | 19 | BPD014 | 24 | BDT024 | 31 |        |    |
| BBD079 | 6 | BGG056 | 12 | BJQ021 | 19 | BPD015 | 24 | BDT025 | 31 |        |    |
| BBD080 | 6 | BGG057 | 12 | BJQ022 | 19 | BPD016 | 24 | BDT026 | 31 |        |    |
| BBD081 | 6 | BGG058 | 12 | BJQ023 | 19 | BPD017 | 24 | BDT027 | 31 |        |    |
| BBD082 | 6 | BGG059 | 12 | BJQ024 | 19 | BPD018 | 24 | BDT028 | 31 |        |    |
| BBD083 | 6 | BGG060 | 12 | BJQ025 | 19 | BPD019 | 24 | BDT029 | 31 |        |    |
| BBD084 | 6 | BGG061 | 12 | BJQ026 | 19 | BPD020 | 24 | BDT030 | 31 |        |    |
| BBD085 | 6 | BGG062 | 12 | BJQ027 | 19 | BPD021 | 24 | BDT031 | 31 |        |    |
| BBD086 | 6 | BGG063 | 12 | BJQ028 | 19 |        |    |        |    |        |    |
| BBD087 | 6 | BGG064 | 12 | BJQ029 | 19 |        |    |        |    |        |    |
| BBD088 | 6 | BGG065 | 12 | BJQ030 | 19 |        |    |        |    |        |    |
| BBD089 | 6 | BGG066 | 12 | BJQ031 | 19 |        |    |        |    |        |    |
| BBD090 | 6 | BGG067 | 12 | BJQ032 | 19 |        |    |        |    |        |    |
| BBD091 | 6 | BGG068 | 12 | BJQ033 | 19 |        |    |        |    |        |    |
| BBD092 | 6 | BGG069 | 12 | BJQ034 | 19 |        |    |        |    |        |    |
| BBD093 | 6 | BGG070 | 12 | BJQ035 | 19 |        |    |        |    |        |    |
| BBD094 | 6 | BGG071 | 12 | BJQ036 | 19 |        |    |        |    |        |    |
| BBD095 | 6 | BGG072 | 12 | BJQ037 | 19 |        |    |        |    |        |    |
| BBD096 | 6 | BGG073 | 12 | BJQ038 | 19 |        |    |        |    |        |    |
| BBD097 | 6 | BGG074 | 12 | BJQ039 | 19 |        |    |        |    |        |    |
| BBD098 | 6 | BGG075 | 12 | BJQ040 | 19 |        |    |        |    |        |    |
| BBD099 | 6 | BGG076 | 12 | BJQ041 | 19 |        |    |        |    |        |    |
| BBD100 | 6 | BGG077 | 12 | BJQ042 | 19 |        |    |        |    |        |    |
| BBD101 | 6 | BGG078 | 12 | BJQ043 | 19 |        |    |        |    |        |    |
| BBD102 | 6 | BGG079 | 12 | BJQ044 | 19 |        |    |        |    |        |    |
| BBD103 | 6 | BGG080 | 12 | BJQ045 | 19 |        |    |        |    |        |    |
| BBD104 | 6 | BGG081 | 12 | BJQ046 | 19 |        |    |        |    |        |    |
| BBD105 | 6 | BGG082 | 12 | BJQ047 | 19 |        |    |        |    |        |    |
| BBD106 | 6 | BGG083 | 12 | BJQ048 | 19 |        |    |        |    |        |    |
| BBD107 | 6 | BGG084 | 12 | BJQ049 | 19 |        |    |        |    |        |    |
| BBD108 | 6 | BGG085 | 12 | BJQ050 | 19 |        |    |        |    |        |    |
| BBD109 | 6 | BGG086 | 12 | BJQ051 | 19 |        |    |        |    |        |    |
| BBD110 | 6 | BGG087 | 12 | BJQ052 | 19 |        |    |        |    |        |    |
| BBD111 | 6 | BGG088 | 12 | BJQ053 | 19 |        |    |        |    |        |    |
| BBD112 | 6 | BGG089 | 12 | BJQ054 | 19 |        |    |        |    |        |    |
| BBD113 | 6 | BGG090 | 12 | BJQ055 | 19 |        |    |        |    |        |    |
| BBD114 | 6 | BGG091 | 12 | BJQ056 | 19 |        |    |        |    |        |    |
| BBD115 | 6 | BGG092 | 12 | BJQ057 | 19 |        |    |        |    |        |    |
| BBD116 | 6 | BGG093 | 12 | BJQ058 | 19 |        |    |        |    |        |    |
| BBD117 | 6 |        |    |        |    |        |    |        |    |        |    |



# C

beakers, flasks  
and other  
containers

|        |    |        |    |        |    |        |    |        |    |
|--------|----|--------|----|--------|----|--------|----|--------|----|
| CBB001 | 36 | CCL002 | 39 | CGJ052 | 48 | CNB011 | 54 | CPC007 | 57 |
| CBB002 | 36 | CCL003 | 39 | CGJ053 | 48 | CNB012 | 54 | CPC008 | 57 |
| CBB003 | 36 | CCL004 | 39 | CGJ054 | 48 | CNB013 | 54 | CPC009 | 57 |
| CBB004 | 36 | CDB001 | 40 | CGJ055 | 48 | CNB014 | 54 | CPC010 | 57 |
| CBB005 | 36 | CDB002 | 40 | CGL001 | 49 | CNB015 | 54 | CPC011 | 57 |
| CBB006 | 36 | CDB003 | 40 | CGL002 | 49 | CNB016 | 54 | CPC012 | 57 |
| CBB007 | 36 | CDB004 | 40 | CGL003 | 49 | CNB017 | 54 | CPC013 | 57 |
| CBB008 | 36 | CDB005 | 40 | CGL004 | 49 | CNB018 | 54 | CPC014 | 57 |
| CBB009 | 36 | CDB006 | 40 | CGL005 | 49 | CNB019 | 54 | CPC015 | 57 |
| CBB010 | 36 | CDB007 | 40 | CGL006 | 49 | CNB020 | 54 | CPC016 | 57 |
| CBB011 | 36 | CDB008 | 40 | CGL007 | 49 | CNG001 | 54 | CPC017 | 57 |
| CBB012 | 36 | CDB009 | 40 | CGL008 | 49 | CNG002 | 54 | CPD001 | 58 |
| CBB013 | 36 | CDB010 | 40 | CGL009 | 49 | CNG003 | 54 | CPD002 | 58 |
| CBB014 | 36 | CDB011 | 40 | CGL010 | 49 | CNG004 | 54 | CPD003 | 58 |
| CBB015 | 36 | CDB012 | 40 | CGL011 | 49 | CNG005 | 54 | CPD004 | 58 |
| CBB016 | 36 | CDB013 | 40 | CGL012 | 49 | CNG006 | 54 | CPD005 | 58 |
| CBB017 | 36 | CDB014 | 40 | CGL013 | 49 | CNG007 | 54 | CPD006 | 58 |
| CBB018 | 36 | CDB015 | 40 | CGL014 | 49 | CNG008 | 54 | CPD007 | 58 |
| CBB019 | 36 | CDB016 | 40 | CGL015 | 49 | CNG009 | 54 | CPD008 | 58 |
| CBB020 | 36 | CDB017 | 40 | CGL019 | 49 | CNG010 | 54 | CPD009 | 58 |
| CBC009 | 36 | CDB018 | 40 | CGL020 | 50 | CNG011 | 54 | CPD010 | 58 |
| CBC010 | 36 | CDB019 | 40 | CGL021 | 50 | CNG012 | 54 | CPD011 | 58 |
| CBC011 | 36 | CDB020 | 40 | CGL022 | 50 | CNG013 | 54 | CPD012 | 58 |
| CBC012 | 36 | CDB021 | 40 | CGN011 | 50 | CNG014 | 54 | CPF001 | 59 |
| CBC013 | 36 | CDB022 | 40 | CGN012 | 50 | CNG015 | 55 | CPF002 | 59 |
| CBC014 | 36 | CDB023 | 40 | CGN013 | 50 | CNG016 | 55 | CPF003 | 59 |
| CBC015 | 37 | CDB024 | 40 | CHB001 | 50 | CNG017 | 55 | CPF004 | 59 |
| CBC016 | 37 | CDB025 | 40 | CHB002 | 50 | CNG018 | 55 | CPF005 | 59 |
| CBC017 | 37 | CDB026 | 40 | CHB003 | 50 | CNG019 | 55 | CPF006 | 59 |
| CBC018 | 37 | CDB027 | 40 | CHB004 | 50 | CNG020 | 55 | CPF007 | 59 |
| CBC019 | 37 | CDB028 | 40 | CHB005 | 50 | CNG021 | 55 | CPF008 | 59 |
| CBC020 | 37 | CDB029 | 40 | CHB006 | 50 | CNG022 | 55 | CPF009 | 59 |
| CBC021 | 37 | CDB030 | 41 | CHB007 | 50 | CNG023 | 55 | CPF010 | 59 |
| CBC022 | 37 | CDB031 | 41 | CHB008 | 50 | CNG024 | 55 | CPF011 | 59 |
| CBC023 | 37 | CDB032 | 41 | CHG001 | 50 | CNG025 | 55 | CPF012 | 58 |
| CBC024 | 37 | CDB033 | 41 | CHG002 | 50 | CNG026 | 55 | CPK001 | 59 |
| CBC025 | 37 | CDB034 | 41 | CHG003 | 50 | CNG027 | 55 | CPK002 | 59 |
| CBC026 | 37 | CDB035 | 41 | CHG004 | 50 | CNG028 | 55 | CPK003 | 59 |
| CBC027 | 37 | CDB036 | 41 | CHG005 | 50 | CNG029 | 55 | CPK004 | 59 |
| CBC028 | 37 | CDB037 | 41 | CHG006 | 50 | CNG030 | 55 | CPK005 | 59 |
| CBC029 | 37 | CDB038 | 41 | CHG007 | 50 | CNG031 | 55 | CPK006 | 59 |
| CBC030 | 37 | CDB051 | 40 | CHG008 | 50 | CNG032 | 55 | CPK007 | 59 |
| CBC031 | 37 | CDG001 | 41 | CKD006 | 51 | CNG033 | 55 | CPK008 | 59 |
| CBC032 | 37 | CDG002 | 41 | CKD007 | 51 | CNG034 | 55 | CPK009 | 59 |
| CBC033 | 37 | CDG003 | 41 | CKD008 | 51 | CNG035 | 55 | CPK010 | 59 |
| CBC034 | 37 | CDG004 | 41 | CKD009 | 51 | CNG036 | 55 | CPK011 | 59 |
| CBC035 | 37 | CDG005 | 41 | CKL004 | 51 | CNG037 | 55 | CPK012 | 59 |
| CBC036 | 37 | CDG006 | 41 | CKL005 | 51 | CNG038 | 55 | CPK013 | 59 |
| CBC037 | 37 | CDG007 | 41 | CKL006 | 51 | CNK001 | 55 | CPK014 | 59 |
| CBC038 | 37 | CDJ001 | 41 | CKL007 | 51 | CNK002 | 55 | CPK015 | 59 |
| CBC039 | 37 | CDJ002 | 41 | CKL008 | 51 | CNK003 | 55 | CPL001 | 60 |
| CBC040 | 37 | CDJ003 | 41 | CKL009 | 51 | CNK004 | 55 | CPL002 | 60 |
| CBC041 | 37 | CDJ004 | 41 | CKL010 | 51 | CNK005 | 55 | CPL003 | 60 |
| CBC042 | 37 | CDJ005 | 41 | CKL011 | 51 | CNK006 | 55 | CPL004 | 60 |
| CBC043 | 37 | CDJ006 | 41 | CLD009 | 52 | CNK007 | 55 | CPL005 | 60 |
| CBC044 | 37 | CDJ007 | 41 | CLD010 | 52 | CNK008 | 55 | CPL006 | 60 |
| CBC045 | 37 | CFB001 | 42 | CLD011 | 52 | CNK009 | 55 | CPL007 | 60 |
| CBC046 | 37 | CFB002 | 42 | CLD012 | 52 | CNK010 | 55 | CPL008 | 60 |
| CBC047 | 37 | CFB003 | 42 | CLD013 | 51 | CNK011 | 55 | CPN001 | 60 |
| CBC048 | 37 | CFB004 | 42 | CLD014 | 51 | CNK012 | 55 | CPN002 | 60 |
| CBC049 | 37 | CFB005 | 42 | CLD015 | 51 | CNK013 | 56 | CPN003 | 60 |
| CBC050 | 37 | CFB006 | 42 | CLD016 | 51 | CNK014 | 56 | CPN004 | 60 |
| CBC051 | 37 | CFB007 | 42 | CLD017 | 52 | CNL001 | 56 | CPN005 | 60 |
| CBC052 | 37 | CFB008 | 42 | CLD018 | 52 | CNL002 | 56 |        |    |
| CBC053 | 37 | CFB009 | 42 | CLD019 | 52 | CNL003 | 56 |        |    |
| CBC054 | 37 | CFB010 | 42 | CLG009 | 52 | CNL004 | 56 |        |    |
| CBC055 | 37 | CFB011 | 42 | CLG010 | 52 | CNL005 | 56 |        |    |
| CBC056 | 37 | CFB012 | 42 | CLG011 | 53 | CNL006 | 56 |        |    |
| CBC057 | 37 | CFB013 | 42 | CLG012 | 53 | CNL007 | 56 |        |    |
| CBC058 | 37 | CFB014 | 42 | CLG013 | 53 | CNL008 | 56 |        |    |
| CBC059 | 37 | CFB015 | 42 | CMB001 | 53 | CNL009 | 56 |        |    |
| CBC060 | 37 | CFB016 | 42 | CMB002 | 53 | CNN001 | 56 |        |    |
| CBC061 | 37 | CFB017 | 42 | CMB003 | 53 | CNN002 | 56 |        |    |
| CBC062 | 37 | CFB018 | 42 | CMB004 | 53 | CNN003 | 56 |        |    |
| CBC063 | 37 | CFB019 | 42 | CMB005 | 53 | CNN004 | 56 |        |    |
| CBC064 | 37 | CFB020 | 42 | CMB006 | 53 | CNN005 | 56 |        |    |
| CBC065 | 37 | CFB021 | 42 | CMB007 | 53 | CPB001 | 57 |        |    |
| CBC066 | 37 | CFB022 | 42 | CMB008 | 53 | CPB002 | 57 |        |    |
| CBC067 | 37 | CFB023 | 42 | CMB009 | 53 | CPB003 | 57 |        |    |
| CBC068 | 37 | CFB024 | 43 | CMB010 | 53 | CPB004 | 57 |        |    |
| CBC069 | 37 | CFB025 | 43 | CMB011 | 53 | CPB005 | 57 |        |    |
| CBC070 | 37 | CFB026 | 43 | CMB012 | 53 | CPB006 | 57 |        |    |
| CBC071 | 37 | CFB027 | 43 | CMB013 | 53 | CPB007 | 57 |        |    |
| CBC072 | 37 | CFB028 | 43 | CMD001 | 53 | CPB008 | 57 |        |    |
| CBC073 | 37 | CFB029 | 43 | CML010 | 54 | CPB009 | 57 |        |    |
| CBC074 | 37 | CFB030 | 43 | CML011 | 54 | CPB010 | 57 |        |    |
| CBC075 | 37 | CFB031 | 43 | CNB001 | 54 | CPB011 | 57 |        |    |
| CBC076 | 37 | CFB032 | 43 | CNB002 | 54 | CPB012 | 57 |        |    |
| CBC077 | 37 | CFB033 | 43 | CNB003 | 54 | CPB013 | 57 |        |    |
| CBC078 | 37 | CFB034 | 43 | CNB004 | 54 | CPB014 | 57 |        |    |
| CBC079 | 37 | CFD001 | 43 | CNB005 | 54 | CPB015 | 57 |        |    |
| CBC080 | 37 | CFD002 | 43 | CNB006 | 54 | CPC001 | 57 |        |    |
| CBC081 | 37 | CFD003 | 43 | CNB007 | 54 | CPC002 | 57 |        |    |
| CBC082 | 37 | CFD004 | 43 | CNB008 | 54 | CPC003 | 57 |        |    |
| CBC083 | 37 | CFD005 | 43 | CNB009 | 54 | CPC004 | 57 |        |    |
| CBC084 | 37 | CFD006 | 43 | CNB010 | 54 | CPC005 | 57 |        |    |
| CBC085 | 37 | CFD007 | 43 |        |    | CPC006 | 57 |        |    |
| CBC086 | 37 | CFD008 | 43 |        |    |        |    |        |    |
| CBC087 | 37 | CFD009 | 43 |        |    |        |    |        |    |
| CBC088 | 37 | CFD010 | 43 |        |    |        |    |        |    |
| CBC089 | 37 | CFD011 | 43 |        |    |        |    |        |    |

# D

volumetry

|        |    |
|--------|----|
| DBB001 | 62 |
| DBB002 | 62 |
| DBB003 | 62 |
| DBB004 | 62 |
| DBB005 | 62 |
| DBB006 | 62 |
| DBB007 | 62 |
| DBB008 | 62 |
| DBB009 | 62 |
| DBB010 | 62 |
| DBB011 | 62 |
| DBB012 | 62 |
| DBB013 | 62 |
| DBB014 | 62 |
| DBB015 | 62 |
| DBB016 | 62 |
| DBB017 | 62 |
| DBB018 | 62 |
| DBB019 | 62 |
| DBB020 | 62 |
| DBB021 | 62 |
| DBB022 | 62 |
| DBB023 | 62 |
| DBB024 | 62 |
| DBB025 | 62 |
| DBB026 | 62 |
| DBB027 | 62 |
| DBB028 | 62 |
| DBB029 | 62 |
| DBB030 | 62 |
| DBB031 | 62 |

|        |    |        |    |        |    |        |    |        |    |        |    |
|--------|----|--------|----|--------|----|--------|----|--------|----|--------|----|
| DBB032 | 62 | DGB001 | 65 | DLB010 | 68 | FCM006 | 75 | FFN003 | 81 | FMB017 | 88 |
| DBB033 | 62 | DGB002 | 65 | DLB011 | 68 | FCM007 | 75 | FFN005 | 81 | FMB018 | 88 |
| DBB034 | 62 | DGB003 | 65 | DLB012 | 68 | FCM008 | 75 | FFN006 | 81 | FMB019 | 88 |
| DBB035 | 62 | DGB004 | 65 | DLD001 | 68 | FCM009 | 75 | FHD001 | 81 | FMB020 | 88 |
| DBB036 | 63 | DGB005 | 65 | DNB007 | 69 | FCM010 | 75 | FHD002 | 81 | FMB021 | 88 |
| DBB037 | 63 | DGB006 | 65 | DNB008 | 69 | FCM011 | 75 | FHD003 | 81 | FMB022 | 88 |
| DBB038 | 63 | DGB007 | 65 | DNB009 | 69 | FCM019 | 75 | FHD004 | 81 | FMB023 | 88 |
| DBB039 | 63 | DGB008 | 65 | DNB010 | 69 | FCM020 | 75 | FHD005 | 81 | FMB024 | 88 |
| DBB040 | 63 | DGB009 | 65 | DNB011 | 69 | FCM021 | 75 | FHD006 | 81 | FMD001 | 88 |
| DBB041 | 63 | DGB010 | 65 | DNB012 | 69 | FCM022 | 75 | FHD007 | 81 | FMD002 | 88 |
| DBB042 | 63 | DGB011 | 65 | DNB015 | 69 | FCP001 | 76 | FHD008 | 81 | FMD003 | 89 |
| DBB043 | 63 | DGB012 | 65 | DNB016 | 69 | FCP002 | 76 | FHD009 | 81 | FMD004 | 89 |
| DBB044 | 63 | DGB013 | 65 | DND002 | 70 | FCP003 | 76 | FHD010 | 81 | FMD005 | 89 |
| DBB045 | 62 | DGB014 | 65 | DND003 | 70 | FCP004 | 76 | FHD011 | 81 | FMD006 | 89 |
| DBB046 | 62 | DGB015 | 65 | DND004 | 70 | FCP005 | 76 | FHN001 | 81 | FMD007 | 89 |
| DBB047 | 62 | DGB016 | 65 | DND005 | 69 | FCP006 | 76 | FHN002 | 81 | FMD008 | 89 |
| DBB048 | 62 | DGB017 | 65 | DND006 | 69 | FCP007 | 76 | FHN003 | 81 | FMG001 | 89 |
| DBB049 | 62 | DGB018 | 65 | DND007 | 69 | FCP008 | 76 | FHN004 | 81 | FMG002 | 89 |
| DBB050 | 62 | DGB019 | 65 | DNM001 | 70 | FCP009 | 76 | FKB005 | 82 | FMG003 | 89 |
| DBB051 | 62 | DGB020 | 65 | DNM002 | 70 | FCP010 | 76 | FKB006 | 82 | FMJ001 | 90 |
| DBB052 | 62 | DGD001 | 66 | DNM003 | 70 | FCP011 | 76 | FKB007 | 82 | FMJ002 | 90 |
| DBB053 | 62 | DGD002 | 66 | DNM004 | 70 | FCP012 | 76 | FKB008 | 82 | FMJ003 | 90 |
| DBG001 | 63 | DGD003 | 66 | DNM005 | 70 | FCP013 | 76 | FKB009 | 82 | FMJ004 | 90 |
| DBG002 | 63 | DGD005 | 66 | DNM006 | 70 | FCP014 | 77 | FKB010 | 82 | FMJ005 | 90 |
| DBG003 | 63 | DGG001 | 66 | DNM007 | 70 | FCP015 | 77 | FKB011 | 82 | FMJ006 | 90 |
| DBG004 | 63 | DGG002 | 66 | DNM008 | 70 | FCP016 | 77 | FKB012 | 82 | FMJ007 | 90 |
| DBG005 | 63 | DGG003 | 66 | DNM009 | 70 | FCP017 | 77 | FKB015 | 82 | FMJ008 | 90 |
| DBG006 | 63 | DGG004 | 66 | DNM010 | 70 | FCP018 | 77 | FKB016 | 82 | FMJ009 | 90 |
| DBG007 | 63 | DGG005 | 66 | DNM011 | 70 | FCP019 | 77 | FKB017 | 82 | FMJ010 | 90 |
| DBG008 | 63 | DGG006 | 66 | DNM012 | 70 | FCP020 | 77 | FKB018 | 82 | FMJ011 | 90 |
| DBG009 | 63 | DGG007 | 66 | DNM013 | 70 | FCR001 | 77 | FKB019 | 82 | FMJ012 | 90 |
| DBG010 | 63 | DGG008 | 66 | DNM014 | 70 | FCR002 | 77 | FKB020 | 83 | FMJ013 | 90 |
| DBG011 | 63 | DGG009 | 66 |        |    | FCR003 | 77 | FKB021 | 83 | FMJ014 | 90 |
| DBG012 | 63 | DGG010 | 66 |        |    | FCR004 | 77 | FKB022 | 83 | FML002 | 90 |
| DBG013 | 63 | DGG011 | 66 |        |    | FCR009 | 77 | FKB023 | 83 | FML003 | 90 |
| DBG014 | 63 | DGG012 | 66 |        |    | FCR010 | 77 | FKB024 | 83 | FML004 | 90 |
| DBG015 | 63 | DGJ001 | 66 |        |    | FCR011 | 77 | FKB025 | 83 | FML005 | 91 |
| DBG016 | 63 | DGJ002 | 66 |        |    | FCR012 | 77 | FKB026 | 83 | FML006 | 91 |
| DBG017 | 63 | DGJ003 | 66 |        |    | FCV001 | 78 | FKB027 | 83 | FML007 | 91 |
| DBG018 | 63 | DGJ004 | 66 |        |    | FCV002 | 78 | FKB028 | 83 | FML008 | 91 |
| DBJ001 | 63 | DGJ005 | 66 |        |    | FCV003 | 78 | FKB029 | 83 | FML009 | 91 |
| DBJ002 | 63 | DGJ006 | 66 |        |    | FCV004 | 78 | FKB030 | 84 | FML010 | 91 |
| DBJ003 | 63 | DGJ007 | 66 |        |    | FCV005 | 78 | FKB031 | 84 | FML011 | 92 |
| DBJ004 | 63 | DGJ008 | 66 |        |    | FCV006 | 78 | FKB032 | 84 | FML012 | 92 |
| DBJ005 | 63 | DGJ009 | 66 |        |    | FCV008 | 78 | FKB033 | 84 | FML013 | 92 |
| DBJ006 | 63 | DGJ010 | 66 |        |    | FCY002 | 78 | FKB034 | 84 | FML014 | 92 |
| DBJ007 | 63 | DJB001 | 66 |        |    | FCY003 | 78 | FKB035 | 84 | FML015 | 91 |
| DBJ008 | 63 | DJB002 | 66 |        |    | FCY004 | 78 | FKD001 | 84 | FML016 | 91 |
| DBB001 | 64 | DJB003 | 66 |        |    | FCY005 | 78 | FKD002 | 84 | FML017 | 91 |
| DBB002 | 64 | DJB004 | 66 |        |    | FCY006 | 78 | FKG001 | 84 | FMN001 | 92 |
| DBB003 | 64 | DJB005 | 66 |        |    | FCY007 | 78 | FKG002 | 84 | FMN004 | 92 |
| DBB004 | 64 | DJB006 | 66 |        |    | FCY008 | 78 | FKG005 | 84 | FMN005 | 92 |
| DBB005 | 64 | DJB007 | 66 |        |    | FCY009 | 78 | FKG006 | 84 | FMN006 | 92 |
| DBB006 | 64 | DJB008 | 66 |        |    | FCY010 | 78 | FKG007 | 84 | FMN007 | 92 |
| DBB007 | 64 | DJB009 | 66 |        |    | FCY011 | 78 | FKG009 | 84 | FMN009 | 92 |
| DBB008 | 64 | DJD001 | 67 |        |    | FCY012 | 78 | FKL001 | 85 | FMN010 | 92 |
| DBB009 | 64 | DJD002 | 67 |        |    | FCY013 | 78 | FKL002 | 85 | FMN011 | 92 |
| DBB010 | 64 | DJD003 | 67 |        |    | FCY014 | 78 | FKL003 | 85 | FMN012 | 92 |
| DBB011 | 64 | DJD004 | 67 |        |    | FCY015 | 78 | FKL004 | 85 | FMN013 | 92 |
| DBB012 | 64 | DJD005 | 67 |        |    | FCY016 | 78 | FKL005 | 85 | FMN014 | 92 |
| DBB013 | 64 | DJD006 | 67 |        |    | FCY018 | 78 | FKL006 | 85 | FMN015 | 92 |
| DBB014 | 64 | DJG001 | 67 |        |    | FCY019 | 78 | FKN001 | 85 | FMN016 | 92 |
| DBB015 | 64 | DJG002 | 67 |        |    | FFB001 | 78 | FKN002 | 85 | FMN018 | 92 |
| DBB016 | 64 | DJG003 | 67 |        |    | FFB002 | 78 | FKN003 | 85 | FMN019 | 92 |
| DBB017 | 64 | DJG004 | 67 |        |    | FFB003 | 78 | FKN004 | 85 | FMN020 | 92 |
| DBB018 | 64 | DJG005 | 67 |        |    | FFB004 | 78 | FKN005 | 85 | FMN021 | 93 |
| DBB019 | 64 | DJG006 | 67 |        |    | FFB005 | 78 | FKN007 | 85 | FMN022 | 93 |
| DBB020 | 64 | DJG007 | 67 |        |    | FFB006 | 79 | FKN008 | 85 | FMN023 | 93 |
| DBB021 | 64 | DJG008 | 67 |        |    | FFB007 | 79 | FKP001 | 85 | FMN024 | 93 |
| DBB022 | 64 | DJG009 | 67 |        |    | FFB008 | 79 | FKP002 | 86 | FMN025 | 93 |
| DBB023 | 64 | DJJ001 | 67 |        |    | FFD001 | 79 | FKP003 | 86 | FMN026 | 93 |
| DBB024 | 64 | DJJ002 | 67 |        |    | FFD002 | 79 | FKP004 | 86 | FMN028 | 93 |
| DBB025 | 64 | DJJ003 | 67 |        |    | FFD003 | 79 | FKP005 | 86 | FMN029 | 93 |
| DBB026 | 64 | DJJ004 | 67 |        |    | FFG001 | 79 | FKP006 | 86 | FMN030 | 93 |
| DBB027 | 64 | DJJ005 | 67 |        |    | FFG002 | 79 | FKR001 | 86 | FMQ001 | 94 |
| DBB028 | 64 | DJJ006 | 67 |        |    | FFG003 | 79 | FKR002 | 86 | FMQ002 | 94 |
| DBB029 | 64 | DJJ007 | 67 |        |    | FFG004 | 79 | FKW001 | 86 | FMQ003 | 94 |
| DBB030 | 64 | DJP001 | 67 |        |    | FFJ002 | 79 | FKW002 | 86 | FMQ004 | 94 |
| DBB031 | 64 | DJP002 | 67 |        |    | FFJ003 | 80 | FKW003 | 86 | FMQ005 | 94 |
| DBB032 | 64 | DJP003 | 67 |        |    | FFJ004 | 80 | FKW004 | 86 | FMQ006 | 94 |
| DBB033 | 64 | DJP004 | 67 |        |    | FFJ005 | 80 | FMB001 | 87 | FMQ007 | 94 |
| DBB034 | 64 | DJP005 | 67 |        |    | FFJ006 | 80 | FMB002 | 87 | FZB001 | 95 |
| DBB035 | 64 | DJP006 | 67 |        |    | FFJ007 | 79 | FMB003 | 87 | FZB002 | 95 |
| DBB036 | 65 | DJP007 | 67 |        |    | FFL001 | 80 | FMB004 | 87 | FZB003 | 95 |
| DBB037 | 65 | DJP008 | 67 |        |    | FFL002 | 80 | FMB005 | 87 | FZB004 | 95 |
| DBB038 | 65 | DJP009 | 67 |        |    | FFL003 | 80 | FMB006 | 87 | FZD002 | 95 |
| DBB039 | 65 | DJR001 | 68 |        |    | FFL004 | 80 | FMB007 | 87 | FZD003 | 95 |
| DBB040 | 65 | DJR002 | 68 |        |    | FFL005 | 80 | FMB008 | 87 | FZG001 | 95 |
| DBB041 | 65 | DJR003 | 68 |        |    | FFL006 | 80 | FMB009 | 87 | FZG002 | 95 |
| DBB042 | 65 | DJR004 | 68 |        |    | FFL007 | 80 | FMB010 | 87 | FZG003 | 95 |
| DBB043 | 65 | DJR005 | 68 |        |    | FFL009 | 80 | FMB011 | 87 | FZG004 | 95 |
| DBB044 | 65 | DJR006 | 68 |        |    | FFL010 | 80 | FMB012 | 88 |        |    |
| DBB045 | 65 | DJR007 | 68 |        |    | FFL011 | 80 | FMB013 | 88 |        |    |
| DBB046 | 65 | DJR008 | 68 |        |    | FFL012 | 80 | FMB014 | 88 |        |    |
| DDW001 | 65 | DLB001 | 68 |        |    | FFN001 | 81 | FMB015 | 88 |        |    |
| DDW002 | 65 | DLB002 | 68 |        |    | FFN002 | 81 | FMB016 | 88 |        |    |

**F**  
laboratory  
assemblies and  
tools

|        |    |
|--------|----|
| FCB001 | 72 |
| FCB002 | 72 |
| FCB003 | 72 |
| FCB007 | 72 |
| FCB008 | 72 |
| FCB009 | 72 |
| FCB010 | 72 |
| FCB011 | 72 |
| FCB012 | 72 |
| FCB013 | 72 |
| FCB015 | 72 |
| FCB016 | 72 |
| FCB017 | 72 |
| FCD001 | 72 |
| FCD002 | 72 |
| FCD003 | 72 |
| FCG001 | 73 |
| FCG002 | 73 |
| FCG003 | 73 |
| FCG004 | 73 |
| FCG005 | 73 |
| FCG006 | 73 |
| FCG007 | 73 |
| FCG008 | 73 |
| FCG009 | 73 |
| FCG010 | 73 |
| FCG011 | 73 |
| FCG012 | 73 |
| FCG013 | 73 |
| FCG014 | 73 |
| FCG015 | 73 |
| FCJ001 | 74 |
| FCJ002 | 74 |
| FCJ003 | 74 |
| FCJ004 | 74 |
| FCJ005 | 74 |
| FCJ006 | 74 |
| FCJ007 | 74 |
| FCJ008 | 74 |
| FCJ009 | 74 |
| FCJ010 | 74 |
| FCJ011 | 74 |
| FCJ012 | 74 |
| FCJ013 | 74 |
| FCJ014 | 74 |
| FCJ015 | 74 |
| FCK001 | 74 |
| FCK002 | 75 |
| FCK003 | 75 |
| FCM001 | 75 |
| FCM002 | 75 |
| FCM003 | 75 |
| FCM004 | 75 |
| FCM005 | 75 |

## G

## centrifuges

|        |     |
|--------|-----|
| GBC001 | 99  |
| GBC002 | 99  |
| GBC003 | 99  |
| GBF001 | 99  |
| GBF003 | 100 |
| GBF006 | 100 |
| GBF007 | 100 |
| GBF008 | 100 |
| GBF010 | 101 |
| GBK001 | 101 |
| GBK002 | 101 |
| GBK003 | 101 |
| GBK004 | 101 |
| GBK005 | 101 |
| GBK006 | 101 |
| GBK007 | 101 |
| GBK008 | 102 |
| GBK009 | 102 |
| GBK010 | 102 |
| GBK011 | 102 |
| GBK012 | 102 |
| GDC001 | 102 |
| GDC002 | 102 |
| GDC003 | 102 |
| GDC004 | 102 |
| GDC005 | 103 |
| GDF001 | 103 |
| GDF002 | 103 |
| GGC001 | 103 |
| GGC002 | 103 |
| GGF001 | 104 |
| GGF002 | 104 |
| GJC002 | 104 |
| GJC006 | 104 |
| GJK001 | 104 |
| GJK002 | 104 |
| GJK003 | 104 |
| GJK004 | 104 |
| GJK005 | 104 |
| GLC001 | 104 |
| GLF001 | 105 |
| GLH001 | 105 |
| GLH002 | 105 |
| GLH003 | 105 |
| GLH004 | 105 |
| GLH005 | 105 |
| GLH006 | 105 |
| GLH007 | 105 |
| GNCO01 | 107 |
| GNP001 | 107 |
| GNP002 | 107 |
| GNP003 | 107 |
| GNP004 | 107 |
| GNP005 | 107 |
| GNP006 | 107 |
| GNP007 | 107 |
| GNP008 | 108 |
| GNP009 | 108 |
| GNP010 | 108 |

## H

## optical equipments

|        |     |
|--------|-----|
| HBB003 | 110 |
| HBB010 | 110 |
| HBB011 | 110 |
| HBC002 | 111 |
| HBC006 | 112 |
| HBC007 | 112 |
| HBC008 | 112 |
| HBC009 | 112 |
| HBC010 | 112 |
| HBC011 | 112 |
| HBC013 | 113 |
| HBC014 | 113 |
| HBC015 | 111 |
| HBC016 | 111 |
| HBD001 | 113 |
| HBD002 | 113 |
| HBD003 | 114 |

|        |     |
|--------|-----|
| HBF001 | 114 |
| HBG001 | 115 |
| HBG002 | 115 |
| HBH004 | 116 |
| HBH005 | 116 |
| HBH006 | 117 |
| HBJ001 | 117 |
| HBJ002 | 117 |
| HBK001 | 118 |
| HBK002 | 118 |
| HBK003 | 118 |
| HBK004 | 119 |
| HBK005 | 119 |
| HBL001 | 120 |
| HBL002 | 120 |
| HBL003 | 120 |
| HBL004 | 120 |
| HBL005 | 120 |
| HBM001 | 120 |
| HBM002 | 120 |
| HBN001 | 120 |
| HBN003 | 120 |
| HBP001 | 121 |
| HBP002 | 121 |
| HBP003 | 121 |
| HBP004 | 121 |
| HBP005 | 121 |
| HBP006 | 121 |
| HBP007 | 121 |
| HBP008 | 121 |
| HBP009 | 121 |
| HBP010 | 121 |
| HBP011 | 121 |
| HBP012 | 121 |
| HBP013 | 121 |
| HBP014 | 121 |
| HBP015 | 121 |
| HBP016 | 121 |
| HBP017 | 121 |
| HBP018 | 121 |
| HBP019 | 121 |
| HBP020 | 121 |
| HBP021 | 121 |
| HBP022 | 121 |
| HBP023 | 121 |
| HBP024 | 121 |
| HBP025 | 121 |
| HBP026 | 121 |
| HBP027 | 121 |
| HBQ001 | 121 |
| HBQ002 | 121 |
| HBQ003 | 121 |
| HBQ004 | 121 |
| HBQ005 | 121 |
| HBQ006 | 121 |
| HBQ007 | 121 |
| HBQ008 | 121 |
| HBQ009 | 121 |
| HBQ010 | 121 |
| HBR002 | 122 |
| HBR003 | 122 |
| HBR004 | 122 |
| HBR005 | 122 |
| HBR006 | 121 |
| HBR007 | 121 |
| HBR008 | 122 |
| HBR009 | 122 |
| HBR010 | 121 |
| HBR011 | 122 |
| HBR012 | 122 |
| HBR013 | 122 |
| HBR014 | 121 |
| HBR015 | 122 |
| HBR016 | 122 |
| HBR017 | 122 |
| HBR018 | 121 |
| HBR019 | 121 |
| HBR020 | 122 |
| HBR021 | 122 |
| HBR022 | 122 |
| HBR023 | 122 |
| HBR024 | 122 |
| HDB002 | 122 |
| HDB004 | 122 |
| HDD006 | 123 |
| HDD007 | 124 |
| HDD008 | 124 |
| HDD009 | 124 |
| HDD010 | 124 |
| HDD011 | 123 |
| HDD012 | 123 |
| HDG001 | 125 |
| HDG002 | 125 |
| HDG003 | 125 |
| HDG004 | 125 |
| HDG005 | 125 |

|        |     |
|--------|-----|
| HDG006 | 125 |
| HDG007 | 125 |
| HDG008 | 125 |
| HDG009 | 125 |
| HDG010 | 125 |
| HDG011 | 125 |
| HDG012 | 125 |
| HDG013 | 125 |
| HDG014 | 125 |
| HDG015 | 125 |
| HDH001 | 125 |
| HDH002 | 125 |
| HDH003 | 125 |
| HDH004 | 125 |
| HDH005 | 125 |
| HDH006 | 125 |
| HDH007 | 125 |
| HDH008 | 125 |
| HDH009 | 125 |
| HDH010 | 125 |
| HDH011 | 125 |
| HDJ001 | 125 |
| HDJ002 | 125 |
| HDJ003 | 125 |
| HDJ004 | 125 |
| HDJ005 | 125 |
| HDJ006 | 125 |
| HDK001 | 126 |
| HDK002 | 126 |
| HDK003 | 126 |
| HDK004 | 126 |
| HDK005 | 126 |
| HDK006 | 126 |
| HDK007 | 126 |
| HDK008 | 126 |
| HDK009 | 126 |
| HDK012 | 126 |
| HDK013 | 126 |
| HDK014 | 126 |
| HDK015 | 126 |
| HDK017 | 126 |
| HDK019 | 126 |
| HGB002 | 126 |
| HGB003 | 126 |
| HGB004 | 126 |
| HGB005 | 126 |
| HJB001 | 127 |
| HJB002 | 127 |
| HJB003 | 127 |
| HJB004 | 128 |
| HJB005 | 128 |
| HJB006 | 128 |
| HJD001 | 128 |
| HJD002 | 129 |
| HJD003 | 129 |
| HJD004 | 130 |
| HJD005 | 130 |
| HJD006 | 130 |
| HJD007 | 131 |
| HJG001 | 131 |
| HJG002 | 132 |
| HJG003 | 132 |
| HJG004 | 132 |
| HJG005 | 132 |
| HJG006 | 132 |
| HJG007 | 132 |
| HJH001 | 132 |
| HJH002 | 132 |
| HJH003 | 132 |
| HJH004 | 132 |
| HJH005 | 132 |
| HJH006 | 132 |
| HJH007 | 132 |
| HJH008 | 133 |
| HJH009 | 133 |
| HJH010 | 132 |
| HJH017 | 132 |
| HJH018 | 132 |
| HJH019 | 132 |
| HJH020 | 133 |
| HJH021 | 132 |
| HJH022 | 132 |
| HJH023 | 132 |
| HJH024 | 132 |
| HJK001 | 133 |
| HJK002 | 133 |
| HJK003 | 133 |
| HJK004 | 133 |
| HJK005 | 133 |
| HJK006 | 133 |
| HJK007 | 133 |
| HJK008 | 133 |
| HJK009 | 133 |
| HJK010 | 133 |
| HJK011 | 133 |
| HJK012 | 134 |

|        |     |
|--------|-----|
| HJK013 | 134 |
| HJK014 | 134 |
| HJK015 | 134 |
| HJK016 | 134 |
| HJK017 | 134 |
| HJL001 | 135 |
| HJL002 | 135 |
| HJL003 | 135 |
| HJL004 | 135 |
| HJL005 | 135 |
| HJL006 | 135 |
| HJL007 | 135 |
| HJL008 | 135 |
| HJL009 | 135 |
| HJL010 | 135 |
| HJL011 | 135 |
| HJL012 | 136 |
| HJL013 | 136 |
| HJL014 | 136 |
| HJL015 | 136 |
| HJM001 | 136 |
| HMB001 | 137 |
| HMB002 | 137 |
| HMB003 | 137 |
| HMB004 | 137 |
| HMB005 | 138 |
| HMF001 | 138 |
| HMF002 | 138 |
| HMF003 | 138 |
| HMF004 | 138 |
| HMF005 | 138 |
| HMF006 | 138 |
| HMG001 | 138 |
| HMG002 | 138 |
| HMG003 | 138 |
| HMG004 | 138 |
| HMG005 | 138 |
| HMG006 | 138 |
| HPB001 | 139 |
| HPB002 | 139 |
| HPD001 | 140 |
| HPD002 | 140 |
| HPD003 | 140 |
| HPD004 | 140 |
| HPD005 | 141 |
| HPD006 | 141 |
| HPD008 | 141 |
| HPD009 | 142 |
| HPD010 | 142 |
| HPD011 | 142 |
| HPD012 | 140 |
| HPD013 | 140 |
| HPD014 | 140 |
| HPD015 | 140 |
| HPD016 | 141 |
| HPD017 | 141 |
| HPD019 | 141 |
| HPD020 | 142 |
| HPD021 | 142 |
| HPF001 | 142 |
| HPF002 | 142 |
| HPF004 | 142 |
| HPF005 | 142 |
| HPF007 | 142 |
| HPH001 | 143 |
| HPH002 | 143 |
| HPH003 | 143 |
| HPH004 | 143 |
| HPH005 | 143 |
| HPH007 | 144 |
| HPK001 | 144 |
| HPK002 | 144 |
| HPK005 | 144 |
| HPK006 | 145 |
| HPM001 | 145 |
| HPM002 | 145 |
| HPM003 | 145 |
| HPP001 | 145 |
| HPP002 | 146 |
| HPP003 | 146 |
| HPP004 | 146 |
| HPP005 | 146 |
| HPP006 | 146 |
| HPP007 | 146 |
| HPP008 | 146 |
| HPP009 | 146 |
| HRB008 | 148 |
| HRB010 | 148 |
| HRB011 | 148 |
| HRD001 | 148 |
| HRD002 | 148 |
| HRG003 | 148 |
| HRG004 | 148 |

## J

heating  
cooling

|        |     |
|--------|-----|
| JBB001 | 150 |
| JBB002 | 150 |
| JBB003 | 150 |
| JBB004 | 150 |
| JBB005 | 150 |
| JBD001 | 150 |
| JBD002 | 150 |
| JBD003 | 150 |
| JBD004 | 150 |
| JBD005 | 150 |
| JBD006 | 150 |
| JBD007 | 150 |
| JBD008 | 150 |
| JBD009 | 150 |
| JBG001 | 151 |
| JBG002 | 151 |
| JBG003 | 151 |
| JBG004 | 151 |
| JBG005 | 151 |
| JBG006 | 151 |
| JBG007 | 151 |
| JDB001 | 151 |
| JDD001 | 151 |
| JDD002 | 151 |
| JDD003 | 151 |
| JDD004 | 151 |
| JDD005 | 152 |
| JDD006 | 152 |
| JDG001 | 152 |
| JDS001 | 152 |
| JDS002 | 153 |
| JDS003 | 153 |
| JDS004 | 153 |
| JDS005 | 153 |
| JDS006 | 154 |
| JDV001 | 154 |
| JDV002 | 154 |
| JDV003 | 154 |
| JDV004 | 154 |
| JDV005 | 154 |
| JDV006 | 154 |
| JDV007 | 154 |
| JDV008 | 154 |
| JDV009 | 154 |
| JDV010 | 154 |
| JDV011 | 154 |
| JDV012 | 154 |
| JDV013 | 154 |
| JDV014 | 154 |
| JDV015 | 154 |
| JDV016 | 154 |
| JGB001 | 155 |
| JGB002 | 155 |
| JGB003 | 155 |
| JGB004 | 155 |
| JGB005 | 155 |
| JGB006 | 155 |
| JGB007 | 155 |
| JGB008 | 155 |
| JGD001 | 155 |
| JGD002 | 155 |
| JGD003 | 155 |
| JGD004 | 155 |
| JGD005 | 155 |
| JGD006 | 155 |
| JGD007 | 155 |
| JGD008 | 155 |

## K

measuring  
instruments

|        |     |
|--------|-----|
| KBB001 | 159 |
| KBB002 | 159 |
| KBB003 | 159 |
| KBB004 | 158 |
| KBB005 | 158 |
| KBB006 | 158 |
| KBB007 | 158 |
| KBB008 | 159 |

|        |     |
|--------|-----|
| KBB009 | 159 |
| KBB010 | 159 |
| KBB011 | 159 |
| KBC001 | 159 |
| KBC002 | 159 |
| KBC003 | 159 |
| KBC004 | 159 |
| KBC005 | 160 |
| KBC006 | 160 |
| KBC007 | 160 |
| KBC008 | 160 |
| KBC009 | 160 |
| KBD001 | 160 |
| KBD002 | 160 |
| KBD003 | 160 |
| KBD004 | 161 |
| KBD005 | 161 |
| KBF001 | 161 |
| KBF002 | 161 |
| KBF003 | 161 |
| KBF004 | 161 |
| KBH001 | 162 |
| KBH002 | 162 |
| KBH003 | 162 |
| KBN001 | 162 |
| KBN002 | 162 |
| KBN003 | 162 |
| KBN004 | 162 |
| KBN005 | 162 |
| KBN006 | 162 |
| KBN007 | 162 |
| KBN008 | 162 |
| KBN009 | 162 |
| KBN010 | 162 |
| KBN011 | 162 |
| KBN012 | 162 |
| KBN013 | 162 |
| KBN014 | 162 |
| KBN015 | 162 |
| KBN016 | 162 |
| KBN017 | 162 |
| KBN018 | 162 |
| KBN019 | 162 |
| KBN020 | 162 |
| KBN021 | 162 |
| KBN022 | 162 |
| KBN048 | 163 |
| KBP003 | 163 |
| KBP004 | 163 |
| KBP005 | 163 |
| KBP006 | 163 |
| KBP007 | 163 |
| KBP008 | 163 |
| KBQ003 | 163 |
| KBQ004 | 163 |
| KBQ005 | 163 |
| KBQ006 | 164 |
| KBQ007 | 164 |
| KBR001 | 164 |
| KBR002 | 164 |
| KBR003 | 165 |
| KBR004 | 165 |
| KBS001 | 165 |
| KBS002 | 165 |
| KBS003 | 165 |
| KBS004 | 165 |
| KBS005 | 165 |
| KBS006 | 165 |
| KBS007 | 165 |
| KBS008 | 165 |
| KBS009 | 165 |
| KBS010 | 165 |
| KBS011 | 165 |
| KBS012 | 165 |
| KBS013 | 165 |
| KBS014 | 165 |
| KBS015 | 165 |
| KBT001 | 166 |
| KBT002 | 166 |
| KBT003 | 166 |
| KBT004 | 166 |
| KBT005 | 166 |
| KBT006 | 166 |
| KBT007 | 166 |
| KBT008 | 166 |
| KBT009 | 166 |
| KBT010 | 166 |
| KBT011 | 166 |



|        |     |        |     |
|--------|-----|--------|-----|
| KBV004 | 166 | KJP004 | 175 |
| KBV005 | 166 | KJP005 | 175 |
| KBV006 | 166 | KJR002 | 175 |
| KBV007 | 166 | KJR003 | 176 |
| KBV008 | 166 | KJR006 | 176 |
| KBV009 | 166 | KKB001 | 176 |
| KBV010 | 166 | KKB005 | 176 |
| KBV011 | 166 | KKF001 | 177 |
| KBV012 | 166 | KKF002 | 177 |
| KBV013 | 166 | KLB001 | 177 |
| KBV014 | 166 | KLB002 | 177 |
| KBV015 | 166 | KLB003 | 177 |
| KBV016 | 166 | KLB004 | 177 |
| KBW001 | 167 | KLB005 | 177 |
| KBW002 | 167 | KLB006 | 177 |
| KBW003 | 167 | KLB007 | 177 |
| KBW004 | 167 | KLB008 | 177 |
| KBW005 | 167 | KLB009 | 177 |
| KBW006 | 167 | KLB010 | 177 |
| KBW007 | 167 | KLB011 | 177 |
| KBW008 | 167 | KLB012 | 177 |
| KBW009 | 167 | KLB013 | 177 |
| KBW010 | 167 | KLB014 | 177 |
| KBW011 | 167 | KLD001 | 177 |
| KBW012 | 167 | KLD002 | 177 |
| KBW013 | 167 | KLD003 | 177 |
| KBW014 | 167 | KLD004 | 177 |
| KBW015 | 167 | KLD005 | 177 |
| KBW016 | 167 | KLD006 | 177 |
| KBW017 | 167 | KLD007 | 177 |
| KBW018 | 167 | KLD008 | 177 |
| KBW019 | 167 | KLD009 | 177 |
| KDB001 | 167 | KLD010 | 177 |
| KDB002 | 167 | KLD011 | 177 |
| KDD001 | 168 | KLGO01 | 178 |
| KDD002 | 168 | KLGO02 | 178 |
| KDD004 | 168 | KLGO03 | 178 |
| KDD005 | 169 | KLGO04 | 178 |
| KDD006 | 168 | KLGO05 | 178 |
| KDG001 | 169 | KLGO06 | 178 |
| KDG002 | 169 | KLGO07 | 178 |
| KDG003 | 169 | KLGO08 | 178 |
| KDG005 | 169 | KLGO09 | 178 |
| KDG011 | 170 | KLGO10 | 178 |
| KDJ001 | 170 | KLGO11 | 178 |
| KDJ002 | 170 | KLGO12 | 178 |
| KDJ003 | 170 | KLGO14 | 178 |
| KDJ004 | 170 | KLGO15 | 178 |
| KDJ005 | 170 | KLGO20 | 178 |
| KDJ006 | 170 | KLJ001 | 178 |
| KDJ007 | 170 | KLJ002 | 178 |
| KDJ009 | 170 | KLJ003 | 178 |
| KDJ016 | 170 | KLJ004 | 178 |
| KDJ019 | 170 | KLJ005 | 178 |
| KDJ020 | 170 | KLJ006 | 178 |
| KGB003 | 170 | KLJ007 | 178 |
| KGB004 | 170 | KLL001 | 179 |
| KGB005 | 170 | KLL002 | 179 |
| KGB007 | 170 | KLL003 | 179 |
| KGB008 | 171 | KLL005 | 179 |
| KGB010 | 171 | KLNO03 | 179 |
| KGD001 | 171 | KLNO06 | 179 |
| KGD002 | 172 | KLQ004 | 179 |
| KGD003 | 172 | KNB001 | 179 |
| KGG003 | 173 | KNB002 | 180 |
| KJB003 | 173 | KNB003 | 180 |
| KJB004 | 173 | KNB004 | 180 |
| KJB010 | 173 | KZB001 | 181 |
| KJB011 | 173 | KZB002 | 181 |
| KJB012 | 173 | KZD001 | 182 |
| KJB013 | 173 | KZD002 | 182 |
| KJB014 | 173 | KZD003 | 182 |
| KJB016 | 173 | KZD004 | 182 |
| KJB017 | 173 |        |     |
| KJB018 | 173 |        |     |
| KJB019 | 173 |        |     |
| KJB020 | 173 |        |     |
| KJB021 | 173 |        |     |
| KJB022 | 173 |        |     |
| KJD001 | 173 |        |     |
| KJD002 | 173 |        |     |
| KJD005 | 173 |        |     |
| KJD006 | 173 |        |     |
| KJD007 | 173 |        |     |
| KJD008 | 173 |        |     |
| KJD009 | 173 |        |     |
| KJJ001 | 174 |        |     |
| KJJ002 | 174 |        |     |
| KJM001 | 174 |        |     |
| KJM002 | 174 |        |     |
| KJM003 | 174 |        |     |
| KJM006 | 174 |        |     |
| KJM014 | 175 |        |     |
| KJM015 | 174 |        |     |
| KJP001 | 175 |        |     |
| KJP002 | 175 |        |     |

## L

### stirring

|        |     |
|--------|-----|
| LBB001 | 185 |
| LBB002 | 185 |
| LBB003 | 185 |
| LBB004 | 185 |
| LBD001 | 186 |
| LBD002 | 186 |
| LBD003 | 186 |
| LBD004 | 187 |
| LBD005 | 187 |
| LBG002 | 188 |
| LBG003 | 188 |

|        |     |
|--------|-----|
| LBG004 | 188 |
| LBG005 | 188 |
| LBG010 | 189 |
| LBG011 | 187 |
| LBJ001 | 189 |
| LBM002 | 189 |
| LBM003 | 189 |
| LBM004 | 189 |
| LBM005 | 189 |
| LBM006 | 189 |
| LBM007 | 189 |
| LBM008 | 190 |
| LBM009 | 190 |
| LBM010 | 190 |
| LBM011 | 190 |
| LBM012 | 190 |
| LBM013 | 190 |
| LBM014 | 190 |
| LBM015 | 190 |
| LBM016 | 190 |
| LBM017 | 190 |
| LBM018 | 190 |
| LDB001 | 191 |
| LDB002 | 191 |
| LDB003 | 191 |
| LDB004 | 191 |
| LDB005 | 191 |
| LDB006 | 191 |
| LDB007 | 191 |
| LDB008 | 191 |
| LDB009 | 191 |
| LDB010 | 191 |
| LDB011 | 191 |
| LDB012 | 191 |
| LDB013 | 191 |
| LDB014 | 191 |
| LDD001 | 191 |
| LDD002 | 191 |
| LDD003 | 191 |
| LDD004 | 191 |
| LDD005 | 191 |
| LDD006 | 191 |
| LDD007 | 191 |
| LDD008 | 191 |
| LDD009 | 191 |
| LDG001 | 191 |
| LDG002 | 191 |
| LDG003 | 191 |
| LDG004 | 191 |
| LDG005 | 191 |
| LDG006 | 191 |
| LDG007 | 191 |
| LDP011 | 192 |
| LDP012 | 192 |
| LDR001 | 192 |
| LDR002 | 192 |
| LDR003 | 192 |
| LDR004 | 192 |
| LDR005 | 192 |
| LGB001 | 192 |
| LGB002 | 193 |
| LGB003 | 194 |
| LGD001 | 194 |
| LGG001 | 193 |
| LGG002 | 193 |
| LGG003 | 193 |
| LGG004 | 193 |
| LGG005 | 193 |
| LGG006 | 193 |
| LGG007 | 193 |
| LGG008 | 193 |
| LGG009 | 194 |
| LGG010 | 195 |
| LGG011 | 195 |
| LGG012 | 195 |
| LGG013 | 195 |
| LGG014 | 195 |
| LGG015 | 195 |
| LGG016 | 195 |
| LGG018 | 195 |
| LGG019 | 194 |
| LGG020 | 194 |
| LGG021 | 194 |
| LJB002 | 195 |
| LJB003 | 196 |
| LJD001 | 196 |
| LJD002 | 196 |
| LJG001 | 197 |
| LJG002 | 197 |
| LJG003 | 197 |
| LJG004 | 197 |
| LJJ001 | 197 |
| LJJ002 | 197 |
| LJJ003 | 197 |
| LJJ004 | 197 |
| LJJ005 | 197 |

|        |     |
|--------|-----|
| LJJ006 | 198 |
| LJJ007 | 198 |
| LJJ008 | 198 |
| LJJ009 | 198 |
| LJJ010 | 198 |
| LJL001 | 198 |
| LJL002 | 198 |
| LJN001 | 199 |
| LJN002 | 199 |
| LJN003 | 199 |
| LJN004 | 199 |
| LJQ001 | 200 |
| LJQ002 | 200 |
| LJQ003 | 200 |
| LJS001 | 201 |
| LJS002 | 201 |
| LJS003 | 201 |
| LJS004 | 201 |
| LJS005 | 201 |
| LJS006 | 201 |
| LJS007 | 201 |
| LJS008 | 201 |
| LJS009 | 201 |
| LJS010 | 201 |
| LJS011 | 201 |
| LJS012 | 201 |
| LJS013 | 201 |
| LLB001 | 202 |
| LLB002 | 202 |
| LLB003 | 202 |
| LLB004 | 202 |
| LLB005 | 202 |
| LLB006 | 202 |
| LLF001 | 203 |
| LLF002 | 203 |
| LLF003 | 203 |
| LLF004 | 203 |
| LLF005 | 203 |
| LLF006 | 203 |
| LLF007 | 203 |
| LLF008 | 203 |
| LLF009 | 203 |

## M

### manipulación de líquidos

|        |     |
|--------|-----|
| MBB001 | 206 |
| MBB002 | 206 |
| MBB003 | 206 |
| MBB004 | 206 |
| MBD002 | 206 |
| MBG008 | 206 |
| MBJ007 | 207 |
| MBJ008 | 207 |
| MBJ009 | 207 |
| MBL013 | 207 |
| MBL014 | 207 |
| MBL015 | 207 |
| MBL016 | 207 |
| MBL017 | 207 |
| MBL018 | 207 |
| MBL019 | 207 |
| MBL020 | 207 |
| MDD001 | 208 |
| MDD002 | 208 |
| MDD003 | 208 |
| MDD004 | 208 |
| MDJ052 | 208 |
| MDJ053 | 208 |
| MDJ054 | 208 |
| MDJ055 | 208 |
| MDJ056 | 208 |
| MDJ057 | 208 |
| MDJ058 | 208 |
| MG001  | 209 |
| MG002  | 209 |
| MG003  | 209 |
| MG004  | 209 |
| MG005  | 209 |
| MG006  | 209 |
| MG007  | 209 |
| MG008  | 209 |
| MG009  | 209 |
| MG010  | 208 |
| MG020  | 208 |
| MG021  | 208 |
| MG022  | 208 |
| MG023  | 208 |

|        |     |
|--------|-----|
| MGB024 | 208 |
| MGB025 | 208 |
| MGD001 | 209 |
| MGD002 | 209 |
| MGD003 | 209 |
| MGD004 | 209 |
| MGD005 | 209 |
| MGD006 | 209 |
| MGD007 | 209 |
| MGD008 | 209 |
| MGG001 | 210 |
| MGG002 | 210 |
| MGG003 | 210 |
| MGG004 | 210 |
| MGG005 | 210 |
| MGG006 | 210 |
| MGG007 | 210 |
| MGG008 | 210 |
| MGG009 | 210 |
| MGG010 | 210 |
| MGJ001 | 210 |
| MGM039 | 210 |
| MGM040 | 210 |
| MGM041 | 210 |
| MGM042 | 210 |
| MGT001 | 211 |
| MJB011 | 211 |
| MJJ016 | 211 |
| MJN015 | 211 |
| MJQ009 | 211 |
| MJV017 | 212 |
| MJV018 | 212 |
| MJV019 | 212 |
| MJV020 | 212 |
| MJV021 | 212 |

## P

### filtration and separation

|        |     |
|--------|-----|
| PBB001 | 214 |
| PBB002 | 214 |
| PBB003 | 214 |
| PBB004 | 215 |
| PBB005 | 215 |
| PBC001 | 216 |
| PBC002 | 216 |
| PBC003 | 216 |
| PBD001 | 217 |
| PBD002 | 217 |
| PBD003 | 217 |
| PBD004 | 217 |
| PBD005 | 217 |
| PBD006 | 217 |
| PBD007 | 217 |
| PBD008 | 217 |
| PBD009 | 217 |
| PBD010 | 217 |
| PBD011 | 217 |
| PBD012 | 217 |
| PBD013 | 217 |
| PBD014 | 217 |
| PBD015 | 217 |
| PBD016 | 217 |
| PBD017 | 217 |
| PBD018 | 217 |
| PBD019 | 217 |
| PBD020 | 217 |
| PBD021 | 217 |
| PBF001 | 217 |
| PBF002 | 217 |
| PBF003 | 217 |
| PBF004 | 217 |
| PBF005 | 217 |
| PBF006 | 217 |
| PBF007 | 217 |
| PBG001 | 217 |
| PBG002 | 217 |
| PBG003 | 217 |
| PBG004 | 217 |
| PBH001 | 218 |
| PBH002 | 218 |
| PBH003 | 218 |
| PBH004 | 218 |
| PBH005 | 218 |
| PBH006 | 218 |
| PBH007 | 218 |
| PBH008 | 218 |
| PBH009 | 218 |

|        |     |
|--------|-----|
| PBH010 | 218 |
| PBH011 | 218 |
| PBH012 | 218 |
| PBH013 | 218 |
| PBH014 | 218 |
| PBH015 | 218 |
| PBH016 | 218 |
| PBH017 | 218 |
| PBH018 | 218 |
| PBH019 | 218 |
| PBH030 | 218 |
| PBJ001 | 218 |
| PBJ002 | 218 |
| PBJ003 | 218 |
| PBJ004 | 218 |
| PBJ005 | 218 |
| PBJ006 | 218 |
| PBK001 | 219 |
| PBK002 | 219 |
| PBK003 | 219 |
| PBK004 | 219 |
| PBK005 | 219 |
| PBK006 | 219 |
| PBK007 | 219 |
| PBK008 | 219 |
| PBK009 | 219 |
| PBK010 | 219 |
| PBK011 | 219 |
| PBK012 | 219 |
| PBK013 | 219 |
| PBL001 | 219 |
| PBL002 | 219 |
| PBL003 | 219 |
| PBL004 | 219 |
| PBL005 | 219 |
| PBL006 | 219 |
| PBL007 | 219 |
| PBL008 | 219 |
| PBL009 | 219 |
| PBL010 | 219 |
| PBL011 | 219 |
| PBL012 | 219 |
| PBL013 | 219 |
| PBL014 | 219 |
| PBL015 | 219 |
| PBL016 | 219 |
| PBL017 | 219 |
| PBL018 | 219 |
| PBL019 | 219 |
| PBL020 | 219 |
| PBL021 | 219 |
| PBL022 | 219 |
| PBL028 | 220 |
| PBL029 | 220 |
| PBL030 | 220 |
| PBM001 | 220 |
| PBM002 | 220 |
| PBM003 | 220 |
| PBM004 | 220 |
| PBN001 | 220 |
| PBN002 | 220 |
| PBN005 | 220 |
| PBN006 | 220 |
| PBN007 | 220 |
| PBN008 | 220 |
| PBN009 | 220 |
| PBN010 | 220 |
| PBN011 | 220 |
| PBN012 | 220 |
| PBN013 | 220 |
| PBN014 | 221 |
| PBN015 | 221 |
| PBN016 | 221 |
| PBN017 | 221 |
| PBN018 | 221 |
| PBN019 | 221 |
| PBN020 | 221 |
| PBN021 | 221 |
| PBN022 | 221 |
| PBN023 | 221 |
| PBN024 | 221 |
| PBN025 | 221 |
| PBN026 | 221 |
| PBN027 | 221 |
| PBN028 | 221 |
| PBN029 | 222 |
| PBP001 | 222 |
| PBP002 | 222 |
| PBQ021 | 222 |
| PBQ022 | 222 |
| PBQ026 | 222 |
| PBQ027 | 222 |
| PBQ028 | 222 |
| PBQ029 | 223 |
| PBQ030 | 223 |
| PBQ031 | 223 |
| PBQ032 | 223 |

|        |     |        |     |        |     |        |     |        |     |        |     |
|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|
| PBQ033 | 223 | PLG011 | 232 | PSB007 | 236 | PSD042 | 238 | PSF079 | 239 | PSG085 | 241 |
| PBQ034 | 222 | PLG012 | 232 | PSB008 | 236 | PSD043 | 238 | PSF080 | 239 | PSG086 | 241 |
| PBQ035 | 222 | PLG013 | 232 | PSB009 | 236 | PSD044 | 238 | PSF081 | 239 | PSG087 | 241 |
| PBR001 | 224 | PLG014 | 232 | PSB010 | 236 | PSD045 | 238 | PSF082 | 239 | PSG088 | 241 |
| PBR002 | 224 | PLG015 | 232 | PSB011 | 236 | PSD046 | 238 | PSF083 | 239 | PSG089 | 241 |
| PBR004 | 224 | PNB001 | 233 | PSB012 | 236 | PSD047 | 238 | PSF084 | 239 | PSG090 | 241 |
| PBV001 | 224 | PNB002 | 233 | PSB013 | 236 | PSD048 | 238 | PSF085 | 239 | PSG091 | 241 |
| PBV002 | 224 | PNB003 | 233 | PSB014 | 236 | PSD049 | 238 | PSF086 | 239 | PSG093 | 242 |
| PBV003 | 224 | PNB004 | 233 | PSB015 | 236 | PSD050 | 238 | PSF087 | 239 | PSG094 | 242 |
| PBV004 | 224 | PNB005 | 233 | PSB016 | 236 | PSD051 | 238 | PSF088 | 239 | PSG095 | 242 |
| PBZ001 | 225 | PNB006 | 233 | PSB017 | 236 | PSD052 | 238 | PSF089 | 239 | PSG096 | 242 |
| PBZ002 | 225 | PNB007 | 233 | PSB018 | 236 | PSD053 | 238 | PSF090 | 239 | PSG097 | 242 |
| PBZ003 | 225 | PNC001 | 233 | PSB019 | 236 | PSD054 | 238 | PSF091 | 239 | PSG098 | 242 |
| PDB001 | 225 | PNC002 | 233 | PSB020 | 236 | PSD055 | 238 | PSF092 | 239 | PSG099 | 242 |
| PDD001 | 226 | PNC003 | 233 | PSB021 | 236 | PSD056 | 238 | PSF093 | 239 | PSG100 | 242 |
| PDD002 | 226 | PNC004 | 233 | PSB022 | 236 | PSD057 | 238 | PSG001 | 240 | PSG101 | 242 |
| PDD003 | 226 | PNF001 | 233 | PSB023 | 236 | PSD058 | 238 | PSG002 | 240 | PSG102 | 242 |
| PDD004 | 226 | PNF002 | 233 | PSB024 | 236 | PSD059 | 238 | PSG003 | 240 | PSG103 | 242 |
| PDG001 | 226 | PNF003 | 233 | PSC001 | 237 | PSF001 | 238 | PSG004 | 240 | PSG104 | 242 |
| PDG002 | 226 | PNF004 | 233 | PSC002 | 237 | PSF002 | 238 | PSG005 | 240 | PSG105 | 242 |
| PDG003 | 227 | PNF005 | 233 | PSC003 | 237 | PSF003 | 238 | PSG006 | 240 | PSG106 | 242 |
| PDJ001 | 227 | PNF006 | 233 | PSC004 | 237 | PSF004 | 238 | PSG007 | 240 | PSG107 | 242 |
| PDJ002 | 227 | PNF007 | 233 | PSC005 | 237 | PSF005 | 238 | PSG008 | 240 | PSG108 | 242 |
| PDJ003 | 227 | PNF008 | 234 | PSC006 | 237 | PSF006 | 238 | PSG009 | 240 | PSG109 | 242 |
| PDJ004 | 227 | PNF009 | 234 | PSC007 | 237 | PSF007 | 238 | PSG010 | 240 | PSG110 | 242 |
| PDJ005 | 227 | PNF010 | 234 | PSC008 | 237 | PSF008 | 238 | PSG011 | 240 | PSG111 | 242 |
| PDJ006 | 227 | PNF011 | 234 | PSC009 | 237 | PSF009 | 238 | PSG012 | 240 | PSG112 | 242 |
| PDJ007 | 227 | PNF012 | 234 | PSC010 | 237 | PSF010 | 238 | PSG013 | 240 | PSG113 | 242 |
| PDJ008 | 227 | PNF013 | 234 | PSC011 | 237 | PSF011 | 238 | PSG014 | 240 | PSG114 | 242 |
| PDJ009 | 227 | PNF014 | 234 | PSC012 | 237 | PSF012 | 238 | PSG015 | 240 | PSG115 | 242 |
| PDJ010 | 227 | PNF015 | 234 | PSC013 | 237 | PSF013 | 238 | PSG016 | 240 | PSG116 | 242 |
| PDJ011 | 227 | PNF016 | 234 | PSC014 | 237 | PSF014 | 238 | PSG017 | 240 | PSG117 | 242 |
| PDJ012 | 227 | PNF017 | 234 | PSC015 | 237 | PSF015 | 238 | PSG019 | 240 | PSG118 | 242 |
| PGB001 | 227 | PNF018 | 234 | PSC016 | 237 | PSF016 | 238 | PSG020 | 240 | PSG119 | 242 |
| PGB002 | 227 | PNG004 | 234 | PSC017 | 237 | PSF017 | 238 | PSG021 | 240 | PSG120 | 242 |
| PGB006 | 228 | PNG005 | 234 | PSC018 | 237 | PSF018 | 238 | PSG022 | 240 | PSG121 | 242 |
| PGB007 | 228 | PNG006 | 234 | PSC019 | 237 | PSF019 | 238 | PSG023 | 240 | PSG122 | 242 |
| PGG001 | 228 | PNG007 | 234 | PSC020 | 237 | PSF020 | 238 | PSG024 | 240 | PSG123 | 242 |
| PGG002 | 228 | PNG008 | 234 | PSC021 | 237 | PSF021 | 238 | PSG025 | 240 | PSG127 | 241 |
| PGG003 | 228 | PNG009 | 234 | PSC022 | 237 | PSF022 | 238 | PSG026 | 240 | PSG128 | 241 |
| PGG004 | 228 | PNG010 | 234 | PSC023 | 237 | PSF023 | 238 | PSG027 | 240 | PSG129 | 241 |
| PGG006 | 228 | PNG011 | 234 | PSC024 | 237 | PSF024 | 238 | PSG028 | 240 | PSG130 | 241 |
| PGG007 | 228 | PNG012 | 234 | PSC025 | 237 | PSF025 | 238 | PSG029 | 240 | PSG131 | 241 |
| PGG008 | 228 | PNG013 | 234 | PSC026 | 237 | PSF026 | 238 | PSG030 | 240 | PSG132 | 241 |
| PGG014 | 229 | PNG014 | 234 | PSC027 | 237 | PSF027 | 238 | PSG031 | 240 | PSG133 | 241 |
| PGG015 | 229 | PNG015 | 234 | PSC028 | 237 | PSF028 | 238 | PSG034 | 240 | PSG134 | 241 |
| PGG016 | 229 | PNG016 | 234 | PSC029 | 237 | PSF029 | 238 | PSG035 | 240 | PSG135 | 241 |
| PGG017 | 229 | PNG017 | 234 | PSC030 | 237 | PSF030 | 238 | PSG036 | 240 | PSG136 | 241 |
| PGG018 | 229 | PNG018 | 234 | PSC031 | 237 | PSF031 | 239 | PSG037 | 240 | PSG137 | 241 |
| PGG019 | 229 | PNG019 | 234 | PSC032 | 237 | PSF032 | 239 | PSG038 | 240 | PSG138 | 241 |
| PGG020 | 229 | PNG020 | 234 | PSC033 | 237 | PSF033 | 239 | PSG039 | 240 | PSG139 | 241 |
| PGG021 | 229 | PNG021 | 234 | PSC034 | 237 | PSF034 | 239 | PSG040 | 240 | PSG140 | 241 |
| PGG022 | 229 | PNG022 | 234 | PSC035 | 237 | PSF035 | 239 | PSG041 | 240 | PSG141 | 241 |
| PGG024 | 229 | PNG023 | 234 | PSC036 | 237 | PSF036 | 239 | PSG042 | 240 | PSG142 | 241 |
| PGG025 | 229 | PNG024 | 234 | PSC037 | 237 | PSF037 | 239 | PSG043 | 240 | PSG143 | 241 |
| PGG026 | 229 | PNG025 | 234 | PSD001 | 237 | PSF038 | 239 | PSG044 | 240 | PSG144 | 241 |
| PGG027 | 229 | PNG026 | 234 | PSD002 | 237 | PSF039 | 239 | PSG045 | 240 | PSG145 | 241 |
| PGG028 | 229 | PNG027 | 234 | PSD003 | 237 | PSF040 | 239 | PSG046 | 240 | PSG146 | 241 |
| PJB001 | 229 | PNG028 | 234 | PSD004 | 237 | PSF041 | 239 | PSG047 | 240 | PSG147 | 241 |
| PJB002 | 230 | PNM010 | 235 | PSD005 | 237 | PSF042 | 239 | PSG048 | 240 | PSG148 | 241 |
| PJB003 | 230 | PNM011 | 235 | PSD006 | 237 | PSF043 | 239 | PSG049 | 240 | PSG149 | 241 |
| PJB004 | 230 | PNM012 | 235 | PSD007 | 237 | PSF044 | 239 | PSG050 | 240 | PSG150 | 241 |
| PJB005 | 230 | PNM013 | 235 | PSD008 | 237 | PSF045 | 239 | PSG051 | 240 | PSG151 | 241 |
| PJD001 | 231 | PNM014 | 235 | PSD009 | 237 | PSF046 | 239 | PSG052 | 240 | PSG152 | 241 |
| PJD002 | 231 | PNM015 | 235 | PSD010 | 237 | PSF047 | 239 | PSG053 | 240 | PSG153 | 241 |
| PJD003 | 231 | PNM016 | 235 | PSD011 | 237 | PSF048 | 239 | PSG054 | 240 | PSG154 | 241 |
| PJD006 | 231 | PNM017 | 235 | PSD012 | 237 | PSF049 | 239 | PSG055 | 240 | PSG155 | 241 |
| PJD008 | 231 | PNM018 | 235 | PSD013 | 237 | PSF050 | 239 | PSG056 | 240 | PSG156 | 241 |
| PJD009 | 231 | PNZ001 | 235 | PSD014 | 237 | PSF051 | 239 | PSG057 | 241 | PSH001 | 242 |
| PJD010 | 231 | PNZ002 | 235 | PSD015 | 237 | PSF052 | 239 | PSG058 | 241 | PSH002 | 242 |
| PJD011 | 231 | PQB001 | 235 | PSD016 | 237 | PSF053 | 239 | PSG059 | 241 | PSH003 | 242 |
| PJD012 | 231 | PQB002 | 235 | PSD017 | 237 | PSF054 | 239 | PSG060 | 240 | PSH004 | 242 |
| PJD013 | 231 | PQB003 | 235 | PSD018 | 237 | PSF055 | 239 | PSG061 | 240 | PSH005 | 242 |
| PJD014 | 231 | PQB004 | 235 | PSD019 | 237 | PSF056 | 239 | PSG062 | 240 | PSH006 | 242 |
| PJD015 | 231 | PQB005 | 235 | PSD020 | 237 | PSF057 | 239 | PSG063 | 240 | PSH007 | 242 |
| PJH001 | 231 | PQB006 | 235 | PSD021 | 237 | PSF058 | 239 | PSG064 | 240 | PSH008 | 242 |
| PJH002 | 231 | PQB007 | 235 | PSD022 | 237 | PSF059 | 239 | PSG065 | 241 | PSH009 | 242 |
| PJH003 | 231 | PQB008 | 235 | PSD023 | 237 | PSF060 | 239 | PSG066 | 241 | PSH010 | 242 |
| PJH004 | 231 | PQB009 | 235 | PSD024 | 237 | PSF061 | 239 | PSG067 | 241 | PSH011 | 242 |
| PLB001 | 232 | PQB010 | 235 | PSD025 | 237 | PSF062 | 239 | PSG068 | 241 | PSH012 | 242 |
| PLB002 | 232 | PQD001 | 235 | PSD026 | 237 | PSF063 | 239 | PSG069 | 241 | PSH013 | 242 |
| PLB003 | 232 | PQD002 | 235 | PSD027 | 237 | PSF064 | 239 | PSG070 | 241 | PSH014 | 242 |
| PLB004 | 232 | PQD003 | 235 | PSD028 | 237 | PSF065 | 239 | PSG071 | 241 | PSH015 | 242 |
| PLB005 | 232 | PQD004 | 235 | PSD029 | 237 | PSF066 | 239 | PSG072 | 241 | PSH016 | 242 |
| PLB006 | 232 | PQD005 | 235 | PSD030 | 238 | PSF067 | 238 | PSG073 | 241 | PSH017 | 242 |
| PLB007 | 232 | PQD006 | 235 | PSD031 | 238 | PSF068 | 239 | PSG074 | 241 | PSH018 | 242 |
| PLG001 | 232 | PQD007 | 235 | PSD032 | 238 | PSF069 | 239 | PSG075 | 241 | PSH019 | 242 |
| PLG002 | 232 | PQD008 | 235 | PSD033 | 238 | PSF070 | 239 | PSG076 | 241 | PSH020 | 242 |
| PLG003 | 232 | PQL001 | 236 | PSD034 | 238 | PSF071 | 239 | PSG077 | 241 | PSH021 | 242 |
| PLG004 | 232 | PQL002 | 236 | PSD035 | 238 | PSF072 | 239 | PSG078 | 241 | PSH022 | 242 |
| PLG005 | 232 | PSB001 | 236 | PSD036 | 238 | PSF073 | 239 | PSG079 | 241 | PSH023 | 242 |
| PLG006 | 232 | PSB002 | 236 | PSD037 | 238 | PSF074 | 239 | PSG080 | 241 | PSH024 | 242 |
| PLG007 | 232 | PSB003 | 236 | PSD038 | 238 | PSF075 | 239 | PSG081 | 241 | PSH025 | 242 |
| PLG008 | 232 | PSB004 | 236 | PSD039 | 238 | PSF076 | 239 | PSG082 | 241 | PSH026 | 242 |
| PLG009 | 232 | PSB005 | 236 | PSD040 | 238 | PSF077 | 239 | PSG083 | 241 | PSH027 | 242 |
| PLG010 | 232 | PSB006 | 236 | PSD041 | 238 | PSF078 | 239 | PSG084 | 241 | PSH028 | 242 |

|        |     |        |     |        |     |        |     |        |     |        |     |
|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|
| PSH029 | 242 | PSN007 | 245 | PSZ004 | 249 | QBB013 | 256 | QGB052 | 268 | QGF069 | 269 |
| PSH030 | 242 | PSN008 | 245 | PSZ005 | 249 | QBB014 | 256 | QGB053 | 268 | QGF070 | 269 |
| PSH031 | 242 | PSN009 | 245 | PSZ006 | 249 | QBB015 | 257 | QGB054 | 268 | QGF071 | 269 |
| PSK001 | 243 | PSN010 | 245 | PSZ007 | 249 | QBB017 | 258 | QGB055 | 268 | QGF072 | 269 |
| PSK002 | 243 | PSN011 | 245 | PSZ008 | 249 | QBB018 | 258 | QGB056 | 268 | QGF073 | 269 |
| PSK003 | 243 | PSN012 | 245 | PSZ009 | 249 | QBB019 | 258 | QGB057 | 268 | QGF074 | 269 |
| PSK004 | 243 | PSN013 | 245 | PSZ010 | 249 | QBB020 | 260 | QGB058 | 267 | QGF075 | 269 |
| PSK005 | 243 | PSN014 | 245 | PSZ011 | 249 | QBB021 | 260 | QGB059 | 267 | QGF076 | 269 |
| PSK006 | 243 | PSN015 | 245 | PSZ012 | 249 | QBB022 | 259 | QGB060 | 268 | QGF077 | 269 |
| PSK007 | 243 | PSN016 | 245 | PSZ013 | 249 | QBB023 | 262 | QGB061 | 267 | QGF078 | 269 |
| PSK008 | 243 | PSN017 | 245 | PSZ014 | 249 | QBB024 | 257 | QGB062 | 267 | QGF079 | 270 |
| PSK009 | 243 | PSN018 | 245 | PSZ015 | 249 | QBB025 | 257 | QGB063 | 267 | QGF080 | 269 |
| PSK010 | 243 | PSN019 | 245 | PSZ016 | 249 | QBB026 | 257 | QGB064 | 267 | QGF081 | 270 |
| PSK011 | 243 | PSN020 | 245 | PSZ017 | 249 | QBB027 | 257 | QGB065 | 268 | QGF082 | 270 |
| PSK012 | 243 | PSN021 | 245 | PSZ018 | 249 | QBB028 | 257 | QGB066 | 267 | QGF083 | 270 |
| PSK013 | 243 | PSN022 | 245 | PSZ019 | 249 | QBB029 | 254 | QGB067 | 268 | QGF084 | 270 |
| PSK014 | 243 | PSP043 | 245 | PVB001 | 250 | QBB030 | 258 | QGB068 | 268 | QGF085 | 270 |
| PSK015 | 243 | PSP044 | 245 | PVB002 | 250 | QBB031 | 261 | QGB069 | 268 | QGF086 | 269 |
| PSK016 | 243 | PSP045 | 245 | PVB003 | 250 | QBB032 | 261 | QGB070 | 267 | QGF087 | 270 |
| PSK017 | 243 | PSP046 | 245 | PVB004 | 250 | QBB033 | 261 | QGB071 | 267 | QGF088 | 270 |
| PSK018 | 243 | PSP047 | 245 | PVB005 | 250 | QBB034 | 261 | QGB072 | 268 | QGF089 | 270 |
| PSK019 | 243 | PSP048 | 245 | PVB006 | 250 | QBB035 | 261 | QGB073 | 267 | QGF090 | 270 |
| PSK020 | 243 | PSP049 | 245 | PVB007 | 250 | QBB036 | 259 | QGB074 | 267 | QGF091 | 269 |
| PSK021 | 243 | PSP050 | 245 | PVB008 | 250 | QBB037 | 259 | QGB075 | 267 | QGF092 | 270 |
| PSK022 | 243 | PSP051 | 245 | PVB009 | 250 | QBB038 | 260 | QGB076 | 267 | QGF093 | 270 |
| PSL001 | 243 | PSP052 | 245 | PVB010 | 250 | QBB039 | 262 | QGB077 | 267 | QGF094 | 270 |
| PSL002 | 243 | PSP053 | 245 | PVB011 | 250 | QBB040 | 260 | QGB078 | 267 | QGF095 | 270 |
| PSL003 | 243 | PSP054 | 245 | PVB012 | 250 | QBB041 | 256 | QGB079 | 267 | QGF096 | 270 |
| PSL004 | 243 | PSP055 | 245 | PVB013 | 250 | QBG001 | 263 | QGF001 | 270 | QGF097 | 270 |
| PSL005 | 243 | PSP056 | 245 | PVB014 | 250 | QBG002 | 263 | QGF002 | 270 | QGF098 | 270 |
| PSL006 | 243 | PSP057 | 245 | PVB015 | 250 | QBG003 | 263 | QGF003 | 270 | QGF099 | 270 |
| PSL007 | 243 | PSP058 | 245 | PVB016 | 250 | QBG004 | 262 | QGF004 | 268 | QGF100 | 270 |
| PSL008 | 243 | PSP059 | 245 | PVB017 | 250 | QBG006 | 263 | QGF005 | 268 | QGF101 | 270 |
| PSL009 | 243 | PSP060 | 245 | PVB018 | 250 | QBG007 | 264 | QGF006 | 268 | QGF102 | 270 |
| PSL010 | 243 | PSP061 | 245 | PVB019 | 250 | QBN001 | 264 | QGF007 | 268 | QGF103 | 270 |
| PSL011 | 243 | PSP062 | 245 | PVB020 | 250 | QBN002 | 264 | QGF008 | 268 | QGF104 | 270 |
| PSL012 | 243 | PSP063 | 245 | PVB021 | 250 | QBN003 | 264 | QGF009 | 268 | QGF105 | 269 |
| PSL013 | 243 | PSR001 | 246 | PVB022 | 250 | QBN004 | 265 | QGF010 | 268 | QGF106 | 269 |
| PSL014 | 243 | PSR002 | 246 | PVB023 | 250 | QBN005 | 265 | QGF011 | 268 | QGF107 | 270 |
| PSL015 | 243 | PSR003 | 246 | PVB024 | 250 | QBN006 | 265 | QGF012 | 268 | QGF108 | 270 |
| PSL016 | 243 | PSR004 | 246 | PVB025 | 250 | QBN007 | 265 | QGF013 | 268 | QGF109 | 271 |
| PSL017 | 243 | PSR005 | 246 | PVB026 | 250 | QBN008 | 265 | QGF014 | 269 | QGF110 | 270 |
| PSL018 | 243 | PSR006 | 246 | PVB027 | 250 | QBR001 | 266 | QGF015 | 269 | QGF111 | 270 |
| PSL019 | 243 | PSR007 | 246 | PVB028 | 250 | QBR004 | 266 | QGF016 | 269 | QGF112 | 270 |
| PSL020 | 243 | PSR008 | 246 | PVB029 | 250 | QBR005 | 266 | QGF017 | 269 | QGF113 | 269 |
| PSL021 | 243 | PSR009 | 246 | PVB030 | 250 | QBR001 | 267 | QGF018 | 269 | QGF114 | 270 |
| PSL022 | 243 | PSR010 | 246 | PVB031 | 250 | QGB002 | 267 | QGF019 | 269 | QGF115 | 270 |
| PSL023 | 244 | PSR011 | 246 | PVB032 | 250 | QGB003 | 267 | QGF020 | 269 | QGF116 | 268 |
| PSL024 | 244 | PSR012 | 246 | PVB033 | 250 | QGB004 | 268 | QGF021 | 269 | QGF117 | 269 |
| PSL025 | 244 | PSR013 | 246 | PVB034 | 250 | QGB005 | 267 | QGF022 | 269 | QGF118 | 269 |
| PSL026 | 244 | PSR014 | 246 | PVZ001 | 251 | QGB006 | 268 | QGF023 | 268 | QGF119 | 270 |
| PSL027 | 244 | PSR015 | 246 | PVZ002 | 251 | QGB007 | 268 | QGF024 | 269 | QGF120 | 270 |
| PSL028 | 244 | PSR016 | 246 | PVZ003 | 251 | QGB008 | 268 | QGF025 | 269 | QGF121 | 270 |
| PSL029 | 244 | PSR017 | 246 | PVZ004 | 251 | QGB009 | 268 | QGF026 | 269 | QGF122 | 269 |
| PSL030 | 244 | PSR018 | 246 | PVZ005 | 251 | QGB010 | 268 | QGF027 | 269 | QGF123 | 270 |
| PSL031 | 244 | PSR019 | 246 | PVZ006 | 251 | QGB011 | 267 | QGF028 | 269 | QGF124 | 271 |
| PSL032 | 244 | PSR020 | 246 | PVZ007 | 251 | QGB012 | 267 | QGF029 | 269 | QGF125 | 268 |
| PSL033 | 244 | PSR021 | 246 | PVZ008 | 251 | QGB013 | 267 | QGF030 | 269 | QGF126 | 269 |
| PSL035 | 244 | PSR022 | 246 | PVZ009 | 251 | QGB014 | 267 | QGF031 | 269 | QGF127 | 269 |
| PSL036 | 244 | PSR023 | 246 | PVZ010 | 251 | QGB015 | 267 | QGF032 | 269 | QGF128 | 269 |
| PSL037 | 244 | PSR024 | 246 | PVZ011 | 251 | QGB016 | 267 | QGF033 | 271 | QGF129 | 268 |
| PSL038 | 244 | PSR025 | 246 | PVZ012 | 251 | QGB017 | 267 | QGF034 | 271 | QGF130 | 268 |
| PSL039 | 244 | PSR026 | 247 | PVZ013 | 251 | QGB018 | 267 | QGF035 | 271 | QGF131 | 271 |
| PSL040 | 244 | PSR027 | 247 | PVZ014 | 251 | QGB019 | 267 | QGF036 | 271 | QGF132 | 269 |
| PSL041 | 244 | PSR028 | 247 | PVZ015 | 251 | QGB020 | 267 | QGF037 | 271 | QGF133 | 270 |
| PSL042 | 244 | PSR029 | 247 | PVZ016 | 251 | QGB021 | 267 | QGF038 | 271 | QGF134 | 271 |
| PSL043 | 244 | PSR030 | 247 | PXB001 | 252 | QGB022 | 267 | QGF039 | 271 | QGF135 | 271 |
| PSL044 | 244 | PSR031 | 247 | PXB002 | 252 | QGB023 | 267 | QGF040 | 271 | QGF136 | 271 |
| PSM001 | 244 | PSR032 | 247 | PXL001 | 252 | QGB024 | 268 | QGF041 | 271 | QGF137 | 271 |
| PSM002 | 244 | PSR033 | 247 | PZB003 | 252 | QGB025 | 268 | QGF042 | 271 | QGF138 | 271 |
| PSM003 | 244 | PSR034 | 247 | PZB004 | 252 | QGB026 | 268 | QGF043 | 271 | QGF139 | 271 |
| PSM004 | 244 | PSR035 | 247 | PZB005 | 252 | QGB027 | 268 | QGF044 | 271 | QGF140 | 271 |
| PSM005 | 244 | PSR036 | 247 | PZB006 | 252 | QGB028 | 268 | QGF045 | 271 | QGF141 | 271 |
| PSM006 | 244 | PSR037 | 247 | PZB007 | 252 | QGB029 | 268 | QGF046 | 269 | QGF142 | 271 |
| PSM007 | 244 | PSR038 | 247 | PZB008 | 252 | QGB030 | 268 | QGF047 | 271 | QGF143 | 271 |
| PSM008 | 244 | PSR039 | 247 |        |     | QGB031 | 268 | QGF048 | 271 | QGF144 | 271 |
| PSM009 | 244 | PSR040 | 247 |        |     | QGB032 | 268 | QGF049 | 271 | QGF145 | 271 |
| PSM010 | 244 | PSR041 | 247 |        |     | QGB033 | 267 | QGF050 | 271 | QGF146 | 271 |
| PSM011 | 244 | PSR042 | 247 |        |     | QGB034 | 267 | QGF051 | 269 | QGF147 | 271 |
| PSM012 | 244 | PSR043 | 247 |        |     | QGB035 | 267 | QGF052 | 270 | QGF148 | 271 |
| PSM013 | 244 | PSR044 | 247 |        |     | QGB036 | 267 | QGF053 | 270 | QGF149 | 271 |
| PSM014 | 244 | PSR045 | 247 |        |     | QGB037 | 267 | QGF054 | 270 | QGF150 | 271 |
| PSM015 | 244 | PSR046 | 248 |        |     | QGB038 | 268 | QGF055 | 270 | QGF151 | 271 |
| PSM016 | 244 | PSR047 | 248 |        |     | QGB039 | 267 | QGF056 | 270 | QGF152 | 271 |
| PSM017 | 244 | PSR048 | 248 |        |     | QGB040 | 267 | QGF057 | 270 | QGF153 | 271 |
| PSM018 | 244 | PSR049 | 248 |        |     | QGB041 | 268 | QGF058 | 270 | QGF154 | 271 |
| PSM019 | 244 | PSX001 | 248 |        |     | QGB042 | 267 | QGF059 | 270 | QGF155 | 271 |
| PSM020 | 244 | PSX002 | 248 |        |     | QGB043 | 267 | QGF060 | 270 | QGF156 | 271 |
| PSM021 | 244 | PSX003 | 248 |        |     | QGB044 | 267 | QGF061 | 270 | QGF157 | 271 |
| PSM022 | 244 | PSX004 | 248 |        |     | QGB045 | 267 | QGF062 | 270 | QGF158 | 271 |
| PSN001 | 245 | PSX005 | 248 |        |     | QGB046 | 267 | QGF063 | 270 | QGF159 | 271 |
| PSN002 | 245 | PSX006 | 248 |        |     | QGB047 | 268 | QGF064 | 270 | QGF160 | 271 |
| PSN003 | 245 | PSX007 | 248 |        |     | QGB048 | 268 | QGF065 | 269 | QGF161 | 271 |
| PSN004 | 245 | PSZ001 | 248 |        |     | QGB049 | 268 | QGF066 | 269 | QGF162 | 271 |
| PSN005 | 245 | PSZ002 | 249 |        |     | QGB050 | 268 | QGF067 | 269 | QGF163 | 271 |
| PSN006 | 245 | PSZ003 | 249 |        |     | QGB051 | 268 | QGF068 | 269 | QGF164 | 271 |

Q  
didactic material



|        |     |        |     |
|--------|-----|--------|-----|
| QGJ033 | 272 | QLL008 | 285 |
| QGJ034 | 272 | QLL009 | 285 |
| QGJ035 | 272 | QLL010 | 285 |
| QGJ036 | 272 | QLL011 | 284 |
| QGJ037 | 272 | QLL012 | 285 |
| QGJ038 | 272 | QLL013 | 285 |
| QGJ039 | 272 | QLL014 | 285 |
| QGJ040 | 272 | QLL015 | 286 |
| QGJ041 | 272 | QLN001 | 286 |
| QGJ042 | 272 | QLN002 | 286 |
| QGJ043 | 272 | QLN003 | 286 |
| QGJ044 | 272 | QLN004 | 287 |
| QGJ045 | 272 | QLN005 | 287 |
| QGJ046 | 271 | QLN006 | 287 |
| QGJ047 | 271 |        |     |
| QGJ048 | 272 |        |     |
| QGJ049 | 272 |        |     |
| QGJ050 | 272 |        |     |
| QGJ051 | 272 |        |     |
| QGJ052 | 271 |        |     |
| QGJ053 | 272 |        |     |
| QGJ054 | 272 |        |     |
| QGJ055 | 272 |        |     |
| QGJ056 | 272 |        |     |
| QGJ057 | 272 |        |     |
| QGJ058 | 272 |        |     |
| QGJ059 | 272 |        |     |
| QGJ060 | 272 |        |     |
| QGJ061 | 272 |        |     |
| QGJ062 | 272 |        |     |
| QGJ063 | 272 |        |     |
| QGJ064 | 272 |        |     |
| QGJ065 | 272 |        |     |
| QGM001 | 273 |        |     |
| QGM002 | 273 |        |     |
| QGM003 | 273 |        |     |
| QGM004 | 273 |        |     |
| QGM005 | 273 |        |     |
| QGM006 | 273 |        |     |
| QGM007 | 273 |        |     |
| QGM008 | 273 |        |     |
| QGR001 | 273 |        |     |
| QGR002 | 273 |        |     |
| QGR003 | 274 |        |     |
| QGR004 | 274 |        |     |
| QGR005 | 275 |        |     |
| QGR006 | 274 |        |     |
| QGR007 | 275 |        |     |
| QGR008 | 275 |        |     |
| QGR009 | 276 |        |     |
| QGR010 | 276 |        |     |
| QLB001 | 277 |        |     |
| QLB002 | 277 |        |     |
| QLB003 | 277 |        |     |
| QLB004 | 277 |        |     |
| QLB005 | 277 |        |     |
| QLB006 | 278 |        |     |
| QLB007 | 278 |        |     |
| QLB008 | 278 |        |     |
| QLD001 | 278 |        |     |
| QLD002 | 278 |        |     |
| QLD003 | 279 |        |     |
| QLD004 | 279 |        |     |
| QLD005 | 279 |        |     |
| QLD006 | 279 |        |     |
| QLD007 | 280 |        |     |
| QLG001 | 280 |        |     |
| QLG002 | 280 |        |     |
| QLG003 | 280 |        |     |
| QLG004 | 280 |        |     |
| QLG005 | 281 |        |     |
| QLG006 | 281 |        |     |
| QLG007 | 281 |        |     |
| QLG008 | 281 |        |     |
| QLG009 | 281 |        |     |
| QLG010 | 282 |        |     |
| QLG011 | 282 |        |     |
| QLG012 | 282 |        |     |
| QLG013 | 282 |        |     |
| QLG014 | 282 |        |     |
| QLG015 | 282 |        |     |
| QLJ001 | 282 |        |     |
| QLJ002 | 282 |        |     |
| QLJ003 | 282 |        |     |
| QLJ004 | 283 |        |     |
| QLJ005 | 283 |        |     |
| QLJ006 | 283 |        |     |
| QLJ007 | 283 |        |     |
| QLJ008 | 283 |        |     |
| QLJ009 | 283 |        |     |
| QLJ010 | 283 |        |     |
| QLL001 | 284 |        |     |
| QLL002 | 284 |        |     |
| QLL003 | 284 |        |     |
| QLL004 | 284 |        |     |
| QLL005 | 284 |        |     |
| QLL006 | 284 |        |     |
| QLL007 | 284 |        |     |

## R

protection  
and safety

|        |     |
|--------|-----|
| RBB001 | 290 |
| RBB002 | 290 |
| RBB003 | 290 |
| RBB004 | 290 |
| RBB005 | 290 |
| RBB006 | 290 |
| RBB007 | 290 |
| RBB008 | 290 |
| RBB009 | 290 |
| RBB010 | 290 |
| RBB011 | 290 |
| RBB012 | 290 |
| RBB013 | 290 |
| RBB014 | 290 |
| RBB015 | 290 |
| RBB016 | 290 |
| RBB017 | 290 |
| RBB018 | 290 |
| RBB019 | 290 |
| RBB020 | 290 |
| RBD001 | 290 |
| RBD002 | 290 |
| RBG001 | 291 |
| RBG002 | 291 |
| RBG003 | 291 |
| RBG004 | 291 |
| RBG005 | 292 |
| RBG006 | 292 |
| RBG007 | 292 |
| RBG008 | 292 |
| RBG009 | 292 |
| RBG010 | 293 |
| RBG011 | 293 |
| RBG012 | 292 |
| RBG013 | 293 |
| RBG014 | 293 |
| RBG015 | 293 |
| RBG016 | 294 |
| RBG017 | 294 |
| RBJ001 | 294 |
| RBJ002 | 294 |
| RBL002 | 294 |
| RBL003 | 295 |
| RBN001 | 295 |
| RBN002 | 295 |
| RDB004 | 295 |
| RDB005 | 295 |
| RDB006 | 295 |
| RZB013 | 296 |

## Z

others

|        |     |
|--------|-----|
| ZCC004 | 299 |
| ZCC005 | 298 |
| ZCC006 | 298 |
| ZCC007 | 298 |
| ZCC008 | 298 |
| ZCC009 | 298 |
| ZCC010 | 298 |
| ZCC011 | 298 |
| ZCC012 | 298 |
| ZCF001 | 299 |
| ZCF002 | 299 |

|        |     |
|--------|-----|
| ZCF003 | 299 |
| ZCF004 | 299 |
| ZCF005 | 299 |
| ZCF006 | 299 |
| ZCF007 | 299 |
| ZCF008 | 299 |
| ZCF009 | 299 |
| ZCF010 | 299 |
| ZCF011 | 299 |
| ZCF012 | 299 |
| ZCF013 | 299 |
| ZCF014 | 299 |
| ZCF015 | 299 |
| ZCF016 | 299 |
| ZCF017 | 299 |
| ZCF018 | 299 |
| ZCF019 | 299 |
| ZCF020 | 299 |
| ZCH001 | 300 |
| ZCH002 | 300 |
| ZCH003 | 300 |
| ZCH004 | 300 |
| ZCH005 | 300 |
| ZCH006 | 300 |
| ZCH007 | 300 |
| ZCH012 | 300 |
| ZCH013 | 300 |
| ZCH014 | 300 |
| ZCH015 | 300 |
| ZCZ001 | 301 |
| ZCZ002 | 301 |
| ZCZ003 | 301 |
| ZFD001 | 301 |
| ZFD002 | 301 |
| ZFD005 | 302 |
| ZFD006 | 302 |
| ZFD012 | 301 |
| ZFD013 | 302 |
| ZFD014 | 304 |
| ZFD015 | 304 |
| ZFP001 | 304 |
| ZFP006 | 306 |
| ZFP007 | 306 |
| ZFP008 | 306 |
| ZFP009 | 306 |
| ZFP010 | 304 |
| ZFP011 | 304 |
| ZFP012 | 304 |
| ZFR001 | 307 |
| ZFR002 | 307 |
| ZFR003 | 307 |
| ZFR004 | 307 |
| ZFR008 | 307 |
| ZFR011 | 307 |
| ZFR012 | 307 |
| ZHB001 | 308 |
| ZHD001 | 308 |
| ZHD002 | 308 |
| ZHD003 | 308 |
| ZHD004 | 308 |
| ZHD005 | 308 |
| ZKN001 | 309 |
| ZKN002 | 309 |
| ZKN003 | 309 |
| ZKN004 | 309 |
| ZKZ001 | 310 |
| ZMB001 | 311 |
| ZMB003 | 311 |
| ZMB004 | 312 |
| ZMB006 | 312 |
| ZMB007 | 311 |
| ZMB009 | 311 |
| ZMB010 | 312 |
| ZMB012 | 312 |
| ZMB013 | 311 |
| ZMB015 | 311 |
| ZMB016 | 311 |
| ZMB017 | 312 |
| ZMB018 | 312 |
| ZMB019 | 312 |
| ZMB020 | 312 |
| ZMB021 | 312 |
| ZMB024 | 312 |
| ZMB027 | 311 |
| ZMB028 | 311 |
| ZMB029 | 311 |
| ZMB031 | 312 |
| ZMB032 | 312 |
| ZMB033 | 312 |
| ZMB034 | 312 |
| ZMB036 | 313 |
| ZMB037 | 313 |
| ZMB038 | 313 |
| ZMB047 | 313 |
| ZMB048 | 313 |
| ZMB049 | 313 |
| ZMD003 | 313 |

## alphabetic index

### B

|                                |     |
|--------------------------------|-----|
| Balances                       | 158 |
| Electronic, precision 1/0.1 g  | 158 |
| Electronic, precision 0,01 g   | 159 |
| Electronic, precision 0,001 g  | 160 |
| Analytical, precision 0,0001 g | 161 |
| Pocket                         | 162 |
| Weighing accessories           | 162 |
| Mechanical balances            | 163 |
| Mechanical, set of weights     | 164 |
| Baths                          | 151 |
| Water/oil baths, analogical    | 151 |
| Water/oil baths, digital       | 151 |
| Water/oil baths, accessories   | 152 |
| Thermoblocks                   | 152 |
| Thermoblocks, accessories      | 154 |
| Beakers                        | 36  |
| Glass, tall form               | 36  |
| Glass, low form                | 36  |
| Glass, conical shape           | 38  |
| Plastic, moulded grad          | 38  |
| Porcelain, tall form           | 38  |
| Porcelain, low form            | 39  |
| Bell jar with hand vacuum pump | 278 |
| Bossheads                      | 76  |
| Bottles, threaded stopper      | 44  |
| Wide mouth, glass              | 44  |
| Wide mouth, plastic            | 44  |
| Narrow mouth, glass            | 46  |
| Narrow mouth, plastic          | 47  |
| Bottles, NS stopper            | 50  |
| Wide mouth, glass              | 50  |
| Narrow mouth, glass            | 50  |
| Bottle-top dispensers          | 208 |
| Adjustable volume              | 208 |
| Accessories                    | 208 |
| Boyle's law apparatus          | 283 |
| Brushes                        | 299 |
| Burettes                       | 69  |
| Type Mohr, PTFE stopcock       | 69  |
| Type Mohr, glass stopcock      | 69  |
| Pellet type                    | 70  |
| Burners                        | 79  |

### C

|                                         |     |
|-----------------------------------------|-----|
| Calorimeter block                       | 283 |
| Caps                                    | 292 |
| Capsules flat, porcelain                | 54  |
| Capsules with handle, porcelain         | 55  |
| Capsules, round, porcelain              | 55  |
| Centrifuges for microtubes              | 104 |
| Bench top                               | 104 |
| Accessories, rotors                     | 105 |
| Chromatography paper                    | 252 |
| Clamps                                  | 81  |
| Clamps f/burettes, tubes                | 73  |
| Clamps, 3-4 prongs                      | 74  |
| Clamps, special                         | 74  |
| Cleaning paper                          | 300 |
| Clips f/ground joints                   | 75  |
| Coats                                   | 292 |
| Cold plate for paraffin dispensing unit | 306 |
| Combustion boats                        | 60  |
| Compass                                 | 95  |
| Condensers                              | 220 |
| Conductivity meters                     | 170 |
| Testers                                 | 170 |
| Laboratory conductivity-meters          | 171 |
| Conductivity cells/Accessories          | 173 |
| Connectors/Adapters                     | 222 |
| Controllers, accessories                | 206 |
| Coupling staining jar                   | 28  |
| Counters                                | 30  |
| Counting chambers                       | 311 |
| Coverglasses                            | 313 |
| Cover slides                            | 24  |
| Crucibles, lids, porcelain              | 58  |
| Crucibles, low form, porcelain          | 58  |
| Crucibles, medium form, porcelain       | 57  |

|                                 |    |
|---------------------------------|----|
| Crucibles, tall form, porcelain | 57 |
| Cuvettes and trays              | 30 |
| Cuvettes, plastic               | 30 |
| cuvettes, glass                 | 31 |
| Boxes, SS                       | 32 |
| Baskets, SS                     | 32 |

### D

|                                 |     |
|---------------------------------|-----|
| Demineralizers                  | 225 |
| Demineralizers, accessories     | 225 |
| Demonstration dynamo AC/DC      | 287 |
| Dessicators                     | 8   |
| With stopcock                   | 8   |
| Without stopcock                | 9   |
| Disks                           | 9   |
| Accessories                     | 9   |
| Digester apparatus for trichina | 310 |
| Dissolving kits                 | 94  |
| Dissolved oxygen analyzer       | 181 |
| Distillers                      | 226 |
| Distillers, accessories         | 227 |
| Dissecting needles              | 88  |
| Distillation columns            | 222 |
| Draining racks                  | 301 |
| Dropping bottles                | 51  |
| Glass                           | 51  |

### E

|                                   |     |
|-----------------------------------|-----|
| Electric field apparatus          | 286 |
| Electronic controllers            | 206 |
| Electrophoresis cells             | 303 |
| Embedding                         | 26  |
| Embedding cassettes               | 26  |
| Embedding moulds                  | 27  |
| Evap. Dishes with spout, glass    | 56  |
| Evap. Dishes without spout, glass | 56  |
| Extractor bodies                  | 224 |

### F

|                                      |     |
|--------------------------------------|-----|
| Feather blades                       | 307 |
| Filtration crucibles                 | 232 |
| Gooch                                | 232 |
| Force table                          | 277 |
| Forceps, curved                      | 89  |
| Forceps, special                     | 90  |
| Forceps, straight                    | 90  |
| With porous plates                   | 232 |
| Filter paper                         | 236 |
| Standard                             | 236 |
| Qualitative, very slow               | 237 |
| Qualitative, slow                    | 237 |
| Qualitative, medium                  | 238 |
| Qualitative, fast                    | 240 |
| Qualitative, very fast               | 242 |
| Quantitative, slow                   | 243 |
| Quantitative, medium                 | 243 |
| Quantitative, fast                   | 244 |
| Quantitative, very fast              | 245 |
| Glass fiber                          | 245 |
| Membrane filters                     | 246 |
| Reams                                | 248 |
| Others                               | 248 |
| Flasks                               | 40  |
| Destilación                          | 338 |
| Erlenmeyer                           | 338 |
| Kitasatos                            | 356 |
| Erlenmeyer, glass                    | 40  |
| Evaporación                          | 339 |
| Flat bottom, glass                   | 41  |
| Round bottom, glass                  | 41  |
| Fondo plano, esmerilados             | 340 |
| Fondo redondo, esmerilados           | 340 |
| Forma corazón                        | 341 |
| Volumetric flasks                    | 64  |
| Free fall apparatus                  | 277 |
| Freezing box                         | 32  |
| Funnels                              | 233 |
| Short stem, glass                    | 233 |
| Short stem, plastic                  | 233 |
| Buchner, porcelain                   | 233 |
| Buchner, glass                       | 234 |
| Funnels for liquid transfer, plastic | 235 |

### G

|                           |     |
|---------------------------|-----|
| Gas kinetics theory model | 283 |
| Gauze iron wires          | 79  |
| Glass apparatus           | 214 |
| Glass markers             | 95  |

|                             |     |
|-----------------------------|-----|
| Glasses                     | 293 |
| Gloves                      | 296 |
| Graduated pipettes          | 65  |
| Class A with bulb, glass    | 65  |
| Class A without bulb, glass | 66  |
| Class B with bulb, glass    | 66  |
| Class B without bulb, glass | 66  |

## H

|                                      |     |
|--------------------------------------|-----|
| Hartl disk                           | 281 |
| Hausser Gedigk staining jar          | 28  |
| Heating mantles                      | 155 |
| Mantles with stirring                | 155 |
| Mantles without stirring             | 155 |
| Hellendahl staining jar              | 27  |
| High capacity centrifuges            | 107 |
| Bench top                            | 107 |
| Accessories, adapters                | 107 |
| Histology bath for paraffin sections | 306 |
| Hot plate for histology              | 306 |
| Hydrometers                          | 177 |
| Alcoholometers                       | 177 |
| Areometers                           | 177 |
| Hydrometers                          | 178 |
| Saccharometers                       | 178 |
| Mustimeters                          | 179 |
| Liquid hydrometers                   | 179 |
| Pycnometers                          | 179 |

## I

|                       |     |
|-----------------------|-----|
| Incineration capsules | 59  |
| Incineration cuvettes | 60  |
| Inclined plane        | 277 |
| Inoculating loops     | 29  |
| ISO bottles           | 42  |
| Clear glass           | 42  |
| Amber glass           | 43  |
| Iron filling, fine    | 284 |

## J

|                       |     |
|-----------------------|-----|
| Jars                  | 39  |
| Plastic, moulded grad | 39  |
| Porcelain             | 39  |
| Joule's calorimeter   | 282 |

## L

|                   |     |
|-------------------|-----|
| Laboratory jacks  | 72  |
| Laplace's rail    | 285 |
| Lid for cassettes | 27  |

## M

|                              |     |
|------------------------------|-----|
| Magdeburgo hemispheres       | 278 |
| Magnetic field demonstrators | 285 |
| Magnetic stirrers            | 185 |
| With heating, analogical     | 185 |
| With heating, digital        | 186 |
| Without heating, analogical  | 187 |
| Without heating, digital     | 189 |
| Accessories                  | 189 |
| Magnets and rods             | 191 |
| Cylindrical magnets          | 191 |
| Oval magnets                 | 191 |
| Octagonal magnets            | 191 |
| Other magnets                | 192 |
| Stirring rods                | 192 |
| Magnifying glasses           | 148 |
| Hand                         | 148 |
| Talbe                        | 148 |
| Thread counters              | 148 |
| Manifolds                    | 229 |
| Manual controllers           | 206 |
| Masks                        | 296 |
| Measuring cylinders          | 62  |
| Class A, tall form, glass    | 62  |
| Class B, tall form, glass    | 63  |
| Class B, tall form, plastic  | 6   |
| Melde's apparatus            | 279 |
| Membrane pumps               | 252 |
| Microhaematocrit capillaries | 313 |
| Microhematocrit centrifuges  | 103 |
| Bench top                    | 103 |
| Accessories                  | 104 |
| Microtomes                   | 304 |
| Micropipettes                | 208 |
| Adjustable volume            | 208 |
| Fixed volume                 | 209 |

|                                    |     |
|------------------------------------|-----|
| Multichannel                       | 210 |
| Repeater pipettes                  | 210 |
| Electronic pipettes                | 210 |
| Stands                             | 210 |
| Microscopes                        | 110 |
| Education                          | 110 |
| Professional                       | 111 |
| Digital                            | 113 |
| Fluorescence                       | 114 |
| Polarization                       | 115 |
| Metallurgical                      | 116 |
| Inverted biological                | 117 |
| Operation                          | 118 |
| Accessories, condensers            | 120 |
| Accessories, phase contrast        | 120 |
| Accessories, polarization          | 120 |
| Accessories, objectives            | 121 |
| Accessories, eyepieces             | 121 |
| Accessories, others                | 121 |
| Milk analyzer, Lactoscan SP        | 309 |
| Minicentrifuges                    | 102 |
| Minicentrifuges                    | 102 |
| Accessories                        | 103 |
| Models                             | 256 |
| Anatomy                            | 256 |
| Botanics                           | 264 |
| Zoology                            | 266 |
| Astronomy                          | 267 |
| Molecular kits                     | 268 |
| Mortars                            | 6   |
| With pestle, glazed, porcelain     | 6   |
| With pestle, not glazed, porcelain | 6   |
| With pestle, glass                 | 6   |
| With pestle, agate                 | 6   |
| Pestles, standard shape, porcelain | 7   |
| Pestles, glass                     | 7   |
| Pestles, agate                     | 7   |
| Jars f/mills, agate                | 7   |
| Balls                              | 8   |
| Multidimensional shakers           | 195 |
| Oscillating                        | 195 |
| Roll and tilt                      | 196 |
| Rotative                           | 197 |
| Rotative, accessories              | 197 |
| 3 D                                | 198 |
| Orbital                            | 199 |
| Linear                             | 200 |
| Orbital and linear, accessories    | 201 |
| Multiparametric analyzer           | 182 |
| Newton colour disks                | 280 |

## O

|                         |     |
|-------------------------|-----|
| Optical bench           | 280 |
| Ovens                   | 150 |
| Incubators              | 150 |
| Drying ovens            | 150 |
| Incubators, accessories | 151 |
| Overhead stirrers       | 202 |
| Stirring heads          | 202 |
| Accessories             | 203 |

## P

|                                  |     |
|----------------------------------|-----|
| Paddle blenders                  | 308 |
| Paraffin dispensing unit         | 306 |
| Pasteur pipettes                 | 68  |
| pH-meters                        | 167 |
| Testers                          | 167 |
| Laboratory pH-meters             | 168 |
| Electrodes and accessories       | 169 |
| pH paper                         | 170 |
| Physics                          | 279 |
| Mechanics and fluids             | 279 |
| waves and sound                  | 280 |
| Lights and optics                | 282 |
| Thermology                       | 284 |
| Magnetism and electrostatics     | 286 |
| Electricity and electronics      | 288 |
| Prepared slides                  | 269 |
| Animal histology                 | 269 |
| Plant histology                  | 270 |
| Zoology                          | 273 |
| Minerals                         | 275 |
| Slide sets                       | 275 |
| Petri dish                       | 29  |
| Pipette pumps                    | 207 |
| Polarimeters                     | 137 |
| Polarimeters                     | 137 |
| Polarimeters, calibration pieces | 138 |
| Accessories                      | 138 |
| Power supply for electrophoresis | 304 |
| Power supply for spectral tubes  | 281 |
| Protection paper                 | 296 |

## R

|                      |     |
|----------------------|-----|
| Racks and supports   | 14  |
| For tubes, plastic   | 14  |
| For tubes, metal     | 16  |
| For tubes, PVC       | 17  |
| For microtubes       | 18  |
| For pipettes         | 19  |
| For flasks           | 19  |
| For funnels          | 20  |
| Refraction disk      | 281 |
| Refractometers       | 139 |
| Abbe                 | 139 |
| Hand, Brix scale     | 139 |
| Hand, salinity       | 142 |
| Hand, oenology       | 143 |
| Hand, batteries      | 144 |
| Hand, clinical       | 145 |
| Hand, others         | 145 |
| Rings, open          | 77  |
| Rings, closed        | 78  |
| Rods without thread  | 78  |
| Rotary evaporators   | 227 |
| Rubber fillers/teats | 207 |

## S

|                              |     |
|------------------------------|-----|
| Scissors                     | 92  |
| Shcieferdecker staining jar  | 28  |
| Spectral tubes               | 282 |
| Spot plates                  | 29  |
| Staining jar                 | 28  |
| Stands                       | 72  |
| Stoppers f/glass bottles     | 49  |
| Stoppers f/plastic bottles   | 50  |
| Scalpels/blades              | 165 |
| Separating funnels           | 235 |
| Squibb                       | 235 |
| Gilson                       | 235 |
| Cylindrical                  | 236 |
| Shoe covers                  | 297 |
| Showers and eyewashes        | 297 |
| Single-rotor centrifuges     | 99  |
| Bench top, analogical        | 99  |
| Bench top, digital           | 99  |
| Accessories                  | 101 |
| Slide storage                | 25  |
| Slides                       | 22  |
| Soxhlet extractors           | 216 |
| Soxhlet extractors, thimbles | 217 |
| Spatule/spoons               | 82  |
| Spoon-spatula                | 82  |
| Spoon-spatula, micro         | 84  |
| Spatula                      | 84  |
| Double spatula               | 85  |
| Double spatula, micro        | 85  |
| Spoons                       | 85  |
| Double spoons                | 86  |
| Scoops                       | 86  |
| Spectrophotometers           | 127 |
| Visible                      | 127 |
| UV/Visible                   | 128 |
| Checking standars            | 131 |
| Accessories                  | 132 |
| Cells, glass                 | 133 |
| Cells, quartz                | 135 |
| Spring balances              | 163 |
| Stabilizing rings            | 95  |
| Stations                     | 297 |
| Stereomicroscopes            | 122 |
| Education                    | 122 |
| With zoom                    | 123 |
| Accessories, objectives      | 125 |
| Accessories, eyepieces       | 125 |
| Accessories, supports        | 125 |
| Accessories, others          | 125 |
| Stoppers                     | 20  |
| Glass                        | 20  |
| Conical shape, rubber        | 21  |
| Perforated, rubber           | 21  |
| Borers                       | 21  |
| Stopwatches                  | 176 |
| Syringe filters              | 250 |

## T

|                                |     |
|--------------------------------|-----|
| Tanks                          | 51  |
| With dispenser, plastic        | 51  |
| Without dispenser, plastics    | 53  |
| Table protectors               | 298 |
| Thermal conductivity apparatus | 282 |
| Thermalcycler                  | 301 |

|                             |     |
|-----------------------------|-----|
| Thermometers                | 173 |
| Solid stem                  | 173 |
| Enclosed scale              | 173 |
| With metal probe            | 174 |
| Room temperature            | 174 |
| For refrigerators           | 175 |
| Others                      | 176 |
| Timers                      | 177 |
| Tips and other consumables  | 210 |
| 10 µl                       | 210 |
| 200 µl                      | 210 |
| 1000 µl                     | 210 |
| 2/5/10 ml                   | 210 |
| Tongs f/beakers, tubes      | 81  |
| Tongs f/crucibles, capsules | 80  |
| Transiluminator             | 304 |
| Triangles                   | 79  |
| Tripod stands               | 78  |
| Tubes                       | 10  |
| Test tube                   | 10  |
| Centrifuge tubes            | 11  |
| Culture tubes               | 11  |
| U Tubes                     | 12  |
| Tube caps                   | 12  |
| Microtubes                  | 13  |
| Others                      | 13  |
| Tubing f/laboratory         | 81  |
| Tuning forks with box       | 279 |

## U

|                         |     |
|-------------------------|-----|
| Universal centrifuges   | 105 |
| Bench top               | 105 |
| Bench top, refrigerated | 106 |
| Accessories, rotors     | 106 |
| Unstrasound baths       | 298 |
| Urine containers        | 313 |
| U-tube manometer        | 278 |

## V

|                                     |     |
|-------------------------------------|-----|
| Van de Graaf generator              | 285 |
| Vials                               | 53  |
| Injection                           | 53  |
| For pills                           | 53  |
| Closures for vials                  | 54  |
| Vibrator generator with accessories | 279 |
| Vibrating mixers                    | 192 |
| For tubes                           | 192 |
| For microplates                     | 194 |
| Accessories                         | 194 |
| Videocameras                        | 126 |
| Videocameras C-mount                | 126 |
| Volumetric flasks                   | 64  |
| Class A, with stopper, glass        | 64  |
| 2 marks, glass                      | 65  |
| Volumetric pipettes                 | 66  |
| 1 mark, class A, with bulb          | 66  |
| 1 mark, class A, without bulb       | 67  |
| 1 mark, class B, with bulb          | 67  |
| 1 mark, class B, without bulb       | 67  |
| 2 marks, class A, with bulb         | 67  |
| 2 marks, class B, without bulb      | 68  |

## W

|                                   |     |
|-----------------------------------|-----|
| Water jet pumps                   | 252 |
| Wash bottles                      | 51  |
| Narrow mouth                      | 51  |
| Stoppers                          | 51  |
| Wave form helix                   | 278 |
| Weights E2                        | 165 |
| Weights F1                        | 166 |
| Weights F2                        | 166 |
| Weights M1                        | 167 |
| Wimshurst electrostatic generator | 286 |
| Wine pipettes                     | 68  |
| Wiping paper                      | 300 |

The group:

**AUXILAB S.L.**

Material de laboratorio  
Laboratory supplies

Pol. Morea Norte Calle D  
31191 Beriain, Navarra  
T. 948 31 05 13  
F. 948 31 20 71  
Email: correo@auxilab.es  
www.auxilab.es



23 Rue Ampère, ZI de Villemilan  
91325 Wissous (France)  
T.: +33 1 69 53 67 67  
F.: +33 1 69 30 72 55  
Email: rogosampaic@rogosampaic.com  
www.rogosampaic.com

Distributed by:

