



Assistent-Precision

Catalogue 32



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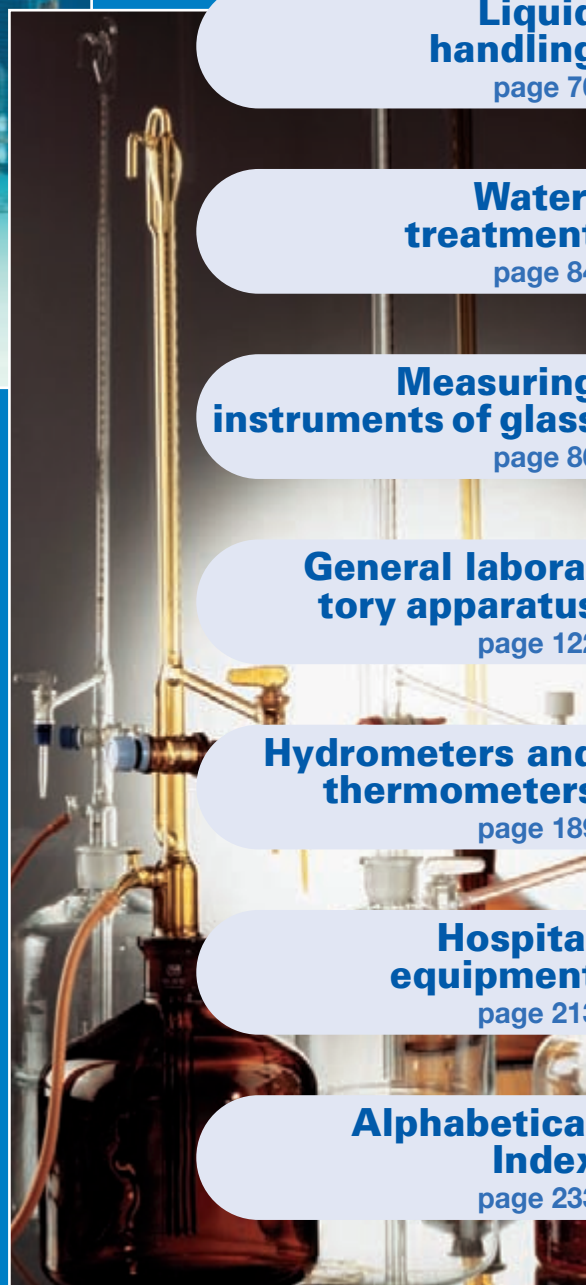
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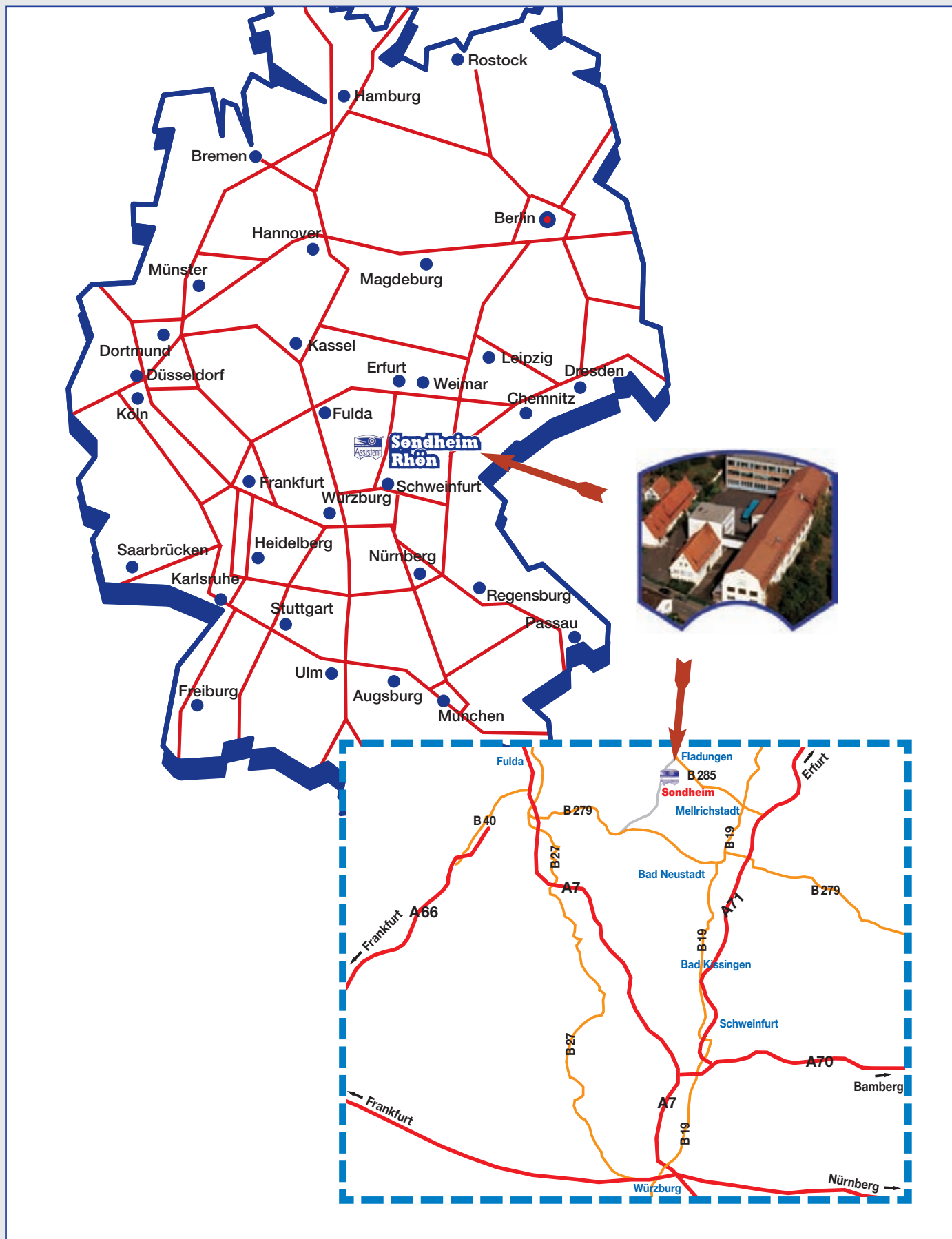
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The best way to ...





Laboratory glassware, apparatus and precision instruments – hospital equipment



Заказы направлять:

Компания СИМАС

т/ф: (495) 980-29-37 (многоканальный), 781-21-58,
319-22-78, 311-22-09. www.simas.ru. info@simas.ru.

117405, Россия, Москва, Варшавское шоссе, д.125, стр. 1

Glaswarenfabrik Karl Hecht KG

97647 Sondheim/Rhön
Germany

Tel. + 49 (0) 97 79 / 8 08-0

Fax + 49 (0) 97 79 / 8 08-88

Internet: <http://www.hecht-assistent.de>

E-Mail: info@hecht-assistent.de

Karl Hecht Assistent GmbH
CH 8595 Altnau / TG
Switzerland

Tel. (0 71) 6 95 22 22

Fax (0 71) 6 95 22 27

E-Mail: karl.hecht@swissonline.ch

Hecht-France

F 91 430 IGNY/Paris

Z. I. 5, Rue Lavoisier

Tel. (01) 69 35 36 50

Fax (01) 60 19 07 15

E-Mail: epp3@wanadoo.fr

Karl Hecht Ges. mbH
A 6122 Fritzens/Tirol
Austria

Fischerweg 1

Tel. 0 52 24 / 5 26 46-0

Fax 0 52 24 / 5 76 79



Our Assistent headquarter



The “Assistent headquarter” of Glaswarenfabrik KARL HECHT in Sondheim is situated in the beautiful landscape of the Bavarian “Highlands” Rhoen, north of Wuerzburg. From here – and also from our three branches – we deliver to countries all over the world. Our complete range of precision instruments and apparatus for physician and laboratories is listed in this General Catalogue.

Available at your dealer.

Our Quality Proof



CERTIFICATE

The TÜV CERT Certification Body
of TÜV Hessen

hereby certifies in accordance with
TÜV CERT-procedure that



**Glaswarenfabrik
Karl Hecht KG
97647 Sondheim /Rhön**

has established and applies a
quality management system for

**“ASSISTENT” Precision Glass Instruments and
Apparatus for Physicians and Laboratories**

An audit was performed, Report No. **4044 2967**

Proof has been furnished that the requirements according to

DIN EN ISO 9001 : 2000

are fulfilled. The certificate is valid until **5. January 2007**

First certificate October 1995

Certificate Registration No. **73 100 146**



Darmstadt, 6th January 2004

Validity verifiable
www.tuevclub.com
Cert-GB-01/2001

TÜV CERT - Certification Body
of TÜV Hessen



View into our...



... Product Range





Quality significations

“ASSISTENT” Glass measuring equipment

covers a wide section of the “ASSISTENT” range. Please refer in particular to the article group “measuring instruments of glass”. Following information may be useful:

“ASSISTENT-PERMANENT” graduation is subject to regular testing controls as to color-fastness, accuracy etc.

Blue, white and red graduations

are fused onto the glass surface and are fired-in. Therefore they are acid- and alkali-resistant.

Amber graduation

is fused into the glass surface and thereby provides absolute durability.

The most modern gauging equipment has steadily improved the accuracy of “ASSISTENT” measuring instruments of glass. Following types are available:

standard type

1.5 times the tolerance for classe A of the total capacity (therefore more accurate than Class B)

HE type

with certificate of conformity with mark HE and tolerance indication on each instrument and mark HE on the packing respectively.

Conformity certified measuring instruments comply with the regulations of the German Federal Authority of Weights and Measures and the DIN standard specifications respectively.

CE This sign certifies that the product meets the requirements of the EEC directive (European Community).

Calibration to contain: marked “IN”

The quantity of liquid contained serves as measuring basis for calibration. We recommend to rinse capillary pipettes “calibrated to tip”.

Calibration to deliver: marked “EX”

The quantity of liquid delivered serves as measuring basis for calibration. Don't blow out residual liquid (except “blow-out pipettes”, which are marked as such).

Partial delivery (calibrated between zero at top and lowest mark, not to tip)

The above is applicable as well. Adjust meniscus to lowest mark (e.g. enzyme test pipettes, burettes, volumetric pipettes with 2 marks).

General information for using measuring and volumetric pipettes and burettes:

Fill outflow burettes 5 mm, measuring and volumetric pipettes 10 mm above the desired mark. After discharging the liquid to the mark, remove remaining drop from the tip by sliding it off. Hold pipette in upright position and put tip against inner wall of vessel.

Cut off flow of liquid at approx. 10 mm (pipettes) or 5 mm (burettes) above mark to be checked at let balance discharge on completion of waiting time (as stated in this catalogue or on the instrument).

The surface hardened tips of “ASSISTENT” pipettes and burettes are calibrated to achieve volumetric accuracy. They must not be damaged.

Certificate of conformity “H”

The new German regulation of Weights and Measures requires certification of conformity (instead of official testing) for volumetric instruments used for medical, pharmaceutical and commercial measurements (manufacture and testing of drugs).

In general the manufacturer of the instrument is responsible for the conformity.

On demand also an office for Weights and Measures will certify the conformity.

The conformity (symbol “H”) guarantees the compliance of the instrument with the relevant specifications and thereby with the regulations. The symbol “H” stands for conformity and the letters “HE” mean HECHT = HE.

The conformity certification procedure is described in DIN 12 600.

The purchaser is responsible for the procuring, keeping available and using of conformity certified instruments.

The certificate of conformity is valid indefinitely unless otherwise specified by the manufacturer.

The conformity of volumetric instruments is certified by “ASSISTENT” directly on the instrument. In case of disposable micro pipettes, the symbol appears on the packing. For some liquid handling instruments the “HE” symbol appears in the directions for use accompanying the instrument.

Law of medical products

The Law of medical products regulates the putting into circulation of products falling under the rules 93/42/EEC and 98/79/EC. The products have to be marked and distributed within the EC only with a CE-sign.

Responsible for correct putting into circulation is the producer of the products, who has to be indicated on the product itself or on the packaging.

We emphasize, that the law of medical products stipulates the setting up of a system for medical products which enables to trace back their origin and also to report possible occurrences in connection with these products.

IVD Products

Acc. to the regulation 98/79/EG of the EC for In-vitro-Diagnostica (IVD) resp. products have to be marked from the producer within the European community with the CE-sign.

Producer is the responsible person or company mentioned on the products or the packing.

Technical data



Properties of glass types

Glass type	Linear coefficient of expansion α 20/300 °C 10^{-6} K^{-1}	transformation-temperature	Class of chemical durability		
			water resistance DIN ISO 719	acid resistance DIN 12 116	Alkaline solution-resistance DIN ISO 695
AR [®] -/soda-glass	9,0	520 °C	3	1	2
DURAN [®] /borosilicate glass 3.3	3,3	530 °C	1	1	2
FIOLAX [®] (borosilicate glass)	4,9	560 °C	1	1	2

If the description of the items does not include the glass type, the quality is corresponding to the details given for “**AR**[®]-/soda glass”.

DURAN[®] and **FIOLAX**[®] are registered trade marks of SCHOTT GLASWERKE Mainz.

AR[®] is a registered trade mark of SCHOTT-ROHRGLAS GmbH, Bayreuth.

Plastics

PTFE (polytetrafluorethylene)

(e. g. Teflon[®], registered trademark of E. I. DuPont de Nemours, USA) is a selflubricating material with outstanding resistance and wide temperature range, mainly used for stopcock plugs and sleeves.

temperature range:

– 270 °C + 250 °C

Plexiglas[®] (acrylic glass)

is a registred trademark of Roehm, Darmstadt and is being used for various racks, supports and trays. Temperature range: approx + 75 °C.

Detailed data on properties and resistance (published by the producer of the raw material) can be sent on request.

Polyethylene

is the raw material for bottles and containers. It is well established in the lab due to its resistance to a wide range of chemicals.

temperature range:

– 50 + 105 °C HDPE (high density polyethylene)

– 50 + 80/90 °C LDPE (low density polyethylene)

PC (polycarbonate)

e. g. for urinals

temperature range:

– 130 + 130 °C

PP (polypropylene)

e. g. for bottles and measuring cylinders. It has good chemical resistance and physical properties.

temperature range:

0 °C + 135 °C

PVC (polyvinyl chloride)

is used for different type of containers and has a good chemical resistance. Even cold chromosulphuric acid does not attack the material. The acid must however neither be mixed or diluted in PVC-containers. The resulting development of heat would not be tolerated by this material.

temperature range:

– 20 °C + 80 °C

Melamine type 152.7, acc. to DIN 7708

for dishes and trays, odor- and tasteless, non-fragile, dishwasher-proof, resistant against weak acids and alkalis, physiologically unobjectionable acc. to the German Food Law.

SAN (styrene acrylnitrile)

for kidney dishes, sputum cups etc., odor- and tasteless, non-fragile, resistant against cooking and freezing temperatures, physiologically unobjectionable acc. to the German Food Law.

temperature range:

– 40 °C + 70 °C

Tefzel[®]

registered trademark of E. I. DuPont de Nemours, USA.

Viton[®]

registered trademark of E. I. DuPont de Nemours, USA

Subject to change.



Blood Test and Urine Analysis



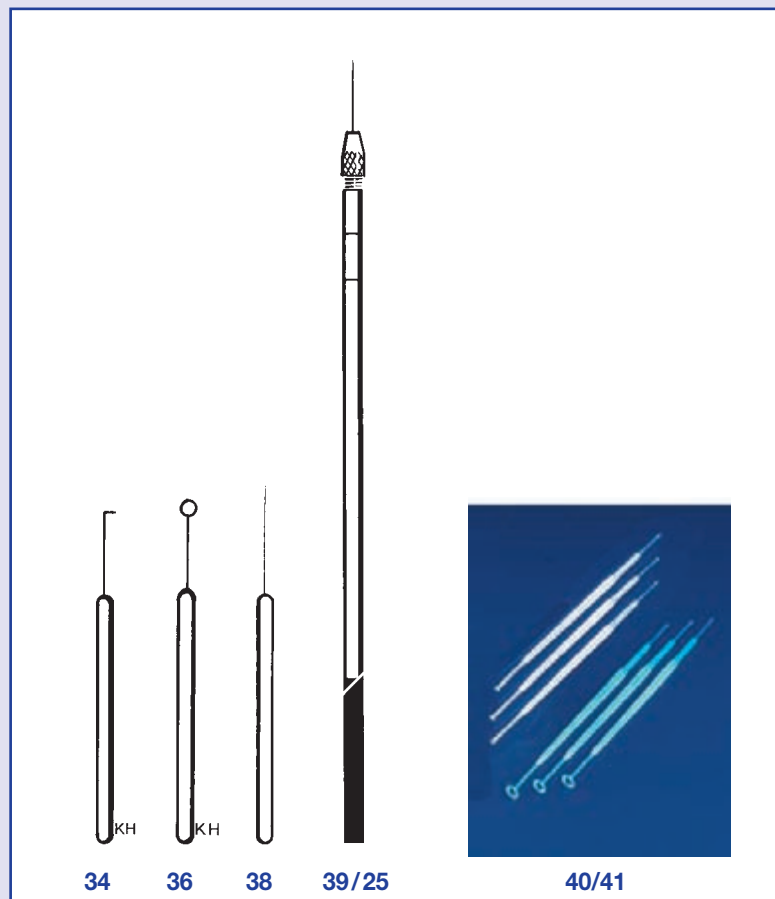
Blood Test and Urine Analysis



“Assistent”-Albuminometers etc.

Loops, hooks and needles of C-metal for blood coagulation tests, for microscopical and bacteriological purposes (smears)

- 33** **Hooks of C-metal**, length approx 55 mm, 0,5 mm thick
- 34** with glass handle, length approx 200 mm
- 35** **Loops of C-metal**
3–4 mm diam.
50 mm length
0,5 mm wire thickness
- 36** with glass handle, length approx 200 mm
- 37** **Needles of C-metal** (dissecting or vaccination), length approx 50 mm, thick approx 0,6 mm
- 38** with glass handle, length approx 200 mm
- 39/16** **Needle holders acc. to Kolle**, of aluminium with plastic handle, sterilizable, approx. 16 cm long
- 39/25** approx. 25 cm long
- 40** **Inoculation loops**
with needle, disposable, for inoculation of nutrient media, polystyrol, Gamma-sterilized,
pack unit 1000 pcs. = 50 bags of 20 pcs.
capacity of loop 1 µl white
- 41** capacity of loop 10 µl blue



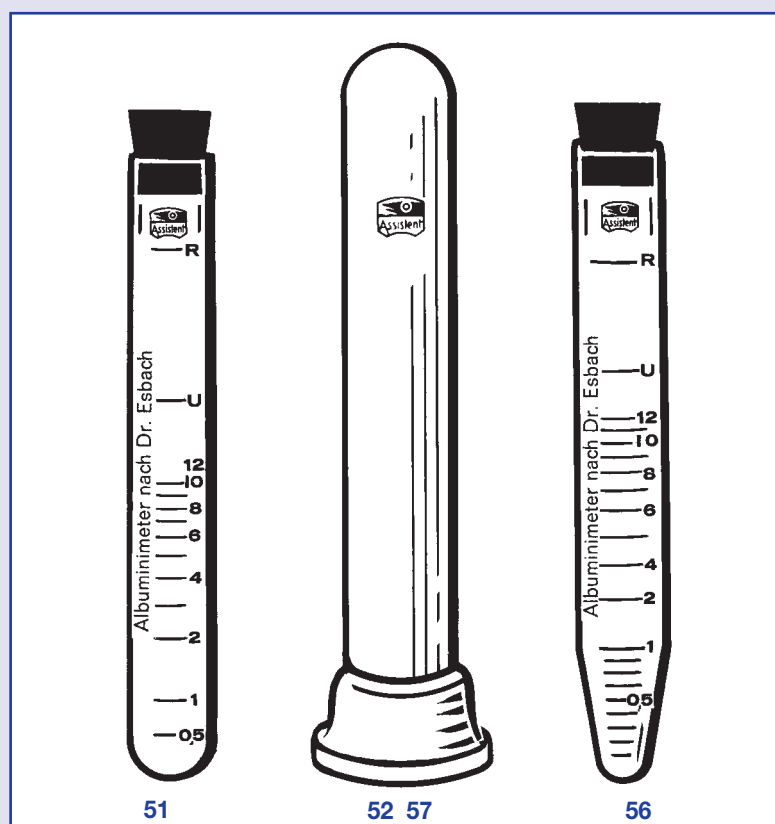
Albuminometer acc. to Esbach with fused white graduation “ASSISTENT-PERMANENT”

round bottom

- 50** glass tube only
- 51** glass tube with rubber stopper
- 52** glass tube with rubber stopper in wooden case, with directions for use

conical bottom

- 55** glass tube only
- 56** glass tube with rubber stopper
- 57** glass tube with rubber stopper in wooden case, with directions for use





Blood Test and Urine Analysis

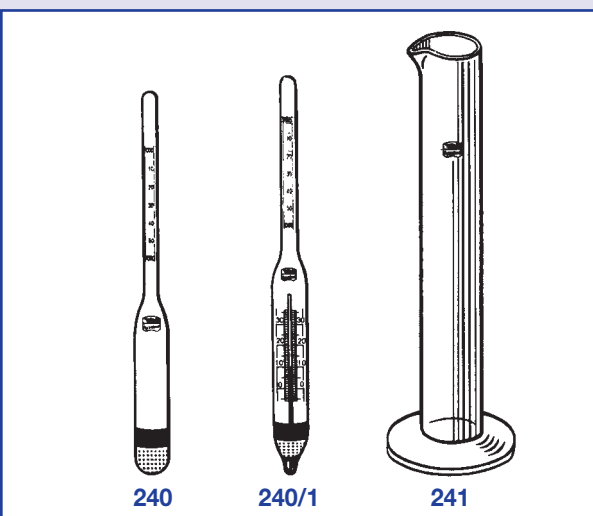


239

“Assistent”-Hydrometers for Urine

- 239** “Assistent” Urinometer, special model
1,000–1,060 : 0,002, length approx. 9 cm, completely assembled with bulb and directions for use in cardboard box

Urinometers are generally supplied with standard reference temperature of +20 °C.



240

240/1

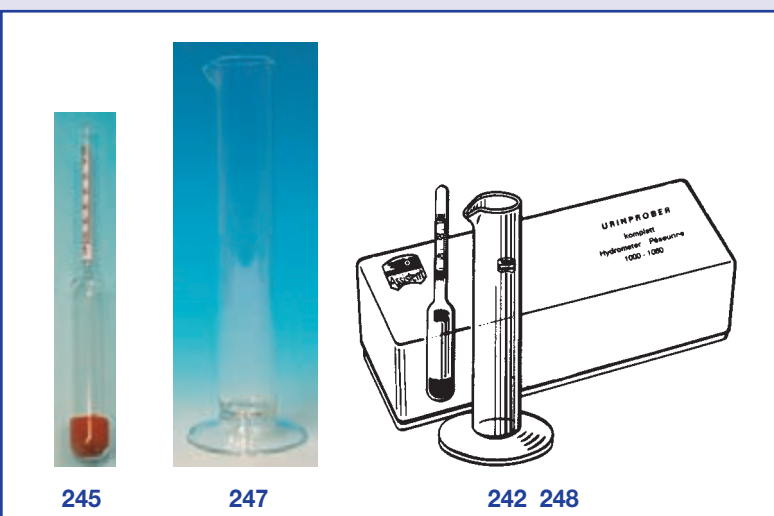
241

“Assistent” Urinometer

1,000–1,060 g/cm³

- 240*** without thermometer, length approx. 15 cm
240/7 dto., tolerance 0,001 €€
- 240/1*** with thermometer, length approx. 17 cm
240/71 dto., tolerance 0,001 €€
- 241** Glass jar with base and spout
height approx. 175 mm for above urinometers
- 242*** Urinometer complete, large model:
hydrometer No. 240 with glass jar No. 241 in cardboard box
- 242/7** dto. €€

* for export outside EC



245

247

242 248

“Assistent” Urinometer, small model (Squibb)

length approx. 9 cm, ref. temp. +20 °C, shot-weighted, each in a tube

- 245*** 1,000–1,060 g/cm³ subdiv. 0,002
245/7 dto., tolerance 0,002 €€
- 247** Glass jar with base and spout
height approx. 100 mm
for urinometers No. 245 and 246
- 248*** Urinometer, complete, small model
hydrometer No. 245 with glass jar No. 247 in cardboard box
- 248/7** dto. €€

* for export outside EC

Blood Test and Urine Analysis



„Assistent“-Counter

- 344 Counter, tally**
Manual counter, four figures,
 with caliper, for mechanical counting up to 9999.

Housing of chromium-plated steel, with finger lever for holding tight the counter.

By the lateral retaining knob, it can be turned back to zero.



344

“Assistent” Electronic memory Counter for Microscope Interpretation of Blood Differentials CE

The traditional manual interpretation of blood differential- requires a high level of concentration which can affect, adversely, the accuracy of the resulting differential count. The “Assistent” electronic memory counters facilitate accurate recording of the blood cell differential profile. The microscopic image can be viewed continuously, and the count can be recorded “blind”.

Counting limit: 1000 inputs

Each instrument comes with exact instructions for use.

- 345 “Assistent” Counter AC-8,**
 with 8 keys
- 346 Microscope connection** for “Assistent” counters,
 ins. diam. of adapter 3,4 cm



346

345

- 345/12 “Assistent” Counter AC-12,**
 with 12 keys

- 345/15 “Assistent” Counter AC-15,**
 with 15 illuminated keys, including four defined
 programmes and one free counting-programme:

LEUKO,	MYELO,	RETI,	FREE
	RBC		

- 345/615 “Assistent” Counter AC-15 PC,**
 with 15 keys, for connection to PC

- 345/912 Assistent" Counter AC-12**
 with 12 keys, integral rechargeable battery and
 mains supply unit. Battery operation and portability
 extend the usefulness to fieldwork, e. g. traffic
 counts, frequency investigations etc.



345/15

345/912

345/12



Blood Test and Urine Analysis

“Assistent” Shaking and Mixing Equipment

“Assistent” Vibrator – Electric pipette shaker, CE
220 volts, 50 hertz, with universal safety plug and directions
for use.

340 for 4 blood diluting pipettes

342 for 2 blood diluting pipettes



340



342

Blood Test and Urine Analysis



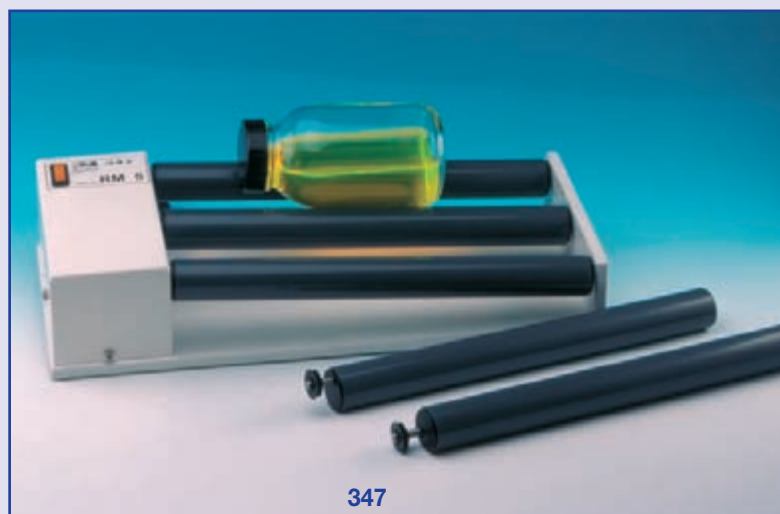
- 347** "Assistent" Rotating mixer, CE
with 5 synchronous turning eccentric PVC-rolls
to take out.

The five PVC-rolls are designed as synchronous rotating surface for sample bottles, especially for samples of whole blood for haematological determinations and for the gentle mixing of other cell suspensions.

For large containers the rolls can be taken out, further optional rolls without eccentric turning (only rotating) can be inserted.

The rotating mixer is also suitable for preventing sedimentation of other samples, such as paint, lacquer, oil, cosmetics.

Specification: 230 volts 50 hertz,
 with cable and safety plug
 36 rpm
 length: 430 mm
 width: 180 mm
 height: 95 mm
 length of rolls: 320 mm
 weight: ca. 3,7 kg
 charge: max. 2.0 kg



347

- 348** "Assistent" Rotating mixer, CE
with 5 synchronous turning eccentric PVC-rolls
as no. 347, but with fixed rolls



348

- 348/20** "Assistent" Rotating mixer, CE
as no. 348, but with shorter rolls

Specifications: Length: 332 mm
 Width: 180 mm
 Height: 95 mm
 length of rolls 200 mm
 230 volts 50 hertz, 32 rpm.
 with cable and safety plug



Blood Test and Urine Analysis



348/1

348/1 "Assistent"-Rocking shaker, €€

The rocking shaker comes with an illuminated "ON/OFF" switch and a large platform (420 x 350 mm) with a special, anti-slip, adhesive mat for holding and gently rocking Petri dishes, microtiter plates and other small containers. The speed is electronically feedback controlled with a range of 10–100 oscillations per minute for continuous use.

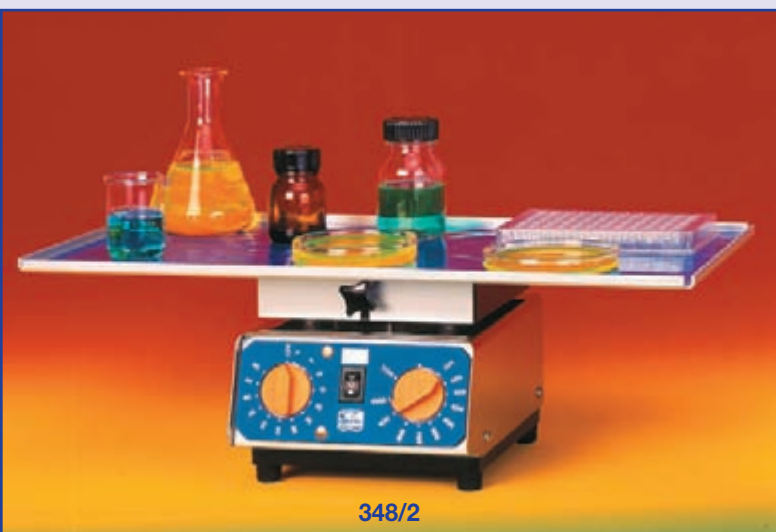
The rocker platform is designed to pivot in the middle axis and can be adjusted to give an angular tilt of 3, 6, 9 or 12° (On delivery it is adjusted to 12 degrees).

Technical Data:

Power supply: 220 Volt, 50 hertz
Cable: approx. 1,5 mtr with plug
Motor: Brushless DC motor with electronics feedback control

Size of top plate: 420 x 350 mm
Total dimensions: 520 x 350 x 100 mm high
Shaking frequency: Steplessly adjustable 10–100 oscillations per minute

Shaking movement: Rocking
Oscillating angele range: Adjustable for 3, 6, 9 oder 12°
Weight: approx. 3,8 kg



348/2

348/2 Shaker with platform attachment, €€

The apparatus is operating with a capacitor motor. The shaking speed is opto-electronically measured and electronically regulated. The receiving device for the shaking platform attachment is driven by an eccentric mechanism of 3 mm amplitude (from point to point). The rotations of the eccentric driveshaft are transmitted to the receiving device by strong ball-rolls. Four tubular connecting pieces prevent turning of the receiving device. Contrary to the traditional one-point-suspension these silicone connecting pieces adapt themselves symmetrically to the center of the rotation. This results in a uniform, horizontal and circular rotation at every point of the receiving device. The toggle switch permits different functions: "0" = "OFF", "I" = "continuous operation" and "II" = "timer". The timer can be regulated from 0 to 60 minutes.

The shaking platform attachment is equipped with an anti-slip rubbery mat which holds Petri dishes, microtiter plates, small beakers and flasks securely in place. The mat may be easily cleaned with water and soap.

Technical Data:

Steplessly adjustable speed from 100 to 1100 r.p.m.
Power supply: 230 Volt, 50 Hz, 40 Watt
Cable: approx. 1,5 mtr with plug
Dimensions of shaker: approx 150 x 160 x 103 mm (l x w x h)

Dimensions of shaking platform attachment: approx 200 x 400 mm

Total weight approx: 4,7 kg (drive unit 4060 g, shaking platform attachment 650 g)

Blood Test and Urine Analysis



350 "Assistent" Rotary mixer, CE

This device comprises a sturdy base section which houses the drive, electrical components and bearing for the eccentric disc. The eccentric disc can be screwed onto the bearing journal by means of a screw thread. This screw thread is designed in such a way that the eccentric disc is tightened by the drive. The eccentric disc features 3 circles of 20 holes each to accommodate 3 different sample bottle sizes: 10 mm, 12,5 mm and 15,5 mm

The sample bottles inserted in the eccentric disc are held in position by means of an elastic clamping device. The basic frame is finished in an acid-proof coating and the eccentric disc is made of a plastic material extensively resistant to chemicals and solvents

This rotary mixer operates on the principle that during one revolution of the eccentric disc the sample bottles rotate once around their own axis, resulting in an oscillating movement of the bottle contents from top to bottom and back again. The eccentric disc turns at a fixed speed of 6 rpm which also contributes towards the gentle mixing of samples

Specifications:

230 volts, 50 – 60 hertz, 6 watts
 approx. 200 x 200 x 250 mm (L x W x H)
 Diam. of eccentric disc: 220 mm
 Weight: approx. 2,5 kg



350

352 "Assistent" Mini-centrifuge Sprout™ CE

This compact mini-centrifuge is ideal for quick spin-downs of reaction-tubes (micro filter cell-separations and HPLC-samples). Easy to use functions and ergonomically designed lid with start/stop-function for one-handed operation. Rotor accelerates quickly to 6000 rpm (2000 x g).

As a safety feature, the motor will not operate if the lid is open

Rubber footplate keeps unit stable and deadens vibration

smooth durable easy to clean ABS finish

with tube rack for micro centrifuge tubes;

with 3 rotors of polycarbonate in storage case

easy rotor change with included Allen Wrench (rotor 1 attached in the unit)

1: circular, for 6 x 1,5 and 2,0 ml tubes, with included adapters for 6 x 0,4 and 0,5 ml tubes

2: circular, for 3 x 0,4 and 0,5 ml tubes and 3 x 1,5 and 2,0 ml tubes

3: rectangular, for two 8 x 0,2 ml PCR tube-strips or 16 individual 0,2 ml PCR tubes

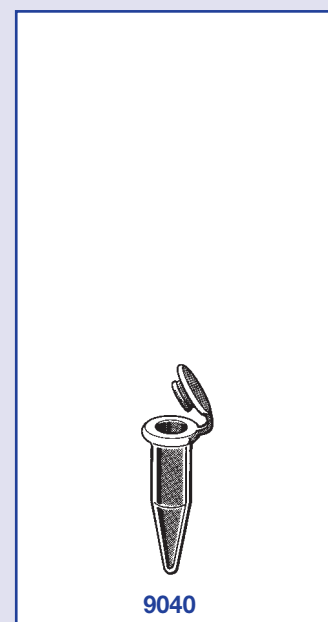
230 V, 50/60 Hz, 0,1 A, with Schuko-cord

Dimensions: 153 x 128 x 104 mm (l x w x h)

weight: 795 g



352



9040

9040 "Assistent" Reaction tubes of polypropylene with cover, approx. 1,5 ml

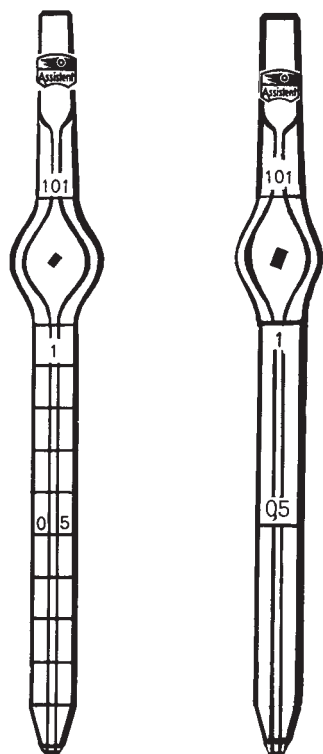


Blood Test and Urine Analysis

“Assistent” Blood Diluting – Blood Sedimentation – Enzyme Test and Capillary Pipettes

General features and advantages:

- thick wall, solid finish
- improved stability by acid and alkali resistant fused
- graduation “ASSISTENT-PERMANENT”
- highly contrasting scale, clearly legible figures
- modern production methods ensure that glass surface is not attacked by etching or engraving
- colour-coded in accordance with ISO Standards
- enforced, fire polished ends and calibrated faceted tips
- especially selected raw material for each type of pipette



355

356

„Assistent“ Blood diluting pipettes acc. to Thoma white back, fused blue graduation

“ASSISTENT-PERMANENT” – DIN 12 750

Packing: 10 in a box

.../7 €

.../ standard type, precisely adjusted, for export outside EC

Blood diluting pipettes

acc. to Thoma for red corpuscles (erythrocytes) 1:101 (RBC pipettes)

standard type

355 with subdivision, 11 marks

356 with 3 marks 0,5–1–10

€

355/7 with subdivision, 11 marks

356/7 with 3 marks

Blood diluting pipettes

acc. to Thoma for white corpuscles (leucocytes) 1:11 (WBC pipettes)

standard type

357 with subdivision, 11 marks

358 with 3 marks 0,5–1–11

€

357/7 with subdivision, 11 marks

358/7 with 3 marks

Pipettes acc. to Malassez-Potain

fused blue graduation “ASSISTENT-PERMANENT”

standard type,

packing: 10 pcs. in a box

359/1 for red corpuscles 1:101

with mark at 1, 2, 3, 4 and 5

for dilutions of 1:100, 1:200, 1:300, 1:400, 1:500

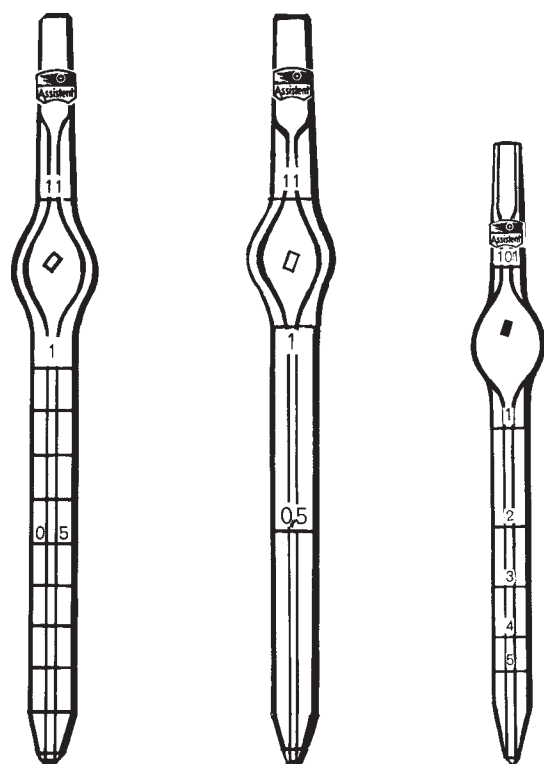
359/7 €

359/2 for white corpuscles 1:11

with mark at 1, 2, 3, 4 and 5

for dilutions of 1:10, 1:20, 1:30, 1:40, 1:50

359/72 €



357

358

359/1

Blood Test and Urine Analysis

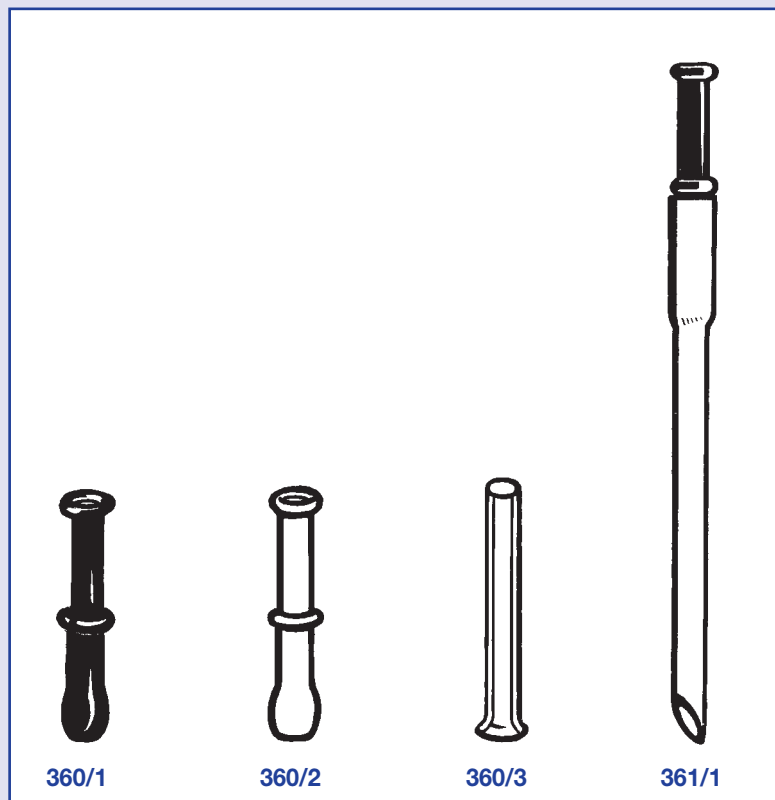


“Assistent” Blood Pipettes and Accessories

- 360/1** Mouthpieces red plastic polystyrol
- 360/2** Mouthpieces white plastic polystyrol
- 360/3** Mouthpieces of clear glass
- 361/1** Mouthpieces red with silicone tubing
- 361/2** Mouthpieces white with silicone tubing
- 361/3** Mouthpieces of clear glass with silicone tubing

According to existing regulations pipetting by mouth is prohibited. We reject any kind of product liability in case of using mouthpiece with rubber tubing.

We recommend our pipetting aid “micro-classic” No. 558 and Micro-Pipex No. 558/1.



„Assistent“-Pipetting aids

558 Pipetting aid “micro-classic”

Micro pipetting aid with suction tube and adapter for disposable micro pipettes with ring mark and other small volume pipettes up to approx. 1 ml.

Recommended for work with a microscope due to the advantageous right-angled position of the pipette. Easy operation.

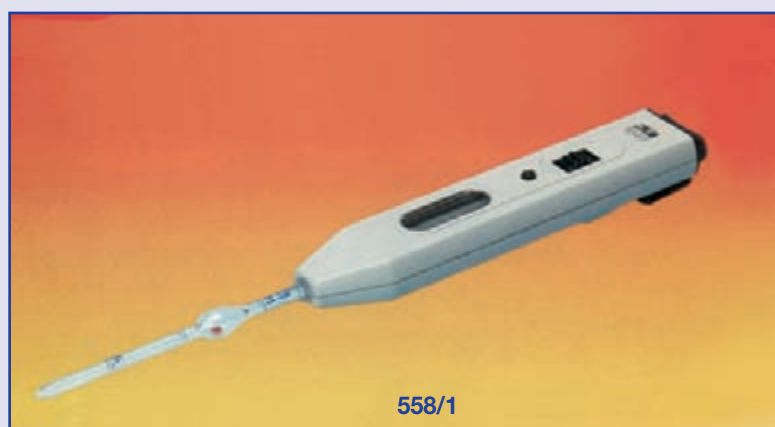
- 557/1** Spare Adapter
- 557/2** Spare Adapter with suction tube, pack of 3 pcs.

Adapter and suction tube are resistant to steam sterilization at +121°C, 2 bar.

558/1 “Assistent” Micro-Pipex, new model

Micro pipetting aid for disposable micro pipettes with ring mark and many other small volume pipettes (RBC and WBC pipettes) and blood sugar pipettes up to 1 ml

- 558/2** Spare suction bellows for above, set of 3

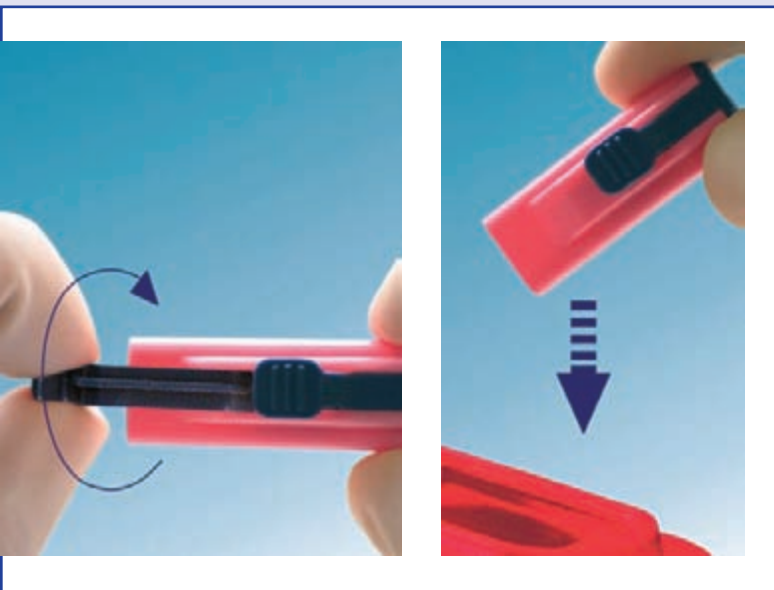


Attention:

The micro pipetting aids may not be used for capillaries, calibrated to contain end to end.



Blood Test and Urine Analysis



„Assistent“-Bloodlancets

For your safety and patient comfort, safe – simple – gentle

Health workers the world over face accidental needle-stick injury while caring for patients, putting themselves at risk to blood borne illnesses including AIDS virus and Hepatitis.

User safety: Needle is fully shielded before and after use

User convenience: Pre-loaded, button operated design

Patient safety: Single-use only – Sterilised by gamma-irradiation at min 25 kGy

Patient comfort: High quality, ultra sharp tri-bevel needle – High speed penetration

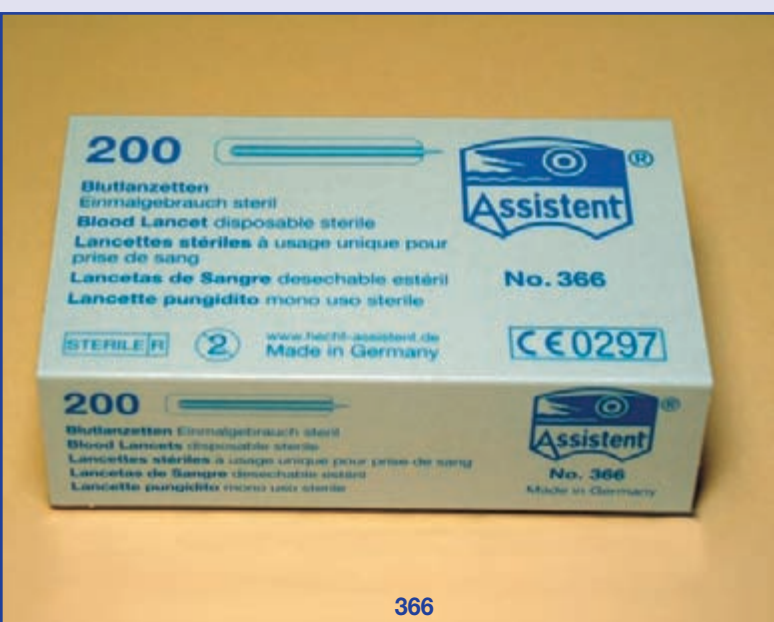
Efficacy: Two needle diameters/three penetration depths to suit most capillary blood requirements

Application: Blood glucose and other in vitro diagnostic tests

Packaging unit: 100 pieces

365	Safety Blood Lancet Safe Lite®				CE
	Gauge size	Colour code	Penetration depth	Recommendation	
365/1	26 g	pink	1,8 mm	Blood glucose monitoring	
365/2	21 g	blue	1,8 mm	thin adult skin, paediatrics	
365/3	21 g	grey	2,4 mm	normal adult skin	
365/4	21 g	green	2,8 mm	thick adult skin, Blood banks, heavier blood flow	

366 **Blood lancets, disposable,** CE
single sealed, sterile packed no danger of infection, optimal sharp point, good handling, made of stainless steel, 200 pcs in a box.



366

Blood Test and Urine Analysis



„Assistent“ Blood Sedimentation Apparatus and Accessories

Blood sedimentation apparatus stand of stainless steel, with tilting device for rapid sedimentation, complete with blood sedimentation pipettes, blood mixing glasses with rubber stopper, special rubber caps (macro method only) and directions for use in a box. Pipettes with fused graduation “ASSISTENT-PERMANENT”

MACRO

- 367/3** with 3 “Assistent” pipettes Westergren, macro method No. 380
- 367/5** with 5 “Assistent” pipettes Westergren, macro method No. 380
- 367/10** mit 10 “Assistent” pipettes Westergren, macro method No. 380

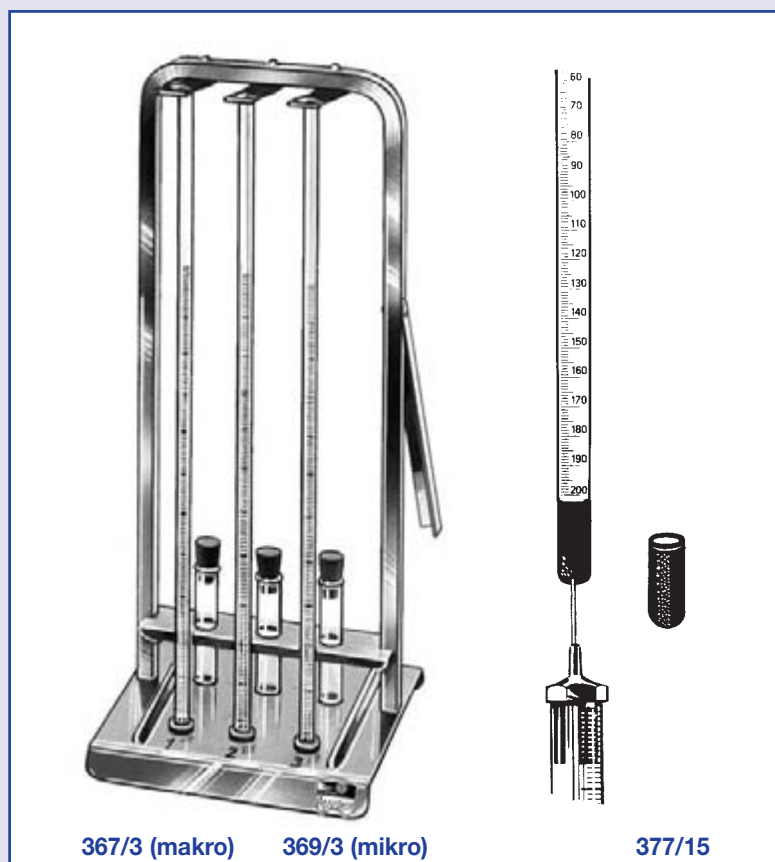
MIKRO

- 369/3** with 3 “Assistent” blood sedimentation pipettes micro method, No. 382 and blood taking pipette No. 383
- 369/5** with 5 “Assistent” blood sedimentation pipettes micro method, No. 382 and blood taking pipette No. 383
- 369/10** with 10 “Assistent” blood sedimentation pipettes micro method, No. 382 and blood taking pipette No. 383

- 377/15** “Assistent” Special rubber caps to be put on the pipette tip for filling by puncturing with syringe needle. Cap can be used up to 20 times, closes automatically after puncturing. Cleaning by short rinsing in cold water. This special rubber cap can be used only with macro blood sedimentation pipettes (see illustration).

This rubber cap and method of filling are recognized and recommended by the Professional Association of Health and Welfare Service.

The normal blood sedimentation stand “Assistent” may be used for the micro blood sedimentation method “Assistent” without any difficulty. The readings are taken as with the standard Westergren method. Comparative examinations have proved that the results of the “Assistent” micro sedimentation method correspond to a large degree with those of the Westergren method. Therefore easy comparison and evaluation of results.

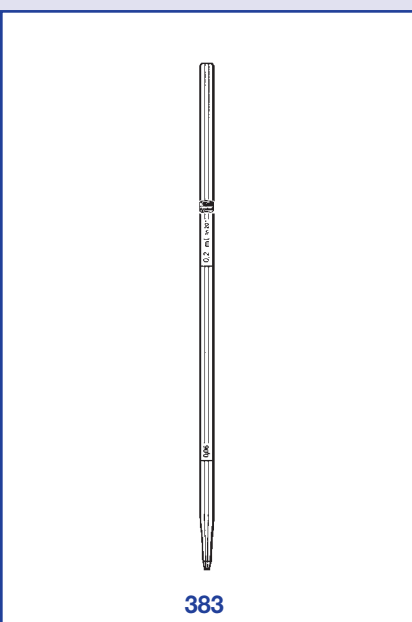




Blood Test and Urine Analysis



370/3 (makro) 375/3 (mikro) 389



383

„Assistent“-Blood Sedimentation Apparatus

Blood sedimentation apparatus wooden stand, varnished, complete with blood sedimentation pipettes, blood mixing glasses with rubber stopper and directions for use in a box. Pipettes with fused graduation “ASSISTENT-PERMANENT” – This model is not designated for rapid sedimentation

MACRO with suction rubber caps

- 370/3** with 3 “Assistent” pipettes Westergren macro method No. 380, with suction rubber caps No. 389
- 370/5** with 5 “Assistent” pipettes Westergren macro method No. 380, with suction rubber caps No. 389

MACRO without suction rubber caps

- 371/3** with 3 “Assistent” pipettes Westergren macro method No. 380
- 371/5** with 5 “Assistent” pipettes Westergren macro method No. 380

“Assistent” Special rubber cap No. 377/15 can also be used for the apparatus No. 371.

The rubber ring holds pipettes at any level. Put the rubber ring on the pipette and place the ring at the suitable height, so that the pipette is clamped tightly. The tip of the pipette will then be sealed safely.

MICRO with suction rubber caps

- 375/3** with 3 “Assistent” blood sedimentation pipettes micro method No. 382, with suction rubber caps No. 389 and blood taking pipette No. 383
- 375/5** with 5 “Assistent” blood sedimentation pipettes micro method No. 382, with suction rubber caps No. 389 and blood taking pipette No. 383

MICRO without suction rubber caps

- 376/3** with 3 “Assistent” blood sedimentation pipettes micro method No. 382 and blood taking pipette No. 383
- 376/5** with 5 “Assistent” blood sedimentation pipettes micro method No. 382 and blood taking pipette No. 383

389 “Assistent” Suction rubber caps

for placing on top of blood sedimentation pipettes (macro and micro). The blood is drawn from the mixing tube up to the zero mark of the pipette by turning the moistened rubber suction cap.

- 383** **Capillary pipettes**, white back, with one mark at 0,06 ml and 0,2 ml (blood taking pipette for the “Assistent” blood sedimentation apparatus, micro method)

Blood Test and Urine Analysis



“Assistent” Blood Sedimentation Apparatus

Blood sedimentation apparatus Plexiglas® stand Apparatus for 3 and 5 tests are with tilting device for rapid sedimentation, with marking strip “DBGM” – complete with blood sedimentation pipettes, special rubber caps (macro method only), Senkograd olives acc. to Dr. Schuetz (for filling by puncturing with a syringe needle), blood mixing tubes with rubber stopper and directions for use in a box. Pipettes with fused graduation “ASSISTENT-PERMANENT”

MACRO

377/3 with 3 “Assistent” pipettes Westergren, macro method Nr. 380

377/5 with 5 “Assistent” pipettes Westergren, macro method Nr. 380

377/10 with 10 “Assistent” pipettes Westergren, macro method Nr. 380

These apparatus are fitted with “Assistent” Senkograd rubber olives acc. to Dr. Schuetz No. 377/14, recognized by the Professional Association of Health and Welfare Services.

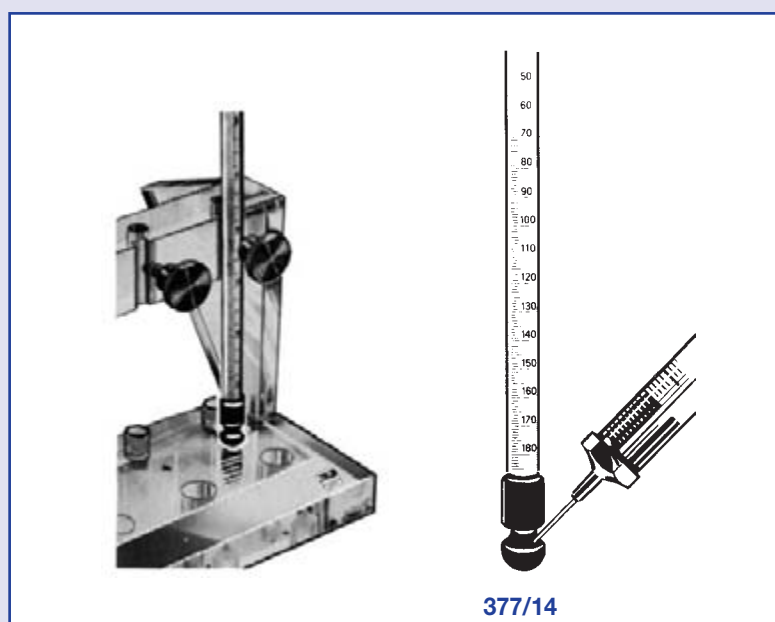


377/14 “Assistent” Senkograd rubber olives acc. to Dr. Schuetz “DBP” for safe filling of pipettes by puncturing with syringe – air bubbles are avoided, no aspiration, no valve. Fine adjustment of zero mark by slightly turning the olive. Safe transport of filled pipette. Easy cleaning of rubber olive by rinsing in water. Frequent reuse.

Special advantages of the “Assistent” Blood sedimentation apparatus of Plexiglas®:

- Any type of pipette can be used, no matter whether short or long, with plunger, suction rubber cap, or with shoulder.
- Different pipette-filling methods can be used in the same apparatus; whether by suction or by needle puncturing of rubber cap on pipette tip.
- Marking strip: Pencil notes can easily be removed by rubber
- The blood sedimentation pipettes can be easily dried in the plastic rack.

Blood sedimentation pipettes and blood mixing tubes: see following pages.





Blood Test and Urine Analysis



387/3



387/5

“Assistent” Blood Sedimentation Apparatus and Accessories

Bllood sedimentation apparatus, Plexiglas® stand, as described at previous page

MICRO

- 378/3** with 3 “Assistent” blood sedimentation pipettes, micro method No. 382 and blood taking pipette No. 383
- 378/5** with 5 “Assistent” blood sedimentation pipettes, micro method No. 382 and blood taking pipette No. 383
- 378/10** with 10 “Assistent” blood sedimentation pipettes, micro method No. 382 and blood taking pipette No. 383
- 383** Capillary pipettes, white back, with one mark at 0,06 and 0,2 ml (blood taking pipette for the “Assistent” blood sedimentation apparatus micro method).

SAFETY-MODEL-MACRO

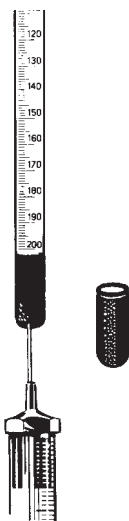
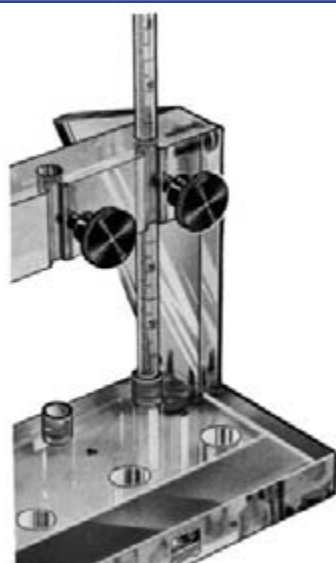
- 387/3** with 3 safety pipettes with interchangeable plunger No. 386
- 387/5** with 5 safety pipettes with interchangeable plunger No. 386
- 387/10** with 10 safety pipettes with interchangeable plunger No. 386

The above mentioned sedimentation apparatuses are supplied without “Assistent” olives acc. to Dr. Schuetz

377/15 “Assistent” Special rubber caps

to be put on the tip of pipette for filling it by puncturing with syringe needle. Cap can be used up to 20 times; closes automatically after puncturing. Cleaning by short rinsing in cold water. This special rubber cap can be used only with macro blood sedimentation pipettes (see illustration).

This rubber cap and method of filling are recognized and recommended by the Professional Association of Health and Welfare Service.



377/15



379



389

- 379** “Assistent” Blood mixing tubes with rubber stopper, approx. 60 x 12 mm Ø, suitable for all “Assistent” blood sedimentation stands

- 379/12** without rubber stopper

- 389** “Assistent” Suction rubber caps for placing on top of blood sedimentation pipettes (macro and micro). Blood is drawn from mixing tube up to zero mark of pipette by turning slightly moistened rubber suction cap.

Filled pipette with attached suction rubber cap at top is fit in through opening of crossbar (of apparatus No. 377/378) onto rubber bung at base and – with slight downward pressure – it is fixed by tightening screw.

When drying pipettes, fix them in same way, but tips should not touch bung.

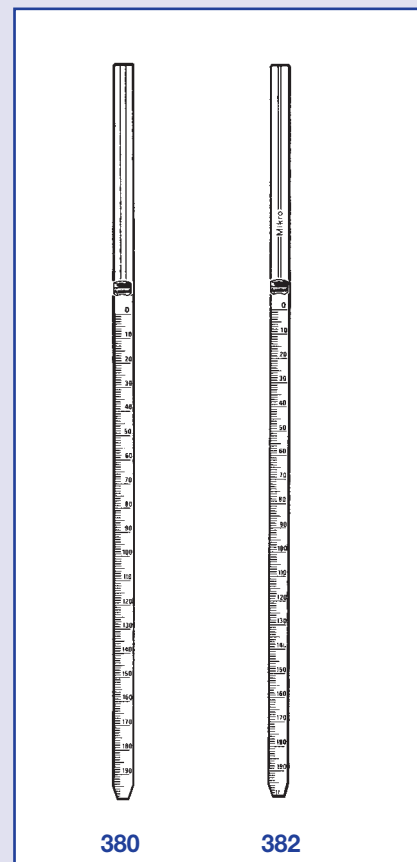
Blood Test and Urine Analysis



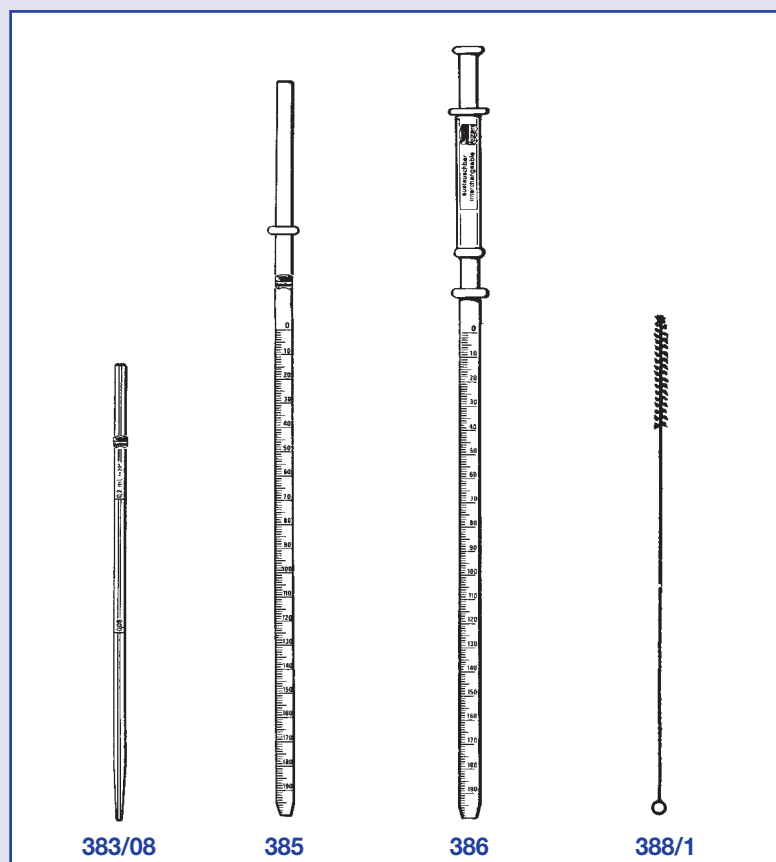
“Assistent” Blood Sedimentation Pipettes etc.

“Assistent” Blood sedimentation pipettes with fused blue graduation “ASSISTENT-PERMANENT”, 0–200 mm : 1 mm, clear glass
packing: 10 in a box

- | | | |
|----------------|---|----|
| 380 | acc. to Westergren-Katz,
acc. to DIN 12 845 macro method,
length 300 mm | €€ |
| 380/305 | special length 305 mm | €€ |
| 382 | for “Assistent”-micro method,
length 300 mm | €€ |

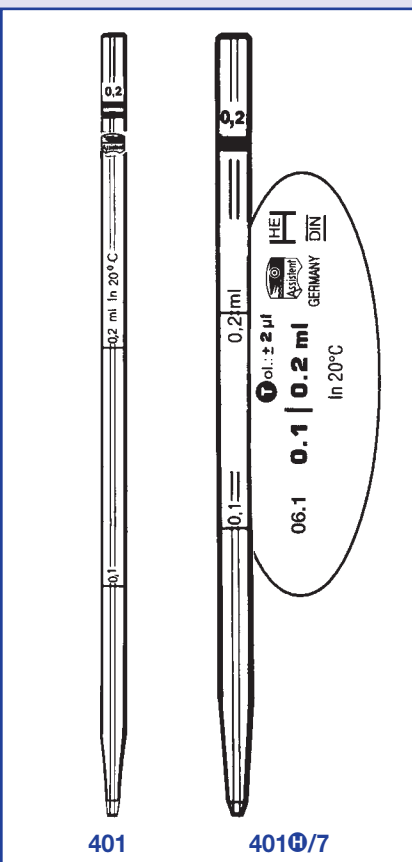


- | | | |
|---------------|--|----|
| 383 | Capillary pipettes, white back, with mark at 0,06 and 0,2 ml (blood taking pipette for “Assistent” blood sedimentation apparatus, micro-method) | |
| 383/08 | Capillary pipettes, white back, with mark at 0,08 und 0,2 ml | |
| 385 | Blood sedimentation pipettes acc. to Westergren-Adler with shoulder, clear glass, distance between tip and shoulder 24 cm, overall length 300 mm, graduation 0-200 mm in 1 mm | €€ |
| 386 | Safety-Westergren pipettes with interchangeable plunger, clear glass, graduation 0–200 mm in 1 mm, distance between tip and shoulder 21,5 cm, each in sturdy, transparent tube | €€ |
| 388/1 | Brushes for Westergren pipettes | |





Blood Test and Urine Analysis



“Assistant” Accessories for the Method acc. to Crecelius-Seifert

“Assistant” Capillary-pipettes acc. to Crecelius-Seifert with marks and numbers at 0,1 and 0,2 ml, tolerance 2 μl, calibrated to contain (In), colour code: orange packing: 10 in a box

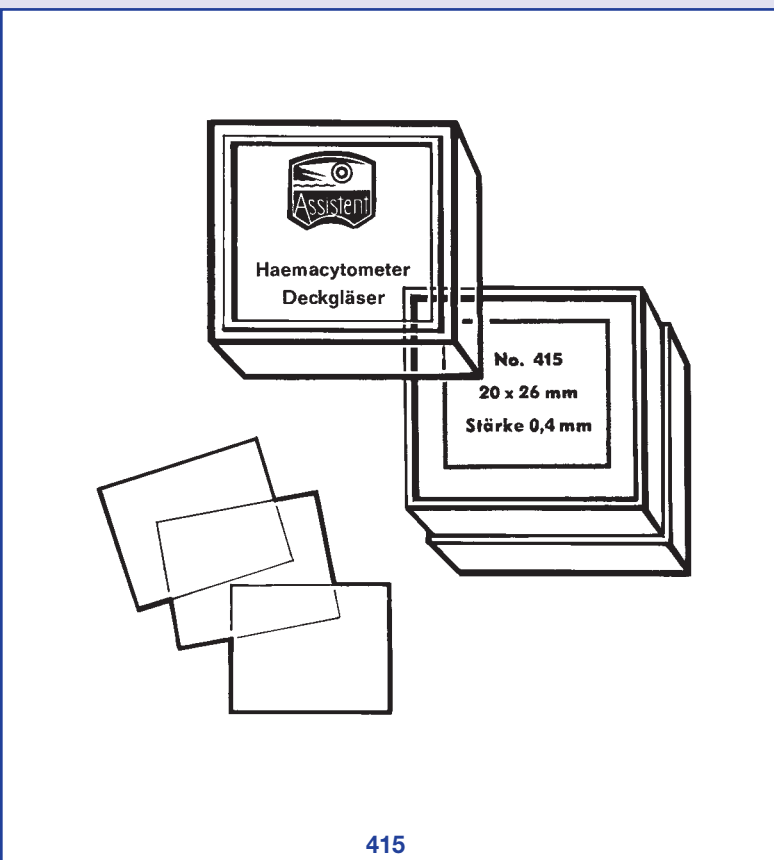
Standard type, fused blue graduation

401 clear glass, 20 cm long

HEI-conformity-certified, ⊕olerance (2 μl indicated on each pipette, fused amber graduation “ASSISTENT-PERMANENT”, zero at tip

401⊕/7 white back, 20 cm long

On request available with individual code certificate or batch certificate on surcharge.



“Assistant” Cover Glasses for Hemacytometer



Cover glasses for hemacytometer (blood test), precision type, optically plane on both sides, 0,4 mm thick, boxes of 10 pieces

	Sizes
	mm
412/7	30 x 30
415/7 (standard size)	20 x 26
416/7	22 x 22
417/7	24 x 24

Blood Test and Urine Analysis



“Assistent”-Hemocytometers and Counting Chambers

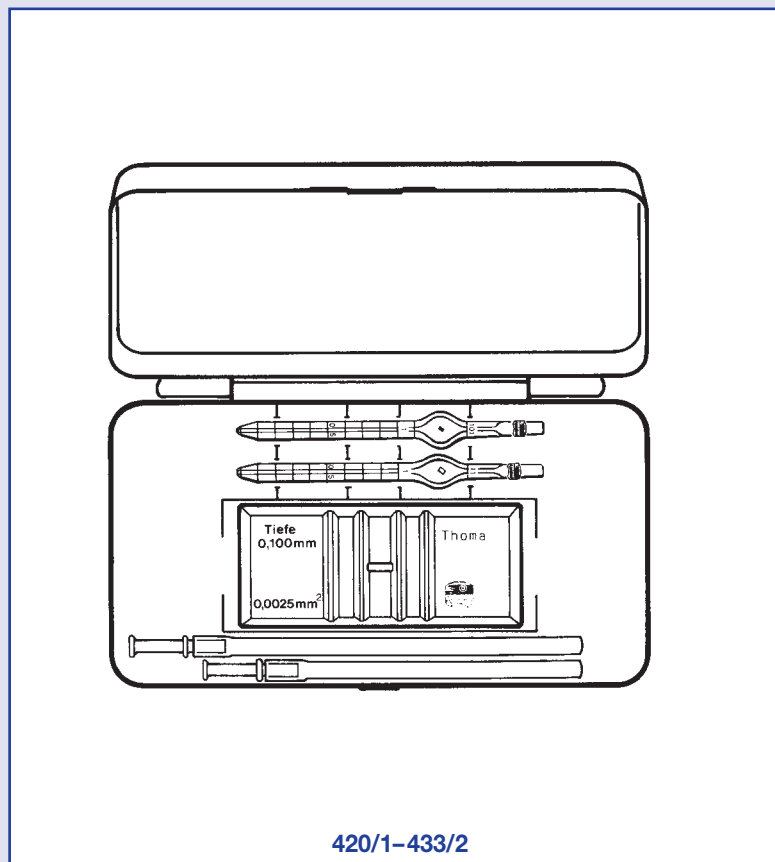
- 420/...** “Assistent”-Hemocytometers precision type, complete in case, consisting of:
433/... 1 erythrocyte pipette, 1 leucocyte pipette, mouthpieces with rubber tubing counting chamber, 2 optically plane cover glasses and directions for use
440/... **Counting chambers only**, with 2 optically plane cover glasses, Tolerance $\pm 2\%$ for 0,1 mm
453/... depth of chamber in transparent plastic box

Standard type for export, outside EC			CE
.../1	single ruling without clamps		.../71
.../2	double ruling without clamps		.../72
.../3	single ruling with clamps		.../73
.../12	bright-line double ruling without clamps		.../712
Hema-cytometer complete Standard type**	Counting-chambers CE	Counting-chambers Standard type	System and Depth
420/1	440/71	440/1	Thoma
420/2	440/72	440/2	0,100 mm
420/3	440/73	440/3	
–	440/712	440/12	
427/1	447/71		Thoma new
427/2	447/72	447/2	0,100 mm
–	447/73		
421/1	441/71	441/1	Neubauer
421/2	441/72	441/2	0,100 mm
421/3	441/73	441/3	
421/12	441/712	441/12	
422/2	442/72	442/2	Neubauer improved.
422/12	442/712	442/12	0,100 mm
423/1	443/71	443/1	Bürker
423/2	443/72	443/2	0,100 mm
423/3	443/73	443/3	
–	443/712	–	
424/2	444/72	444/2	Tuerk
			0,100 mm
425/2	445/72	445/2	Bürker/Tuerk
425/3	445/73	445/3	0,100 mm
426/1	446/71	446/1	Nageotte*)
	446/72	446/2	0,50 mm
429/1	449/71	449/1	Fuchs/Rosenthal*)
429/2	449/72	449/2	0,200 mm
429/3	449/73	449/3	
429/12	449/712	449/12	
	450/72	450/2	Jessen*)
			0,400 mm
–	452/72	452/2	Schilling-Kreuznetz
			0,100 mm
433/1	453/71	453/1	Malassez
433/2	453/72	453/2	0,200 mm
		454	McMaster

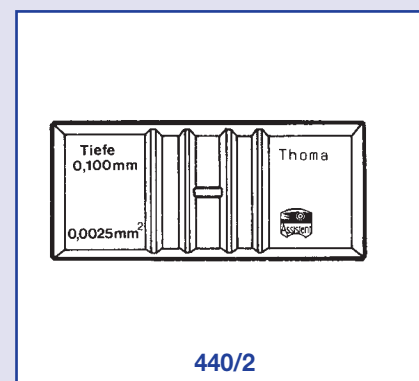
*) without erythrocyte pipette

**) Hemocytometer CE available

Other depths and systems are available as well.
 Descriptions of the several rulings are at following pages



420/1–433/2



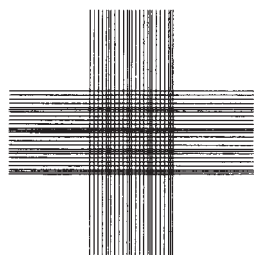
440/2

All “Assistent” counting chambers are made in one piece of special optical glass

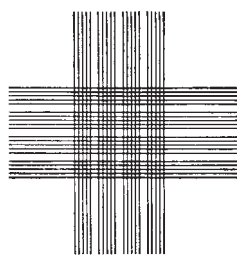
Pipetting by mouth is prohibited according to existing regulations. We reject any kind of product liability in case of using mouthpiece with rubber tubing. We recommend our pipetting aids “micro-classic” no. 558 and Micro-Pipex No. 558/1



Blood Test and Urine Analysis



420/... 440/...



427/... 447/...

“Assistent” Hemacytometers and Counting Chambers

420/... and Thoma

440/... Area of central square: 1 mm²

Subdivision: 400 squares of 0,05 x 0,05 mm (0,0025 mm²). Each 1st, 6th, 11th and 16th square is marked by marginal lines, resulting in 16 square groups of 0,2 x 0,2 mm each and an area of 0,04 mm².

Counting erythrocytes: count 5 square groups (i. e. 80 mini-squares of a total area of 0,2 mm²). Multiply the result by 5000 (at a dilution of 1 : 100) or by 10000 (at a dilution of 1 : 200), in order to reach the number of erythrocytes in 1 mm³ of blood.

Counting leucocytes: charge the total square (i. e. 1 mm²) 5 times and count. Multiply the counting result by 20 (dilution 1 : 10) or by 40 (dilution 1 : 20) to reach the number of leucocytes in 1 mm³ of blood.

Depth of chamber 0,1 mm

Other depths (e. g. 0,05 mm) are available on request (special manufacture)

427/... and Thoma neu

447/... Total area of ruling: 1,21 mm²

Subdivision of central square: 16 square groups (like the Thoma ruling), but without marginal squares where erythrocytes frequently agglomerate in the triple lines.

Counting erythrocytes: as with Thoma ruling
Counting leucocytes: likewise. But 4 rows of squares (top, bottom, right and left) should be omitted in order to obtain an area of 1 mm².

Depth of chamber 0,1 mm

421/... and Neubauer

441/... Total area of ruling: 9,0 mm²

Consisting of 9 large squares of 1 mm² each.

The central square shows the Thoma ruling. The other 8 squares are subdivided into 16 equal squares.

Counting erythrocytes: corresponds exactly to Thoma method

Counting leucocytes: in 5 large squares of 1 mm² each.

Evaluation just as indicated for Thoma ruling.

Depth of chamber 0,1 mm

422/... and Neubauer improved

442/... Total area of ruling: 9,0 mm²

Consisting of 9 large squares of 1 mm² each – corresponding to Neubauer ruling. The central square of 1 mm² contains – owing to the closer intermediate lines –

25 squares of 16 mini-squares 0,05 x 0,05 mm each.

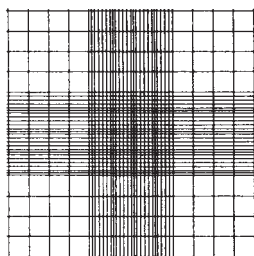
Counting erythrocytes and leucocytes: as indicated above

Depth of chamber 0,1 mm

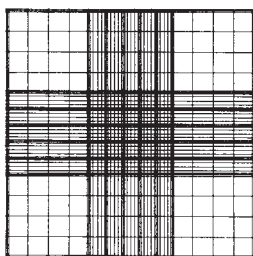
bright-line

The rulings of bright-line counting chambers are the same as those of standard counting chambers. The rulings are engraved into a dark, extremely thin, semi-transparent layer (metallized rhodium coating) which is precisely fused to the polished chamber surface. The engraved lines stand out brightly from the dark area. The corpuscles thereon appear three-dimensional due to the transparency. Thereby evaluation is facilitated considerably and counting accuracy is increased as well.

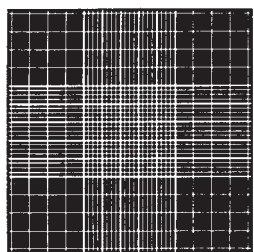
Handle bright-line counting chambers very carefully in order to avoid damaging of coating, otherwise it will disintegrate slowly. Be especially aware of damage caused by broken cover glasses or by rubbing during cleaning.



421/... 441/...



422/... 442/...



422/... 442/... „Bright-Line“

Blood Test and Urine Analysis



“Assistent” Hemacytometers and Counting Chambers

423/... and Buerker

443/...

Total area of ruling: 9,3 mm²

Subdivision:

169 squares (0,05 x 0,05 mm) of 0,0025 mm² each – for counting erythrocytes.

144 squares (0,2 x 0,2 mm) of 0,04 mm² each – for counting leucocytes.

Depth of chamber 0,1 mm

424/... and Tuerk

444/...

Total area of ruling: 9,0 mm²

The central square corresponds to Neubauer ruling. The other square groups show double or triple lines.

Counting erythrocytes and leucocytes: Correspond exactly to the method for Neubauer ruling.

Depth of chamber 0,1 mm

425/... and Bürker-Tuerk

445/...

Corresponds to Tuerk ruling.

426/... and Nageotte

446/...

Total area of ruling: 100 mm²

Subdivision: 40 rectangles of 10 x 0,25 mm each

The centre of ruling is marked by double lines.

This type is used for counting cells in lumbar fluid (e. g.).

Depth of chamber 0,5 mm

(Depths of 1,0 or 0,25 mm are available on request)

429/... and Fuchs-Rosenthal

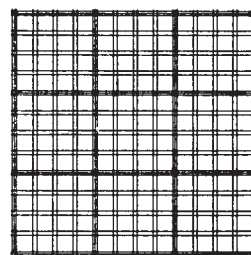
449/...

Total area of ruling: 16 mm²

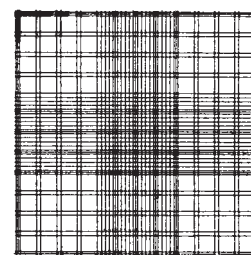
Subdivision: 16 square groups of 1 mm² each, consisting of 16 mini-squares (0,25 x 0,25 mm) each.

This ruling is used for counting cells in cerebro-spinal fluid (e. g.)

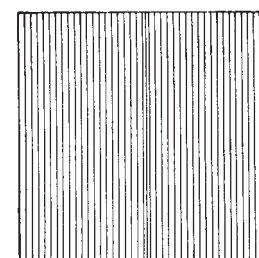
Depth of chamber 0,2 mm



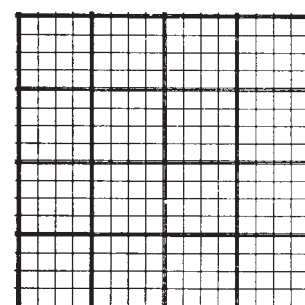
423/... 443/...



424/... 444/...



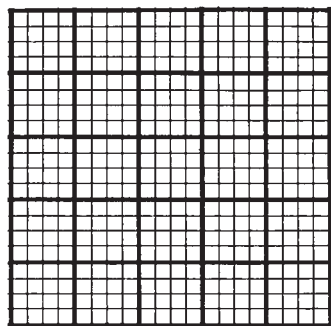
426/... 446/...



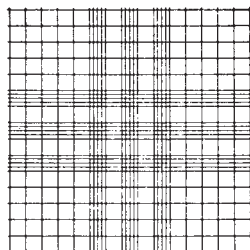
429/... 449/...



Blood Test and Urine Analysis



450/...



452/...

“Assistent” Hemacytometers and and Counting Chambers

450/... **Jessen**

Total area of ruling: 25 mm², volume: 10 mm³

Subdivision: 25 square groups of 1 mm² each, consisting of 16 small squares (0,25 x 0,25 mm) each.

This ruling is used for counting cells in cerebro-spinal fluid (e. g.).

Depth of chamber 0,4 mm

452/... **Schilling “cross ruling”**

Total area of ruling: 9,0 mm²

The central square contains 9 square groups of mini-squares of 0,0025 mm² each – for counting erythrocytes.

The corner squares are subdivided into 25 small squares of 0,04 mm² each – for counting leucocytes.

Depth of chamber 0,1 mm

433/... and **Malassez**

453/...

Total area of ruling: 5,0 mm² (2,0 x 2,5 mm)

Shows 100 rectangular fields (0,20 x 0,25 mm) which are subdivided as following

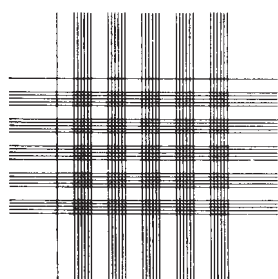
25 fields: into 20 squares (0,05 x 0,05 mm) of 0,0025 mm² each

25 fields: into 5 srectangles (0,20 x 0,05 mm) of 0,01 mm² each

25 fields: into 4 srectangles (0,25 x 0,05 mm) of 0,0125 mm² each

25 fields: (0,20 x 0,25 mm) of 0,05 mm² each are without sub-division

Depth of chamber 0,2 mm



433/... 453/...

454 **Counting chamber acc. to McMaster**

with 2 counting areas, cover glass with 2 counting grids glued onto 3 supports



454

Blood Test and Urine Analysis



“Assistent” Hemometers

“Assistent” Hemometers with 2 glass colour standards, for hemoglobin examinations acc. to Sahli method (hydrochloric acid hematine) – complete with directions for use and accessories, as mentioned below. Measuring tubes and pipettes are with fused graduation “ASSISTENT-PERMANENT”

- 455* in solid case
456* in cardboard box

* for export outside EC

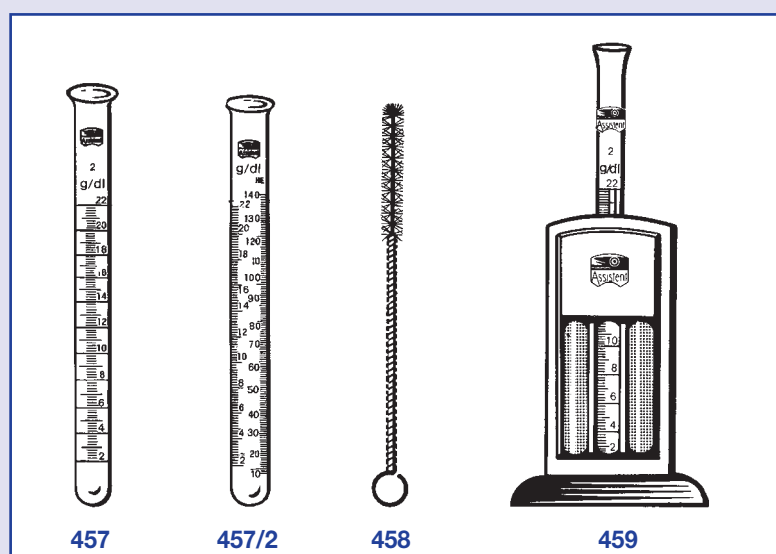


- 457 “Assistent”-Hemometer measuring tube with gram scale (g/dl = grams of hemoglobin in 100 ml blood)
458 Brush with cotton tip, for hemometer measuring tubes, ca. 140 x 60 x 9 mm
459 “Assistent” Hemometer stand with 2 glass colour standards and plate of frosted glass, without tube

Accessory:

- 457/2 “Assistent” Hemometer measuring tubes with double Scale (gram scale in g/dl and hemometer units “HE”
100 HE = 14,8 g/dl
100 HE = 16 g/dl
100 HE = 17 g/dl

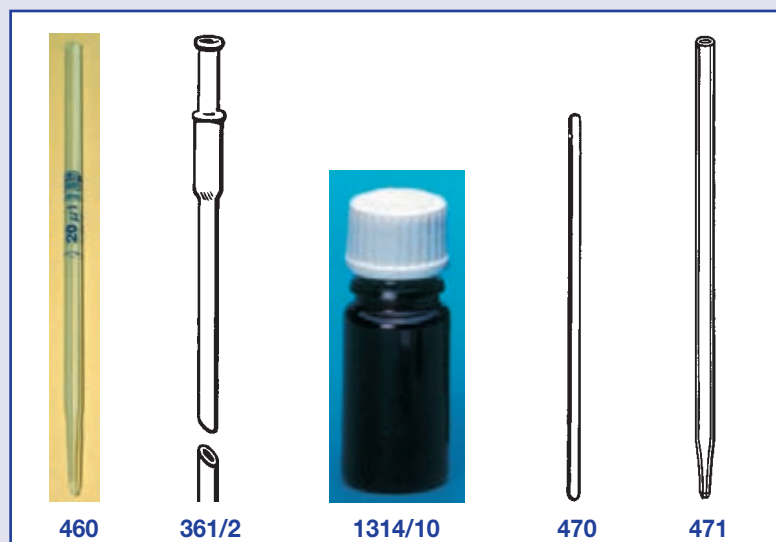
Item No. 457/2 will be supplied with graduation at our discretion if scale is not mentioned in your order.



- 460* “Assistent” Hemometer pipette acc. Sahli, white back, 20 µl, fused blue graduation “ASSISTENT-PERMANENT”, 12,5 cm long, colour code: black
361/2 Mouthpiece with rubber tubing
1314/10 Bottle, amber glass, with screw cap for hydrochloric acid
470 Stirring rod of glass
471 Dropping pipette

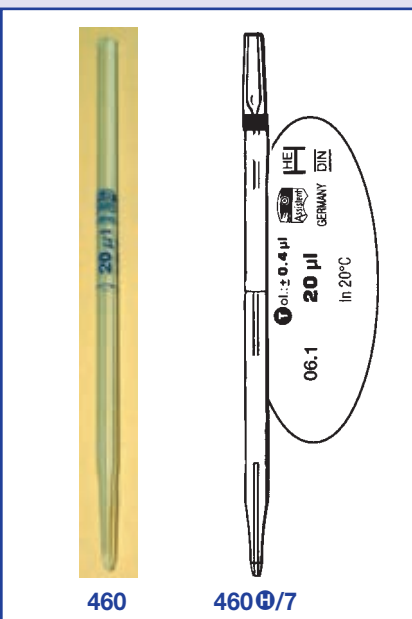
* for export outside EC

Pipetting by mouth is prohibited according to existing regulations. We reject any kind of product liability in case of using mouthpiece with rubber tubing. We recommend our pipetting aids “micro classic” no. 558 and Micro-Pipex no. 558/1.





Blood Test and Urine Analysis



460

460H/7

“Assistent” Hemoglobin pipettes acc. to Sahli

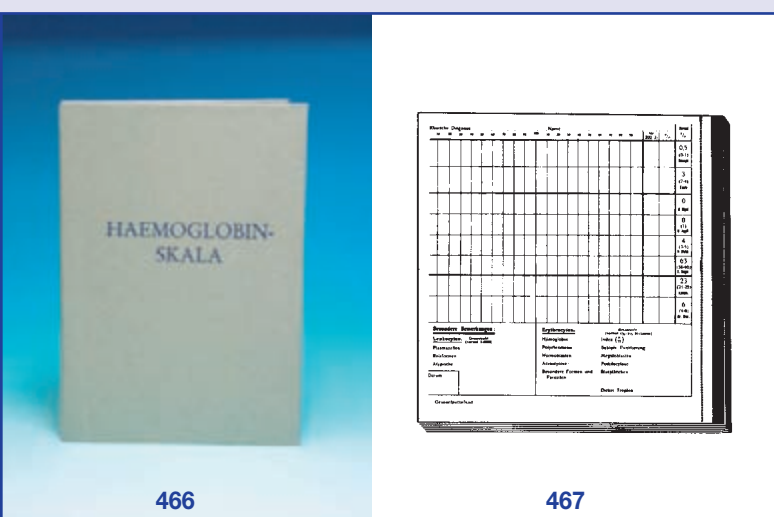
fused blue graduation “ASSISTENT-PERMANENT”, white back, calibrated to contain (In), length 12,5 cm
packing: 10 in a box

460* standard type 20 µl
tolerance 0,4 µl, colour code: black

460H/7 -conformity-certified,
tolerance 0,4 µl indicated on each pipette, fused amber graduation “ASSISTENT-PERMANENT”

On request available with individual code certificate or batch certificate.

* for export outside EC



466

467

466 Hemoglobin scale bloc acc. to Tallquist
containing 250 filter paper strips to absorb the blood to be tested from 10 to 100 HE – for use at daylight only – with colour scale and directions for use

467 Hemal test counting bloc acc. to Schilling
containing 50 forms (in German) – a useful form for daily practice in the laboratory

Blood Test and Urine Analysis



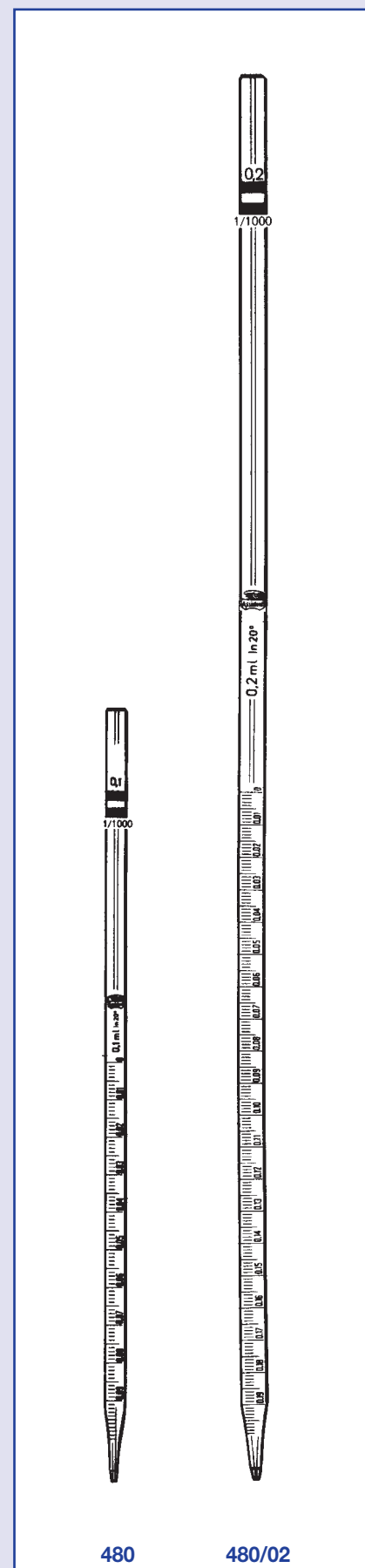
“Assistent” Capillary Pipettes

“Assistent” Blood sugar pipettes,

fused blue graduation “ASSISTENT-PERMANENT” graduated to tip, calibrated to contain (in), packing: 10 in a box

480/... clear glass, standard type, zero at top

clear	Capacity ml	Subdivisions ml	Marks	Tolerance μl	Length cm	Color glass Code
480	0,1	0,001 = 1/1000	100	1	25	2 x green
480/02	0,2	0,001 = 1/1000	200	2	35	2 x blue



480

480/02



over 6000 trustworthy Assistent's



Precision-Glass instruments for physicians and labs

Instruments for blood test
Laboratory trays
Urinometers
Volumetric analysis instruments
Piston pipettes, Dispensers,
Digital Burette
Staining equipment
Test tubes
Storage racks
Cover glasses and micro slides
Instrument trays
Shipping containers
Waterbath thermostats
Grounded glassware
thermometers and hydrometers
Water purification apparatus

All "Assistent"-products are available at your dealer.

Blood Test and Urine Analysis



“Assistent”-Capillary Pipettes and Accessories for Prothrombin Determination

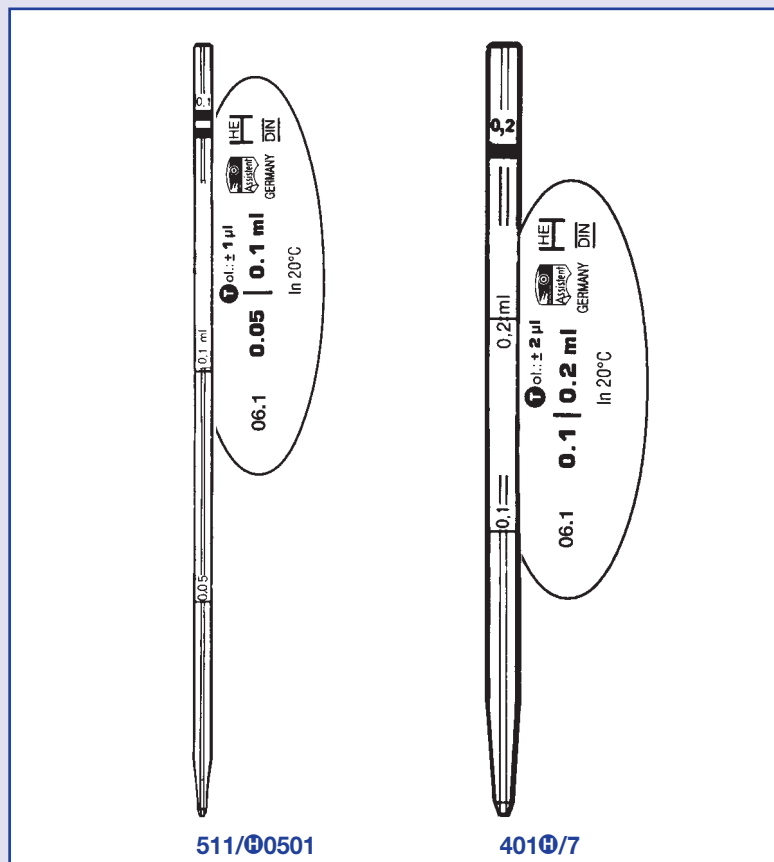
Capillary pipettes acc. to Hagedorn-Folin

white back, fused graduation “ASSISTENT-PERMANENT”, calibrated to contain (In) packing: 10 in a box

511/... conformity-certified H , T olerance indicated on each pipette, amber graduation

On request available with individual code certificate or batch certificate.

H	Marks at ml	T olerance	Length cm	Colour code
511/0501	0,05 + 0,1	1 μl	20	2x orange
401/07*	0,1 + 0,2	2 μl	20	orange



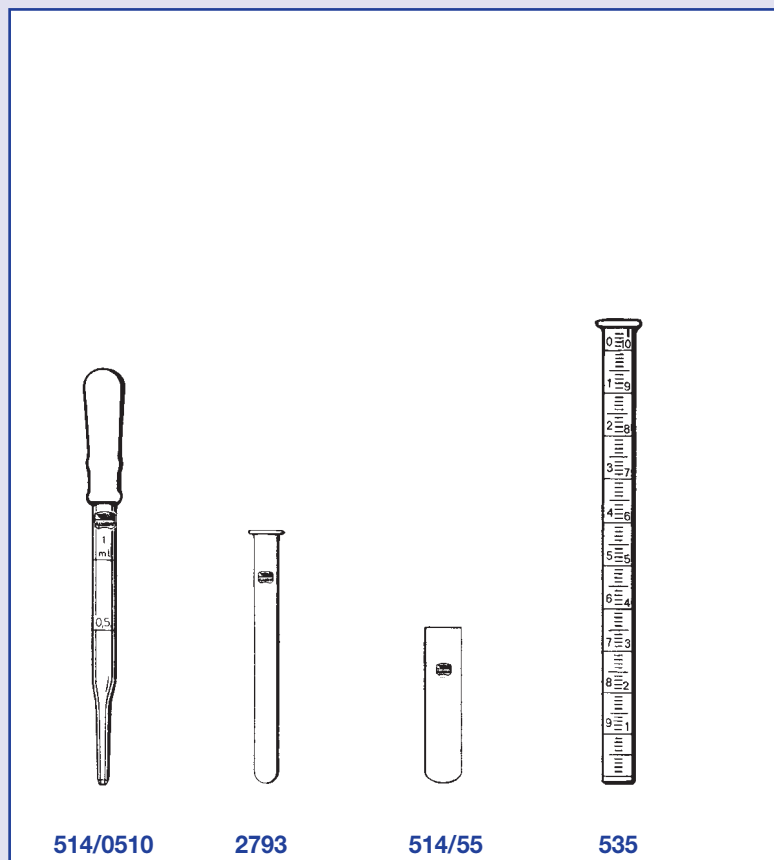
514/0510 Pipettes with one mark each at 0,5 und 1,0 ml with rubber teat No. 2620

2793/5 Test tubes acc. to Uhlenhut. approx. 100 x 10 mm,

2850/156 Stirring rods approx. 150 x 6 mm

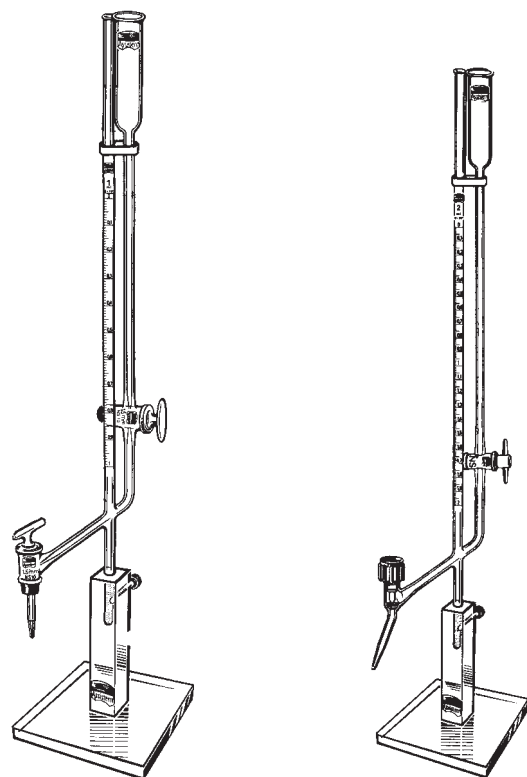
514/55 Glass tubes for coagulation, round bottom, without rim, approx. 55 mm long, of selected rawmaterial, ca. 12 mm diam.

535 “Assistent”-Hematocrit tubes acc. to Wintrobe, CE for determination of the volume of blood corpuscles, numbers in different colours, white and red, white graduation, 0–105 mm : 1 mm clear glass, length approx. 110 mm





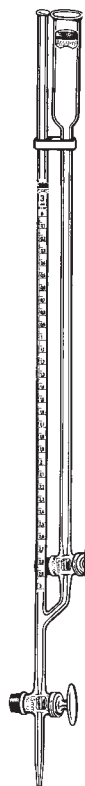
Blood Test and Urine Analysis



521/...

“Assistant” Microburettes

“Assistant” Microburettes acc. to Bang, standard type, fused blue graduation “ASSISTENT-PERMANENT”, circular graduation at main points, clearly readable-marking and numbers, calibrated to deliver (Ex), NS-stop-cocks with safety plugs, solid finish, each in a box, on request stop-cocks are available with PTFE plug or safety needle-valve stopcock with spindle (NS = interchangeable standard ground)



523/...

With Plexiglas® base
(lateral stopcock)
with Schellbach stripe

with Capacity
glass

521/2
521/52
521/10

with Subdivisions
Schellbach stripe

523/2
523/52
523/10

For use with a stand
(straight stopcock)
with Schellbach stripe

Capacity

ml

2
5
10

Subdivisions

ml
0,01 = 1/100
0,02 = 1/50
0,02 = 1/50

⊕olerance
ml

0,015
0,015
0,03

Blood Test and Urine Analysis



“Assistent” Enzyme Test Pipettes

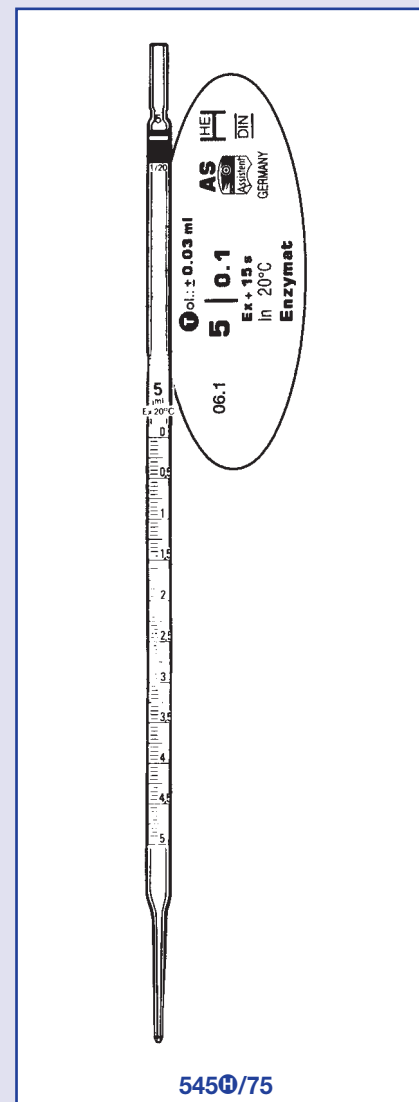
clear glass, with long, tapered, sturdy tip, precision type, for partial delivery (not calibrated to tip), calibrated to deliver (Ex), suitable short delivery time, zero at top, marked main points, fused graduation “ASSISTENT-PERMANENT”

packing: 10 in a box

545 \oplus /7.. \mathbb{H} -conformity-certified, \oplus olerance indicated on each pipette, amber graduation
On request available with individual code certificate or batch certificate.

\mathbb{H}	Capacity ml	Subdivisions ml	Marks	Length cm	\oplus olerance μ l	Colour-code
545 \oplus /705*	0,5	0,01 = 1/100	50	35	5	2 x yellow
545 \oplus /71	1	0,01 = 1/100	100	35	7	yellow
545 \oplus /7202	2	0,02 = 1/50	100	35	10	black
545 \oplus /7505	5	0,05 = 1/20	100	35	30	red
545 \oplus /710	10	0,1 = 1/10	100	35	50	orange

* in addition to DIN



545 \oplus /75



Blood Test and Urine Analysis



551/...

“Assistent” Disposable Volume Capillaries CE

551/... “Assistent” Volume capillaries (disposable), conformity-certified μ as of 5 μ l, calibrated to contain (In) end to end (capillary length = volume), boxes of 250 pieces with capillary holder (short tube with rubber teat), 4 boxes in a carton

These micropipettes are produced of precision capillary tubing and are subject to constant quality controls

Sizes μ l	1	2	3	5	10	20	25	50	100
	551/1	551/2	551/3	551/5	551/10	551/20	551/25	551/50	551/100

Accuracy: $\leq \pm 0,5\%$

Precision*: $\leq 1\%$

* (except size 1 μ l $\leq 1,5\%$
and size 100 μ l $\leq 2\%$)

Heparinized volume capillaries are also available in other sizes at adequate quantities.

Filling and discharging can be effected with or without capillary holder.

Accessories:

553/1 Capillary holder, short tube with rubber teat.



554

“Assistent” Disposable capillary pipettes acc. to Prof. Delbrück CE

554/... Disposable capillary pipettes acc. to Prof. Delbrück calibrated to contain (In) end to end, heparinized, length approx. 30,5 mm

Boxes of 100 pieces

Accuracy: $\leq \pm 0,5\%$

Precision: $\leq 1\%$

554/20 20 μ l

554/40 40 μ l

554/50 50 μ l

Blood Test and Urine Analysis



“Assistent” Disposable Micropipettes CE

555/... “Assistent” Micropipettes, disposable with ring mark, conformity-certified μ as of 5 μ l, calibrated to contain (In), boxes of 250 pieces, 4 boxes in a carton.

These micropipettes are produced of precision capillary tubing and are subject to constant quality controls.



Sizes μ l	1–2–3–4–5 (5 marks)	5/50 (2 marks)	10/50 (2 marks)	10	20	20/40 (2 marks)	25
Colour Code	white	green	green	orange	black	2 x red	2 x white
Nr.	555/5	555/550	555/1050	555/10	555/20	555/2040	555/25

Sizes μ l	40	50	50/100 (2 marks)	100	200
Colour Code	2 x red	green	blue	blue	red
No.	555/40	555/50	555/50100	555/100	555/200

Accuracy: $\leq \pm 0,25\%$ (for size 5 μ l $\leq \pm 0,3\%$)
 Precision: $\leq 0,5\%$ (for size 5 μ l $\leq 0,6\%$)

Accuracy: Difference between mean and nominal
 Precision: Percentage of standard deviation in relation
 Tolerance: Difference between upper and lower limit of admissible deviation
 The tolerance is guaranteed by statistical quality control

According to existing regulations pipetting by mouth is prohibited. We reject any kind of product liability in case of using mouthpiece with rubber tubing.

We recommend our pipetting aid “micro-classic”
 No. 558 and Micro-Pipex No. 558/1.



Blood Test and Urine Analysis



„Assistent“-Pipetting aids

558 Pipetting aid “micro-classic”

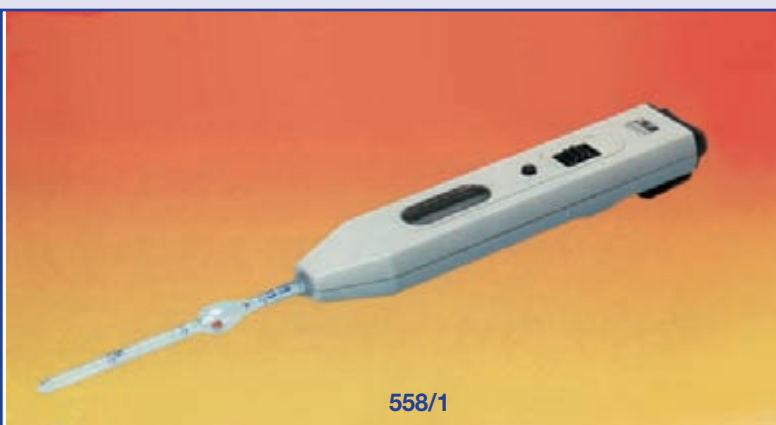
Micro pipetting aid with suction tube and adapter for disposable micro pipettes with ring mark and other small volume pipettes up to approx. 1 ml.

Recommended for work with a microscope due to the advantageous right-angled position of the pipette. Easy operation.

557/1 Spare Adapter

557/2 Spare Adapter with suction tube, pack of 3 pcs.

Adapter and suction tube are resistant to steam sterilization at +121°C, 2 bar.



558/1 “Assistent” Micro-Pipex, new model

Micro pipetting aid for disposable micro pipettes with ring mark and many other small volume pipettes (RBC and WBC pipettes) and blood sugar pipettes up to 1 ml

558/2 Spare suction bellows for above, set of 3

Attention:

The micro pipetting aids may not be used for capillaries, calibrated to contain end to end.

According to existing regulations pipetting by mouth is prohibited. We reject any kind of product liability in case of using mouthpiece with rubber tubing.

We recommend our pipetting aid “micro-classic” No. 558 and Micro-Pipex No. 558/1.

Blood Test and Urine Analysis



559 pipette device with receiver

Selection of small, specific particles from liquids (e.g. micro-organisms from plankton specimens) is done by pipette from flat trays under microscopes and stereo magnifying glass. In order to be able to transport the objects in the pipette e.g. into receptacles, microscopic study must be interrupted.

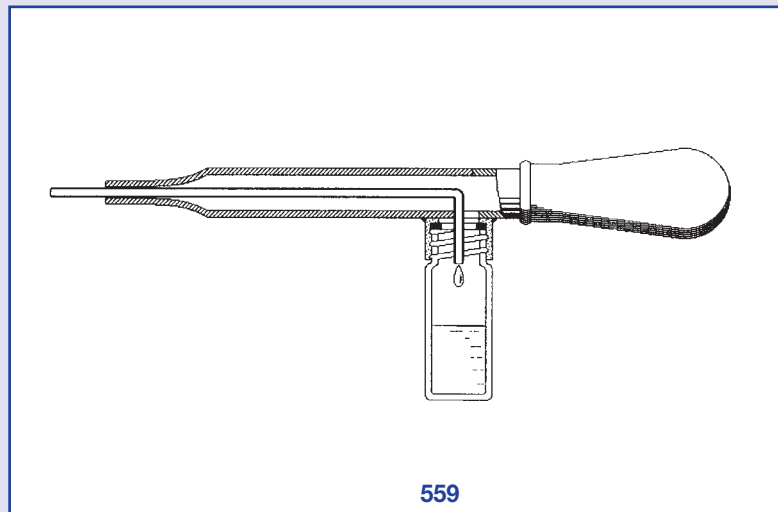
This is where ASSISTENT's pipette device is extremely useful. Simple function and easy handling are features of this pipette device. By way of short pump strokes of the suction device, the pipette device enables the person using the microscope to selectively pick up particles from fluids into the screw fixed receiver (11) without having to interrupt the microscopic study. The sealable receivers are easy to exchange by means of a screw fitting.

The particles can also be brought directly into reagents (e.g. fixing solutions) located in the receiver. A further possible application is to transport anaerobic micro-organisms into a receiver e.g. into CO² gas.

Furthermore chemical experiments can be performed on a small scale and reactions observed in the receiver (e.g. introducing liquid reagents to substances which are in the receiver).

This allows a further application as a teaching tool for cell cultures f.e. The pipette device is simple to clean (e.g. under running water) and thus can be used again.

Sterilisable up to + 134° C.



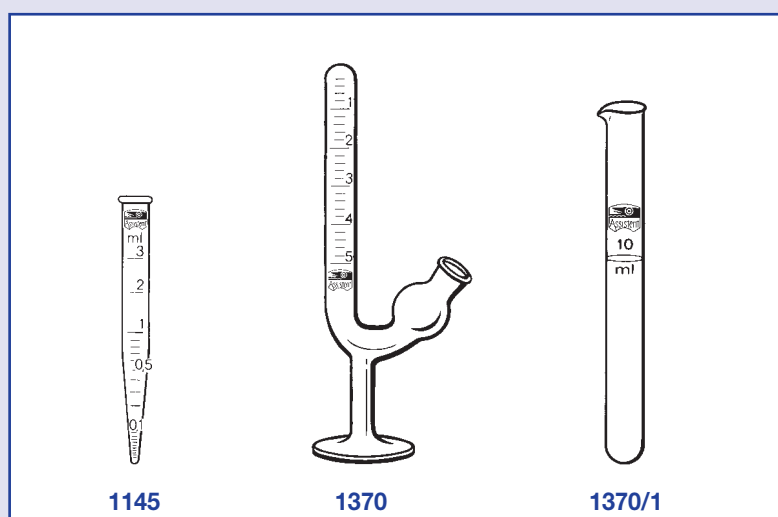
1375 Shifting glasses, bent in U-form, total height 135 mm, with stem and circular base



1145 "Assistent" Nissl tubes for the volumetric determination of fibrin, 3 ml graduated, used blue graduation "ASSISTENT-PERMANENT" 3 in a box, with directions for use Literature: "Das ärztliche Laboratorium", number 8, August 1956, 2. year

1370 Einhorn's fermentation saccharometer, graduated in ml and % for gas and sugar, fused white graduation "ASSISTENT PERMANENT", with dilution tube and directions for use, each in a box

1370/1 Spare dilution tubes, marked at 10 ml, fused amber graduation "ASSISTENT-PERMANENT"





Blood Test and Urine Analysis



560

563 564

“Assistent” Blood and Hematocrit Capillaries “Assistent” Pasteur Pipettes

„Assistent“-Blood capillaries

560 Blood capillaries for determination of coagulation, for blood typing and similar purposes, approx. 90 mm long, cut ends, packing: 100 in a glass tube

“Assistent”-Micro hematocrit disposable capillaries, €
length 75 mm ± 1 mm, ins. diam. 1,1–1,2 mm, uniform over the total length (tapering 0,02 mm), outs. diam. approx. 1,5 mm, fire-polished end. Ungraduated for volume 40 µl. For use in hematocrit centrifuges. Manufactured acc. to international specifications. With colour code.
Packing: 100 in a tube, 10 tubes in a box

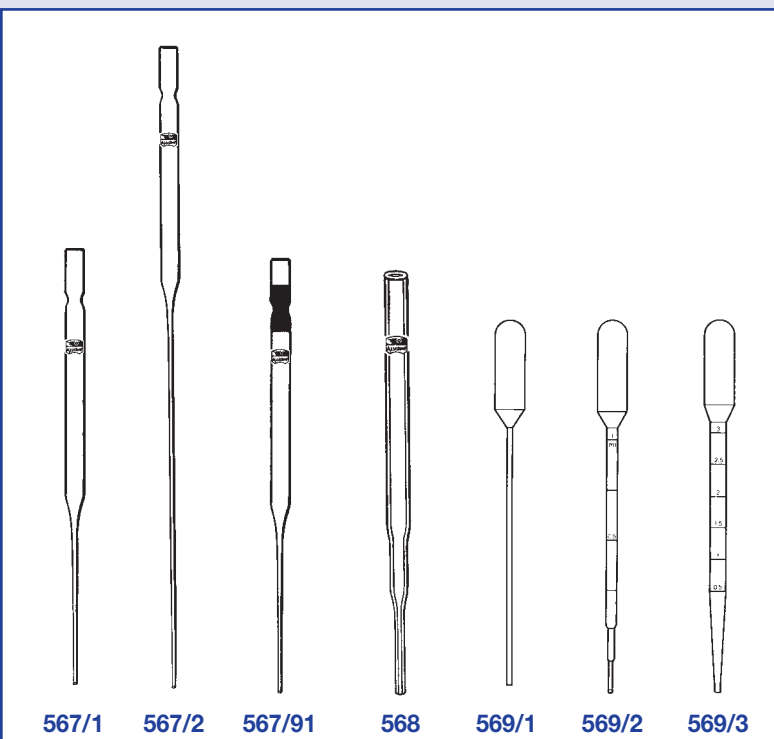


566

563 heparinized with sodium heparin over the entire internal surface, with red colour code

564 not heparinized, with blue colour code
565 heparinized with sodium heparin, with calibration mark at 60 mm, length 75 mm ± 1 mm, ins. diam. 0,55 mm ± 0,05 mm, outs. diam. 1,40–1,75 mm, fire polished end

566 “Assistent” Hematocrit-sealing material non-drying, in plastic plates, for sealing approx. 500 micro hematocrit capillary tubes. Each plate has numbered positions for placing capillaries.



567/1

567/2

567/91

568

569/1

569/2

569/3

“Assistent” Pasteur pipettes, disposable exact uniform size, body approx. 90 x 7 mm diam., ins. diam. of capillary tip approx. 1 mm, 250 pcs in a box, 4 boxes in a carton

567/... with constriction for cotton plug

567/1 short Form total length 150 mm

567/2 long form, total length 230 mm

567/9... with cotton plug

567/91 short Form total length 150 mm

567/92 long form, total length 230 mm

568 “Assistent” Pasteur pipettes

with attached, long tip, total length approx. 155 mm, body approx. 95 x 7/8 mm diam.

“Assistent” Pasteur pipettes of polyethylene

500 pieces in a box, 3000 pieces in a carton

569/1 micro, 0,5 ml

569/2 1 ml

569/3 3 ml

Blood Test and Urine Analysis



“Assistent” Blood Smear Slides and Spot Plates

- 619** **Blood smear slides acc. to Undritz,** CE
polished surfaces, ground edges, bevelled corners
40 x 20 mm, 1.6 – 1.7 mm thick

Glass plates for spot tests, with numbered cavities

- 623** **10 cavities,** diam. 14 mm,
105 x 55 x 5 mm (Börner test slides)

- 624** **12 cavities,** diam. 15 mm,
89 x 57 x 4 mm

- 625** **Spot plates of porcelain**
grazed, 12 cavities, diam. 20 mm
depth 3 mm, 105 x 90 x 7 mm

All dimensions given are approximate only.

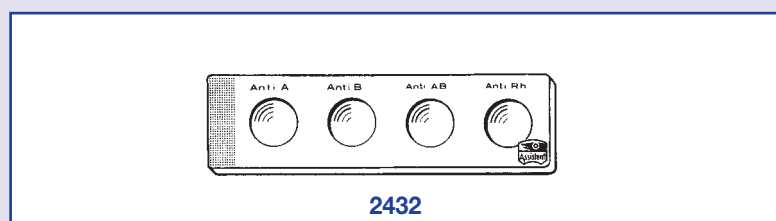
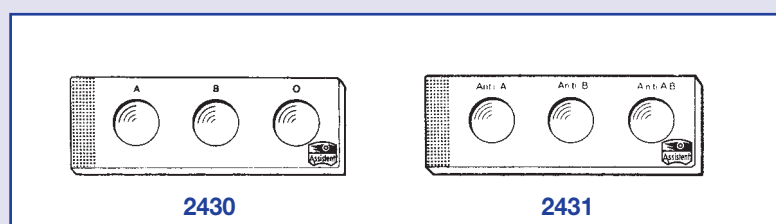
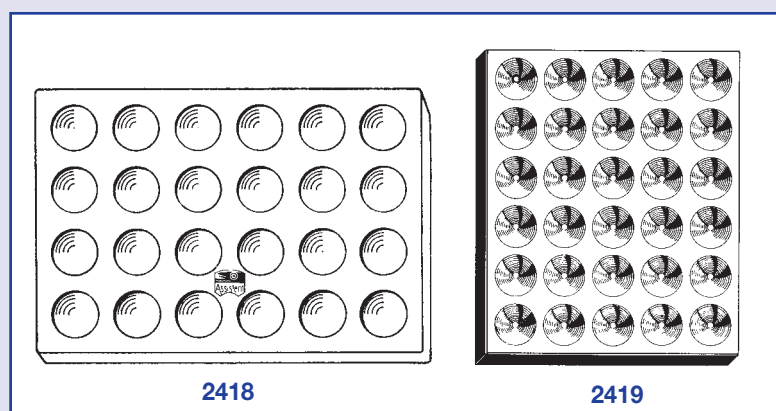
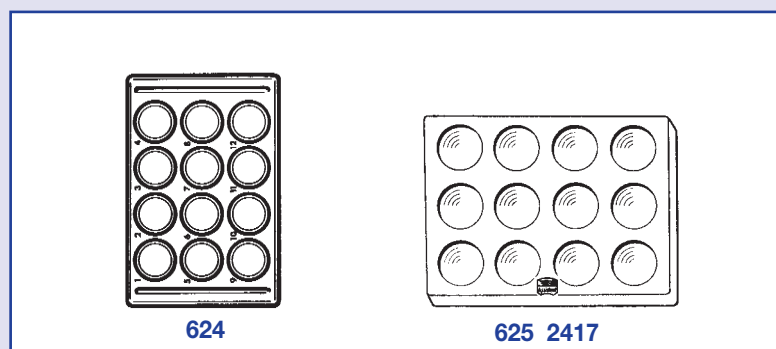
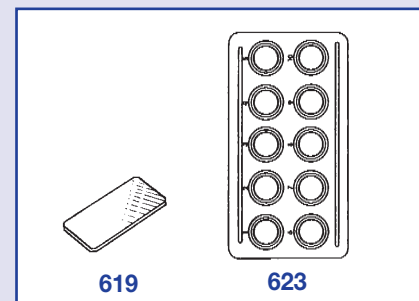
- 2417** **Glass plates frosted surface**
with 12 polished cavities,
diam. 16 mm, depth 1,8 mm, 76 x 60 x 5 mm

- 2418** **24 cavities,** diam. 16 mm, depth
depth 1,6 mm, 140 x 85 x 3 mm

- 2419** **24 cavities, polished surface,**
diam. 22 mm, depth 2 mm, 180 x 130 x 6 mm

Micro slides of opal glass for blood typing, with frosted label.

- 2430** **with 3 cavities** marked A, B, O CE
- 2431** **with 3 cavities** marked Anti-A, Anti-B, Anti-AB
- 2432** **with 4 cavities** marked Anti-A, Anti-B, Anti-AB, Anti-Rh





Blood Test and Urine Analysis

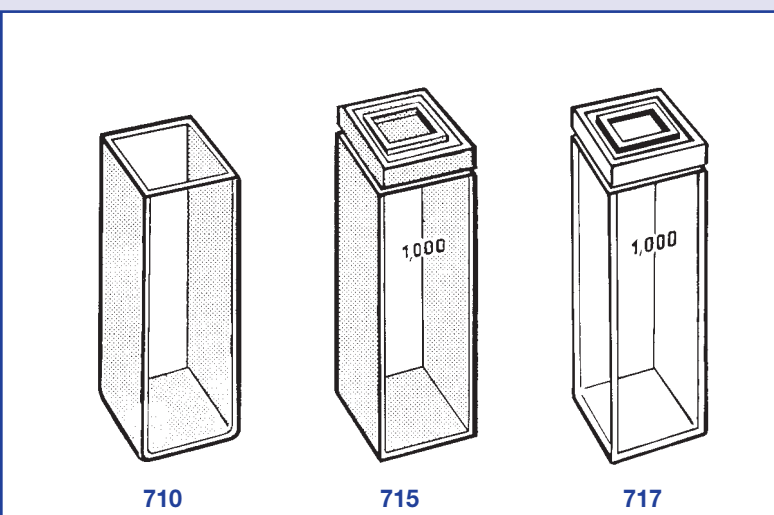


“Assistent” Precision Cuvettes

Disposable cuvettes

Of polystyrene, 12,5 x 12,5 x 45 mm, light path 10 mm. working range from 340 nm, excellent optical transparency available in styrofoam packs of 100 pcs.

- 705 makro** (standard)
capacity min. 2,5 ml, max. 4,5 ml.
dimensions: 10 x 35 mm
- 706 semimikro**
capacity min. 1,5 ml, max. 3,0 ml.
dimensions: 5 x 23 mm
- 734 Stirring spatula of plastic**, with cross-bar, especially for rectangular cuvettes, length app. 120 mm, cross-bar app. 9 mm.



Cuvettes

of optical glass; two opposite sides and bottom are optically ground and polished, the two other sides are frosted outside

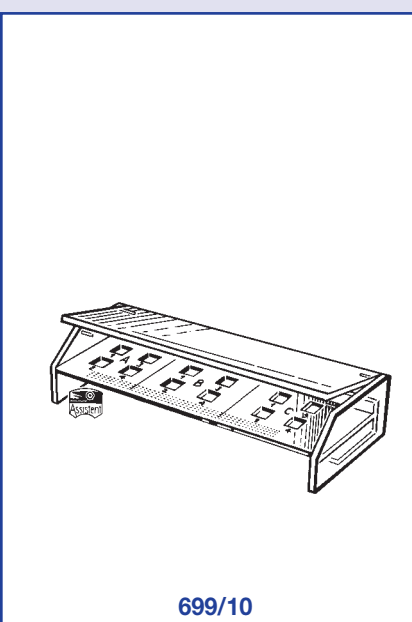
710/... outside dimensions: 12,5 x 12,5 x 45 mm (L W H), without cover, common type for series measurings

Light path mm	10 ± 0,1	20 ± 0,1	40 ± 0,2	50 ± 0,2
	710/10	710/20	710/40	710/50

712/... outside dimensions: 24 x 24 x 40 mm (L W H), without cover, special size for Elko photometer,

Light path mm	5 ± 0,1	10 ± 0,1	20 ± 0,1	40 ± 0,2	50 ± 0,2
	712/5	712/10	712/20	712/40	712/50

713/110 outside dimensions: 12,5 x 12,5 x 50 mm (L W H), without cover
Light path 10 ± 0,1 mm



outside dimensions: 12,5 x 12,5 x 45 mm (L W H), light path indicated on each cuvette,

715/... of special optical glass, with grooved cover of PTFE

715/6.. of quartz glass, with good optical transparency in the UV range, with grooved cover of PTFE,

Light path mm	1 ± 0,01	2 ± 0,01	5 ± 0,01	10 ± 0,01	20 ± 0,02	40 ± 0,02	50 ± 0,02
of special optical glass	715/1	715/2	715/5	715/10	715/20	715/40	715/50
of quartz glass	715/61	715/62	715/65	715/610	715/620	715/640	715/650

Fluorescence-Cuvettes,

all four sides and bottom optically ground and polished, outside dimensions 12,5 x 12,5 x 45 mm (L W H), light path indicated on each cuvette

717/.. of special optical glass, with grooved cover of PTFE

717/6.. of quartz glass, with good optical transparency in the UV range, with grooved cover of PTFE

Light path mm	10 ± 0,01	20 ± 0,01
of special optical glass	717/10	717/20
of quartz glass	717/610	717/620

699/10 Rack of Plexiglas® for 12 photometer cuvettes 10 mm, numbered, with field for inscriptions, with cover, without cuvettes

Blood Test and Urine Analysis

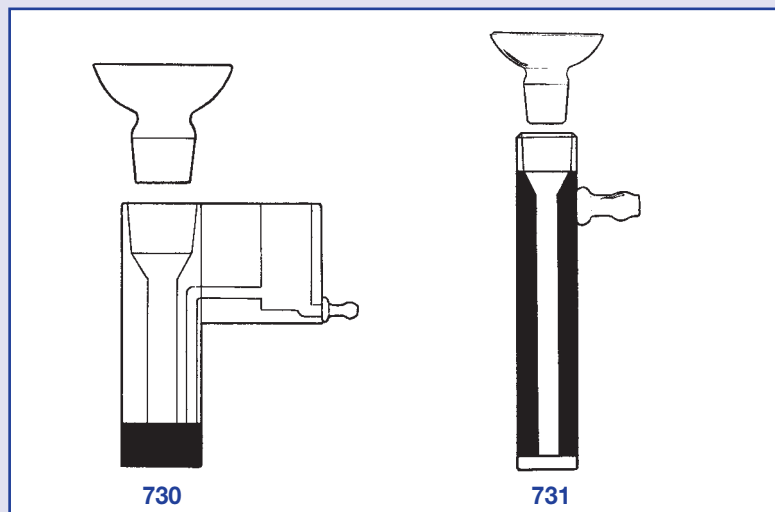


“Assistent” Precision Cuvettes

730 Suction cuvettes

of special optical glass with side arm and inner tubing for evacuation, self-masking, with funnel top NS 10 and plastic funnel, fits Eppendorf® photometer for example, inside width 4 mm, light path $10 \pm 0,01$ mm, outside dimensions (without funnel top): 12,5 x 12,5 x 40 mm (L W H)

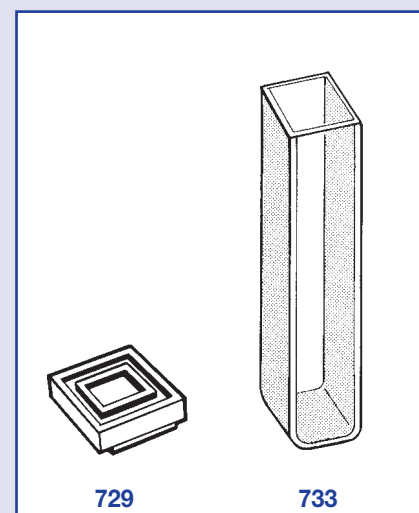
731 Flow through cuvettes of special optical glass with side arm and inner tube for evacuation, self-masking, with funnel top NS 10 and plastic funnel, fits Vitatron® photometer for example, inside width 4 mm, light path $10 \pm 0,01$ mm outside dimensions (without funnel top): 12,5 x 12,5 x 70 mm (L W H)



729 Grooved cover of PTFE

When ordering please indicate reference number of the cuvette and light path

733 Cuvettes of plate glass, special size, fits Linson photometer for example, outside dimensions: 16,8 x 16,8 x 75 mm (L W H), (inside: 12,8 x 12,8 mm)



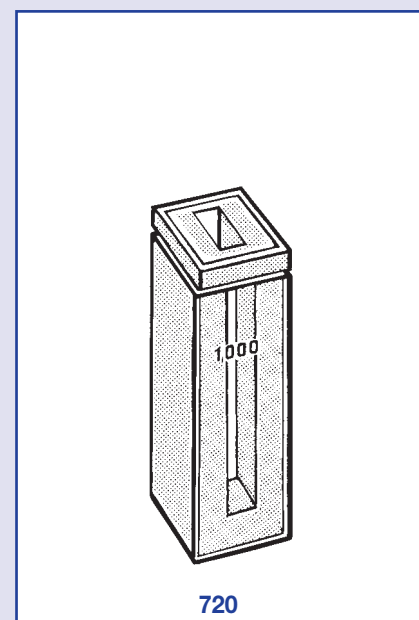
Cuvettes, semi-micro

two opposite sides and bottom are optically ground and polished, the two other sides are frosted outside, outside dimensions 12,5 x 12,5 x 45 mm (L W H), inside width 4 mm, flared at top to assist filling, light path indicated on each cuvette

720/... of special optical glass, with grooved cover of PTFE

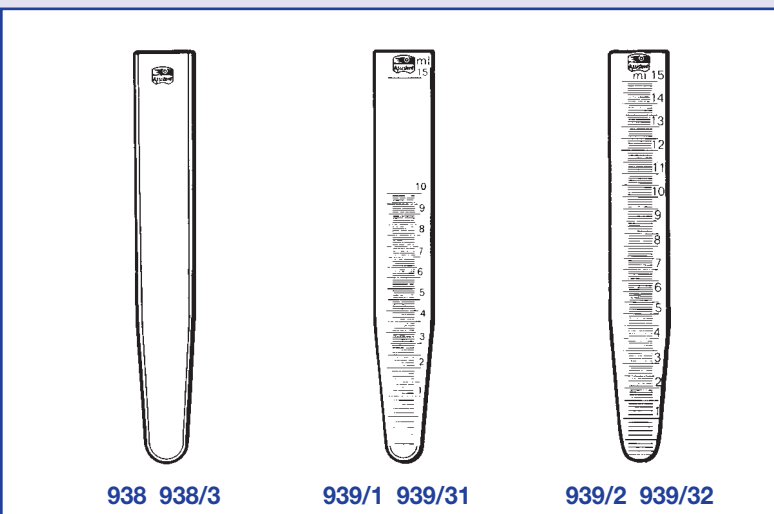
720/6.. of quartz glass with good optical transparence in the UV range, with grooved cover of PTFE

Light path mm	5 ± 0,01	10 ± 0,01	20 ± 0,02	40 ± 0,02	50 ± 0,02
of special optical glass	720/5	720/10	720/20	720/40	720/50
of quartz glass	720/65	720/610	720/620	720/640	720/650





Blood Test and Urine Analysis



938 938/3

939/1 939/31

939/2 939/32

“Assistent” Centrifuge Tubes

“Assistent”-Centrifuge tubes, ungraduated, conical, approx. 112 x 17 mm, capacity 10–15 ml
boxes of 100 pieces

rimless

938 AR[®]-/soda-glass

938/3 DURAN[®]/borosilicate glass 3.3

with rim

940 AR[®]-/soda-glass

940/3 DURAN[®]/borosilicate glass 3.3

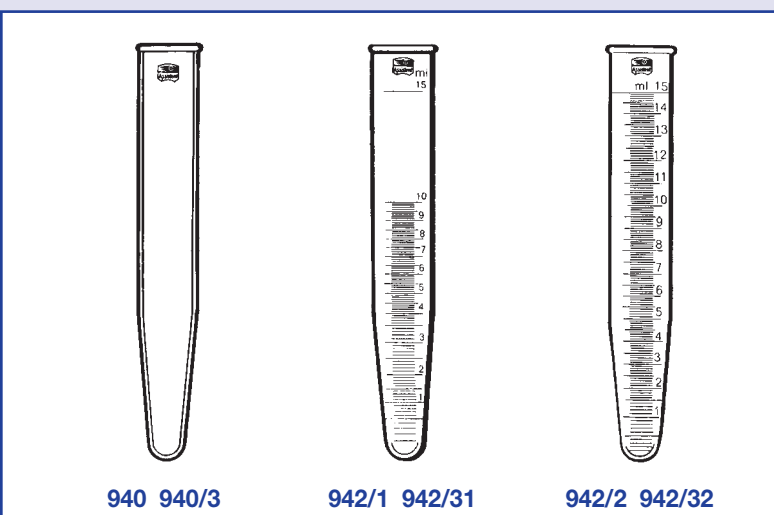
special sizes, AR[®]-/soda glass, 17 mm diam., conical, ungraduated

938/98 rimless, approx. 98–100 mm long

940/98 with rim, approx. 98–100 mm long

938/105 rimless, approx. 105 mm lang

940/105 with rim, approx. 105 mm lang



940 940/3

942/1 942/31

942/2 942/32

“Assistent” Centrifuge tubes

graduated, fused white* graduation “ASSISTENT-PERMANENT”, conical approx. 112 x 17 mm, capacity 10–15 ml, packing: 10 pieces, boxes of 100 pieces

rimless, 10 ml : 1/10 with mark at 15 ml

939/1 AR[®]-/soda glass

939/31 DURAN[®]/borosilicate glass 3.3

rimless, 15 ml : 1/10

939/2 AR[®]-/soda glass

939/32 DURAN[®]/borosilicate glass 3.3 (packs of 10 pcs)

with rim, 10 ml – 1/10 with mark at 15 ml

942/1 AR[®]-/soda glass

942/31 DURAN[®]/borosilicate glass 3.3 (packs of 10 pcs)

with rim, 15 ml : 1/10

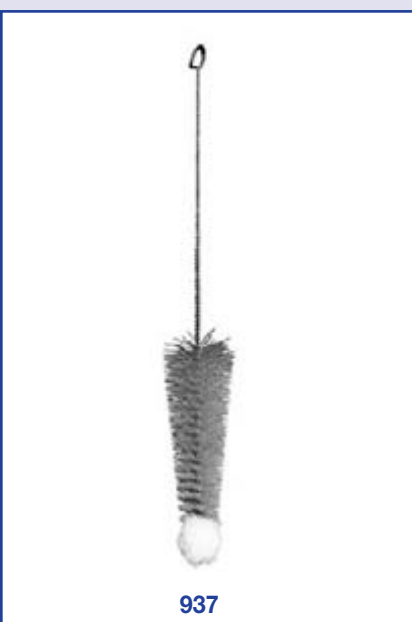
942/2 AR[®]-/soda glass

942/32 DURAN[®]/borosilicate glass 3.3 (packs of 10 pcs)

* also available with blue or brown scale

Special manufactures of centrifuge tubes, graduated or ungraduated, with conical, short conical or round bottom are also available. Kindly send us, if possible, a sample of glass with case, so that we can meet the dimensions.

937 “Assistent” brushes for conical centrifuge tubes
ca. 270 x 80 x 30 x 14 mm



937

Blood Test and Urine Analysis



“Assistent” Centrifuge Tubes

“Assistent” Centrifuge tubes, short conical bottom, rimless ungraduated

Length approx.	mm	98	107	100
Outside diam. approx.	mm	17	17	24–25
Capacity	ml	10–15	10–15	25–30
Packing	pieces	100	100	100
AR-®/soda glass		946/1	946/2	946/3
DURAN®/borosilicate glass 3.3		948/1	948/2	948/3

“Assistent” Centrifuge tubes, conical, ungraduated, with plastic stopper NS 12,5, approx. 115 x 17 mm, capacity 10–15 ml

AR-®/soda glass	943	(packs of 5 pieces)
DURAN®/borosilicate glass 3.3	943/3	(packs of 5 pieces)

“Assistent” Centrifuge tubes, graduated, fused white graduation “ASSISTENT-PERMANENT”

Length approx.	mm	98	115
Outside diam. approx.	mm	17	17
Capacity	ml	10–15:1/5	10 :1/10
Packing	pieces	10	5

AR-®/soda glass

947/1 short conical

944 conical with plastic stopper NS 12,5

DURAN®/borosilicate glass 3.3

949/1 short conical

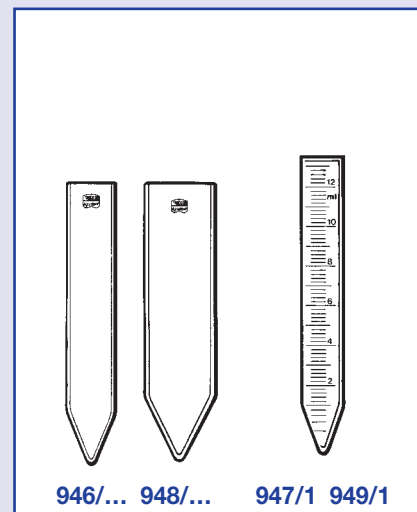
„Assistent“ Centrifuge tubes,

AR-®/soda glass, ungraduated, with screw cap, GL 14, sterilizable up to +121 °C, 100 pieces in a box

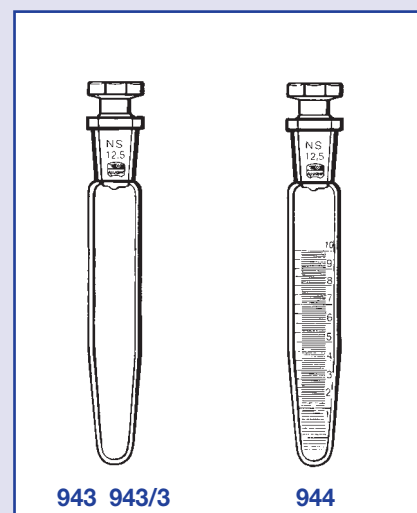
970 conical, approx., 112 x 17 mm, capacity 10–15 ml

976 rounded bottom, approx., 98 x 17 mm, capacity 10–15 ml

(NS = interchangeable standard ground)

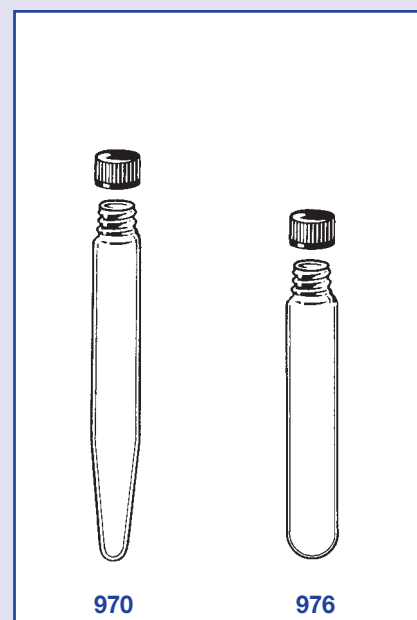


946/... 948/... 947/1 949/1



943 943/3

944

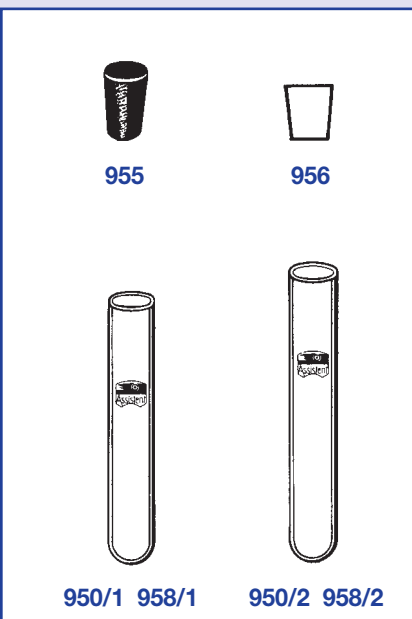


970

976



Blood Test and Urine Analysis



“Assistent” Centrifuge Tubes

“Assistent” Centrifuge tubes

round bottom, rimless, thick walled, ungraduated

Length		1	2	3	4	5	16	
approx.	mm	98	107	100	98	115	100	
Outside diam.	approx.	mm	17	17	24–25	33–35	40	16
Capacity	ml	10–15	10–15	25–30	50–55	70–100	10–12	
Packing	Stück	100	100	100	50	1	100	

AR®/soda glass

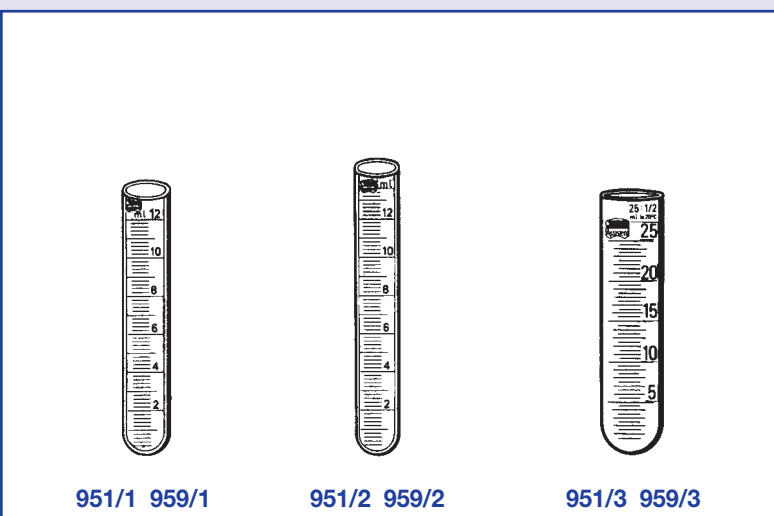
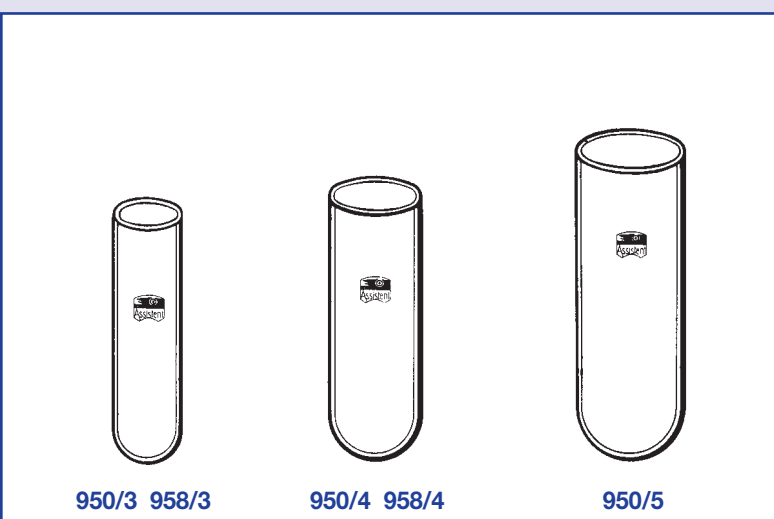
DURAN®/borosilicate

glass 3.3

	950/1	950/2	950/3	950/4	950/5	950/16
	958/1	958/2	958/3	958/4	958/5	958/16

955 Rubber stopper for centrifuge tubes, of 17 mm diam. (10–15ml)

956 Cellulose stoppers for test tubes and centrifuge tubes of 16/17 mm diam.



„ASSISTENT-PERMANENT“ Centrifuge tubes

round bottom, rimless, thick walled, graduated, fused white graduation “ASSISTENT-PERMANENT”

Length		1	2	3	4	
approx.	mm	98	107	100	98	
Outside diam.	approx.	mm	17	17	24–25	33–35
Scale	ml	10–15	10–15	25	50	
Subdivisions	ml	0,2	0,2	0,5	2	
Packing	Stück	10	10	10	5	

AR®/soda glass

DURAN®/borosilicate

glass, 3.3

	951/1	951/2	951/3	951/4
	959/1	959/2	959/3	959/4

Blood Test and Urine Analysis



“Assistent”-Labtray

2000 “Assistent” Labtray DBGM (reg.)

for collection and transportation of blood specimens, designed in accordance to Sahli method for hemoglobin determination consisting of:

Plastic tray, approx. 35 x 25 cm

Stand of Plexiglas® with 4 compartments for pipettes, micro slides, cotton pads etc., with 5-place holder for 5 bottles, amber glass, 30 ml, with frosted label, plain:

- wide neck bottle for Hayem’s fluid
- wide neck bottle for acetic acid
- narrow neck bottle for distilled water
- narrow neck bottle for alcohol or ether
- narrow neck bottle for hydrochloric acid

The tray is functional, lightweight and to be cleaned easily. The Plexiglas® stand is placed to one side of tray, leaving space free for lancets, cavity slides, filled pipettes.



2000

Spare parts and accessories for labtray No. 2000 and 2002

2000/1 Tray of melamine, white, ca. 35 x 25 x 4 cm high

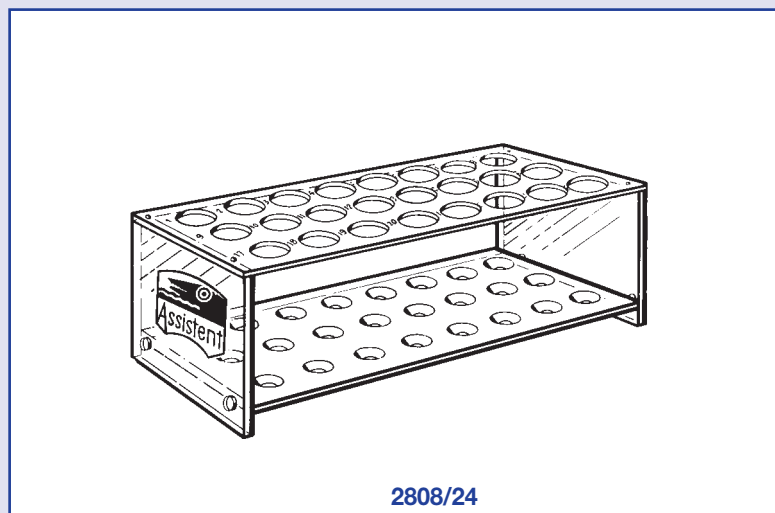
2000/2 Stand of Plexiglas® with 4 compartments and 5-place holder for bottles, empty

2000/3 Stand of Plexiglas®. complete with 5 bottles

2000/4 Bottles, amber glass, wide neck, with screw-cap and frosted label, 30 ml

2000/5 Bottles, amber glass, narrow neck, with screw-cap and frosted label, 30 ml

2808/24 Test tube rack of Plexiglas® for 24 tubes up to 18 mm diam. numbering of holes



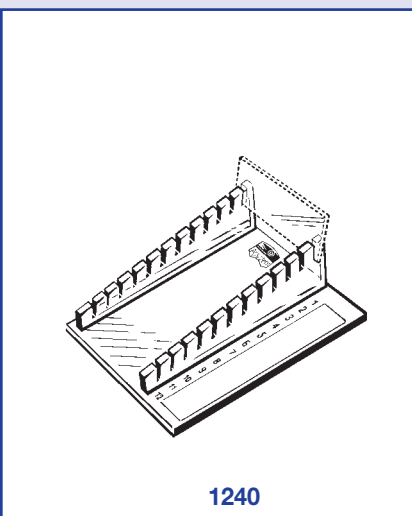
2808/24



Blood Test and Urine Analysis



2002



1240

“Assistent”-Labtray

2002 “Assistent”-Labtray 2

designed in view of the photometric hemoglobin determination consisting of:

Plastic tray, approx. 35 x 25 cm

Stand of Plexiglas® with 3 compartments for pipettes, slides, cotton etc., with 3-place holder for bottles.

Test tube rack of Plexiglas® for 24 tubes

We recommend No. 2775/14, 100 x 16 mm)

3 bottles, amber glass, 30 ml, with frosted label, plain:

- wide neck bottle for Hayem's fluid (red corpuscles)
- wide neck bottle for acetic acid (white corpuscles)
- narrow neck bottle for alcohol.

The free space of the tray is used for placing filled pipettes and blood smear slides.

We recommend the Plexiglas® rack No. 1240 for 12 micro slides, for safe keeping of slides.

2002/2 Stand of Plexiglas® with 3 compartments and 3-place holder for bottles, empty

2002/3 Stand of Plexiglas® complete, with 3 bottles, with label and screwcap.

1240 Rack of Plexiglas® for 12 micro slides, with numbering and field for inscriptions

Blood Test and Urine Analysis



“Assistent”-Waterbath-Thermostat,



3180 “Assistent”-Waterbath-Thermostat digital
complete with plexiglas bath No. 3194/1

Abrasion-free electronical **temperature-regulation with digital indication**
all immersed parts are of stainless steel

Technical Data:

Operating temperature range:	25 °C to +100 °C
with external cooling...	- 30 °C to 100 °C
Temperature stability:	± 0,2 K
Temperature setting:	digital
Temperature display:	digital
Heating power:	1000 W
Pump:	pressure
Pump capacity:	5 litres/min.
Pump pressure:	max. 0,12 bar
Safety class:	class 3 (DIN 12876)
Mains connection:	230 V, 50 Hz
Dimensions (w x d x h):	120 x 130 x 330 mm
Weight:	3,0 kg

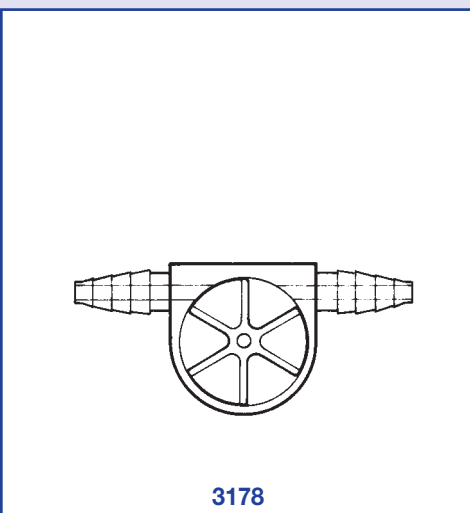
cooling-coil and connection for external use available as spare-parts



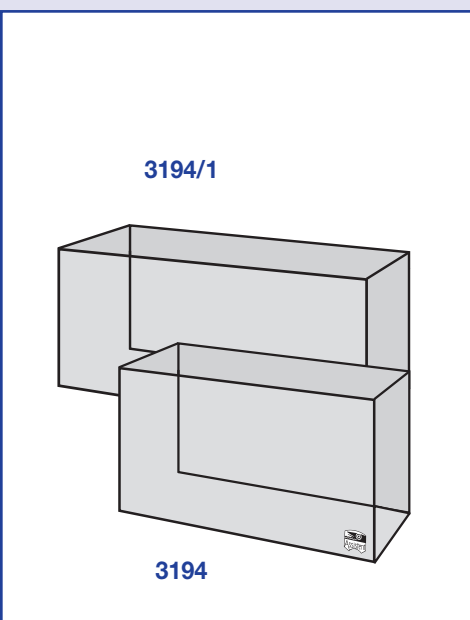
Blood Test and Urine Analysis



3170



3178



3194/1

3194

“Assistent” Accessories for Thermostatic Water Bath

3170/... Aquaclean

stabilizing solution for water baths plastic bottle of 100 ml, concentrate for 100 l water
1 ml for 1 l water

3170/1 blue

3170/3 clear

Advantages:

- prevents algae and bacteria
- prevents odor-formation
- prevents obstruction of tubings and heating system
- saving of time: frequent cleaning of the tank is unnecessary
- tubing and parts are lasting longer
- solution is without aggressive phosphate and oxidating or reducing substances, very low ph-changement of the water
- without solvents
- prevents foam-formation, even with strong circulation

3172 Aquaclean 2

plastic bottle of 100 ml, blue concentrate for 50 l water, 2 ml for 1 l water

Advantages: as for No. 3170

Use:

- take 2 ml of the solution for 1 l of distilled water (take care to clean the tank before use)
- can be used for all kinds of thermostates and circulation pumps of metal, glass or plastic
- can be used even for closed temperation systems as for blood gas analyser

3178 Water flow indicator

clear plastic (SAN), for rubber tubing 6-11 mm ins. diam., for the control of water flow in water baths (e.g. between thermostat and photometer) and distillation.

“Assistent” Plexiglas® tanks

3194 without inclined base, approx. 27 x 20 x 20 cm (L W H)

3194/1 without inclined base, 34,5 x 14 x 15 cm h, for no. 3180

Blood Test and Urine Analysis



“Assistent” Accessories for Thermostatic Water Bath

3188/... "Assistent" Water bath racks for insertion into the Plexiglas® tanks

3188/1 for photometry

for dry heating of 6 square cuvettes as well as for 8 small Boehringer bottles “Monotest” or “Merck-1-Test” and 2 large “Mono-10” bottles or Merck bottles (for distilled water etc.) (i. e. with 8 holes of 23 mm diam. and 2 holes of 35 mm diam.)

3188/2 for 16 small Boehringer bottles “Monotest” or “Merck-1-Test” (i. e. with 16 holes of 23 mm diam.)

3188/3 with 20 holes of 18 mm diam., for centrifuge tubes or test tubes

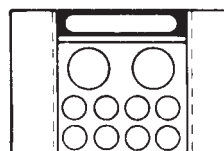
3188/4 with 24 holes of 11 mm diam., for reaction tubes 1,5 ml

3188/6 dto., with 24 holes for test tubes up to 12 mm diam. (Coagulometer tubes)

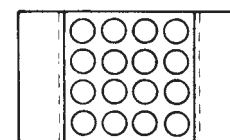
All dimensions given are approximate only

3189/4 Control thermometer, precision type, +20 +65 °C : 1/5 with factory certificate

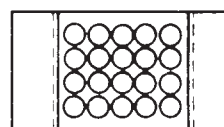
3189/5 Support to attach the control thermometer to the tank



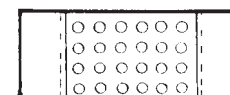
3188/1



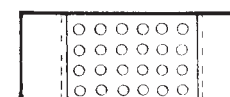
3188/2



3188/3



3188/4



3188/6

“Assistent” Water Bath Racks

4263 “Assistent” Water bath rack stainless steel, circular, approx. 100 mm diam., for 9 test tubes or centrifuge tubes up to 18 mm diam., fitting into a beaker low form 1000 ml



4263



Microscopic and Staining Utensils



Microscopic and Staining Utensils



“Assistent” Microsopical Cover Glasses

Features and Technical Data of “Assistent” Cover Glasses

- highest hydrolytic resistance
- made of borosilicate glass
- hydrolytic class 1
- excellent resistance to chemicals
- emission of alkali: approx. 15 to 24 μg , $\text{Na}_2\text{O}/\text{g}$ glass
- chemical cleaning procedure before processing

Most suitable for fluorescent microscopy. Incident ultraviolet rays with wave lengths longer than 320 nm do not cause fluorescence in “Assistent” coverslips. Also mercury lines at 334 and 365 nm do not create self-fluorescence in the coverslips.

For use with mercury illumination: Please take care to filter out the mercury lines with wave lengths shorter than 313 nm to obtain best possible evaluation.

Packing: in tightly closed plastic boxes giving good protection against humidity and climatic influences.

Solubility:

< 1 $\mu\text{val/g}$ base emission as equivalent value, glass of hydrolytic class 1

Refractive index at 20 °C (acc. to DIN ISO 8255)

$n_e = 1,5255$ } tolerance = $\pm 0,0015$
 $n_D = 1,5230$ }

Abbe number $V_e = 55$

Density at 20 °C in g/cm^3 $\rho = 2,51$

Mean linear coefficient of thermal expansion in 10^{-6} K^{-1}

$\alpha_{(20-300 \text{ °C})} = 7,2$

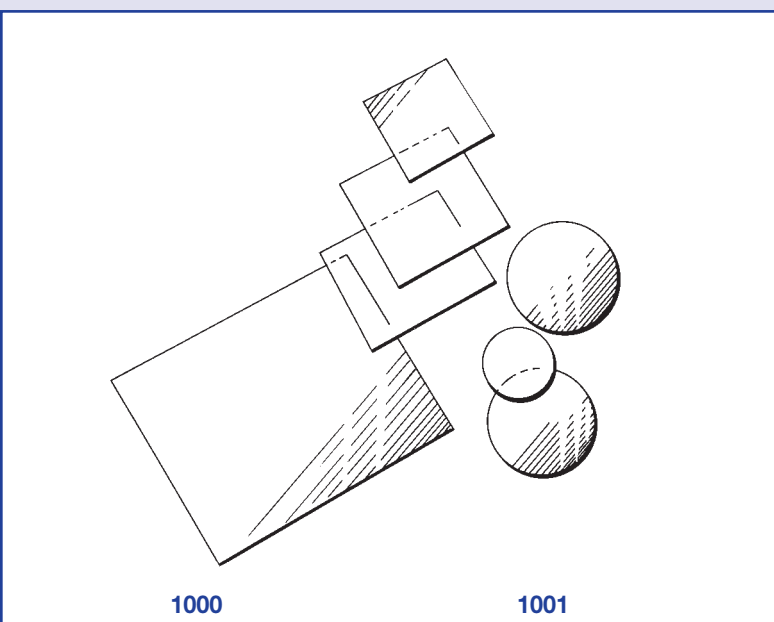
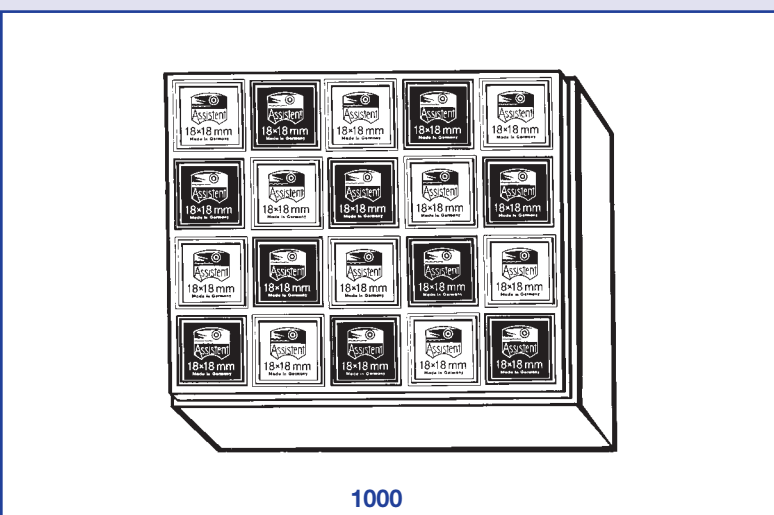
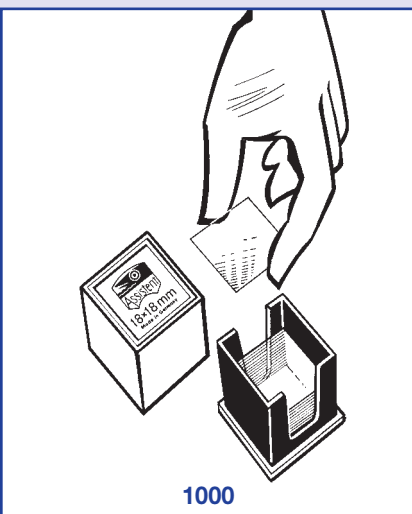
Transformation temperature in °C $T_g = 557$

Softening temperature ($\eta = 10^7 \cdot \text{dPas}$)

in °C EW = 736



Microscopic and Staining Utensils



“Assistent” Microscopical Cover Glasses, CE

“Assistent” Cover glasses

Selected glass quality as specified at previous page, hydrolytic class 1, therefore highly resistant and permanent; precisely cut, faultless.

Thickness	Nr. 0	0,08–0,12 mm
	Nr. 1	0,13–0,16 mm
	Nr. 1½	0,16–0,19 mm
	Nr. 2	0,19–0,23 mm

Thickness No. 1 will be supplied if not otherwise stated in the order.

Cover-glasses in thickness 0, 1½ and 2 are especially produced and can not be returned or exchanged.

Packing: Plastic boxes of 50 or 100 glasses, 20 or 10 boxes (1000 glasses) in a carton. Two sides of the boxes of most standard sizes are cut out as illustrated, for convenient removal of single cover glasses.

Sizes of No. 990 and 1000

12x12	15x15	18x18	20x20	22x22	mm
24x24	24x18	26x21	30x24	32x22	mm
40x22	32x24	36x24	40x24	40x25	mm
46x24	50x24	50x25	55x24	55x25	mm
60x22	60x24	60x25			mm

990 “Assistent”-Cover glasses
in plastic boxes of 100 pcs,
10 boxes (1000 pcs) in a carton

1000 “Assistent”-Cover glasses
in plastic boxes of 50 pcs,
20 boxes (1000 pcs) in a carton

1001 “Assistent”-Cover glasses
in plastic boxes of 100 pcs,
10 boxes (1000 pcs) in a carton

diam. 10 12 13 14 15 18 20 22 24 25 30 mm

“Assistent” Cover glasses, selected thickness

1014 thickness 0,17 ± 0,01 mm

1015 thickness 0,17 ± 0,02 mm

Sizes:

18x18 20x20 22x22 24x24 26x21 32x24 mm
40x24 50x24 mm

Special sizes are also available.

High quality microscope objectives are adjusted to be used with cover glasses of thickness No. 1. Therefore it is essential to use cover glasses of the correct thickness

Standard sizes (in bold type) are generally available from stock. Special sizes (especially larger ones as mentioned) can also be manufactured within short.

Microscopic and Staining Utensils



“Assistent” Microscopical Cover Glasses CE

“Assistent” Cover glasses packed in boxes of 1/2 oz, some packed in 1/4 oder 1 oz depending on size and thickness,

Thickness	Nr. 0	=	0,08–0,12 mm
	Nr. 1	=	0,13–0,16 mm
	Nr. 1½	=	0,16–0,19 mm
	Nr. 2	=	0,19–0,23 mm

1002	square	Thickness No. 0
1003	square	Thickness No. 1
1003/15	square	Thickness No. 1½
1004	square	Thickness No. 2
1005	rectangular	Thickness No. 0
1006	rectangular	Thickness No. 1
1006/15	rectangular	Thickness No. 1½
1007	rectangular	Thickness No. 2
1008	circular	Thickness No. 0
1009	circular	Thickness No. 1
1009/15	circular	Thickness No. 1½
1010	circular	Thickness No. 2

inches	mm	inches	mm
1/2 x 1/2	12 x 12	1 1/2 x 3/4	
	15 x 15	1 1/2 x 7/8	38 x 22
3/4 x 3/4	18 x 18	1 3/4 x 1	
	20 x 20	1 1/2 x 1 1/2	
7/8 x 7/8	22 x 22	2 x 7/8	51 x 22
1 x 1	24 x 24	2 x 2	
	21 x 26	2 1/2 x 7/8	63 x 22
	20 x 40	3 x 1	76 x 25
	24 x 32	3 x 1 3/4	
		3 x 2	76 x 51

Other sizes are also available.

1019 **Lens tissue paper** approx. 90 x 72 mm, in boxes of 500 sheets

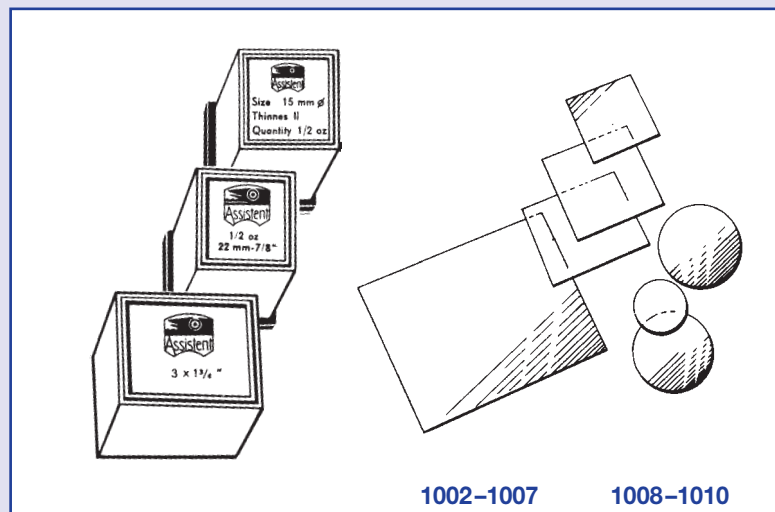
1020 **Cover glass forceps**, nickel-plated, angled tips

1025/... “Assistent” **Histokitt** mounting medium for histology/microscopy

- hardening time: 20 minutes
- neutral colourless
- does not affect form, structure or colour of the specimen
- resistant to heat, cold (down to –17 °C), humidity and light including UV rays
- may be diluted by benzene, chloroform, dioxane, xylene

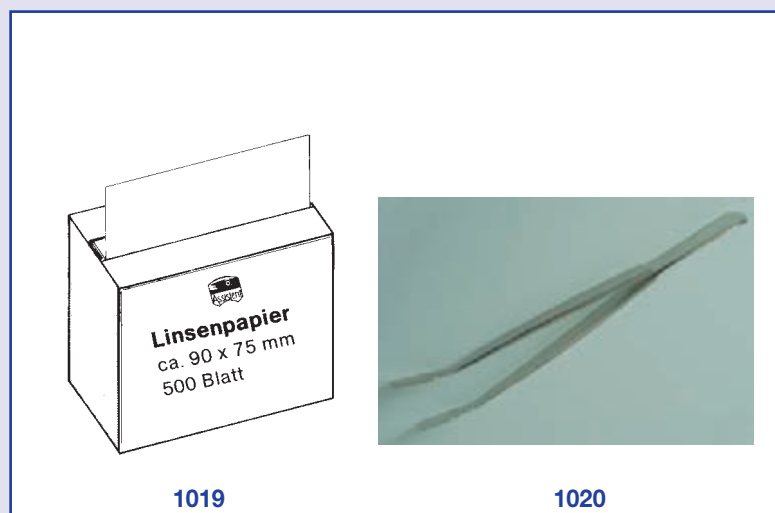
in bottles of

100	250	500 ml
1025/100	1025/250	1025/500



1002–1007

1008–1010



1019

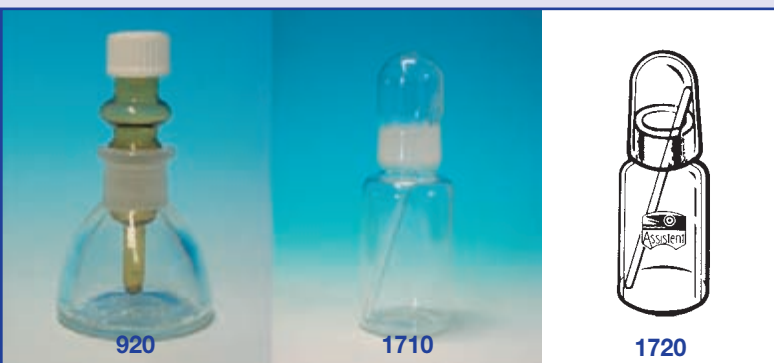
1020



1025



Microscopic and Staining Utensils



“Assistant” Accessories for Microscopy and Staining

920 **Bottles for cedarwood oil**
with ground-in amber pipette, plastic cap and rod

Bottles for Canada balsam, with rod

1710/30 with ground-on cap, 30 g

1710/60 60 g

1720/30 with loose cap, 30 g

1720/60 60 g

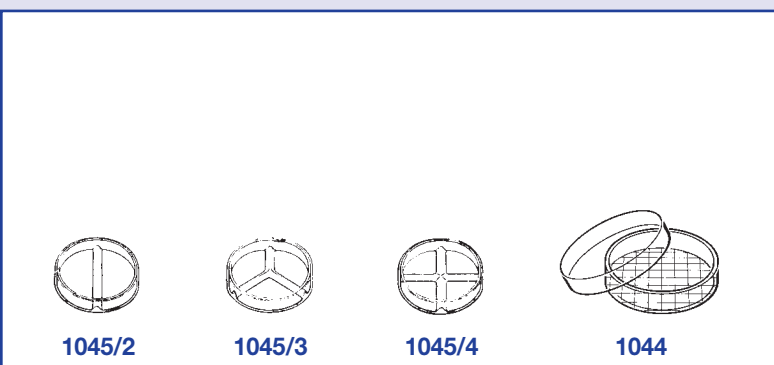


1041 **Dappen glasses**

10 edges, colours: clear, rose, green, amber

Petri dishes of glass

	diam. of cover	height of base
1042/4	approx. 4 cm	approx. 1,2 cm
1042/6	approx. 6 cm	approx. 1,5 cm
1042/8	approx. 8 cm	approx. 1,5 cm
1042/10	approx. 10 cm	approx. 2 cm
1042/12	approx. 12 cm	approx. 2 cm
1042/15	approx. 15 cm	approx. 2,5 cm
1042/20	approx. 20 cm	approx. 5 cm



Petri dishes of DURAN®/borosilicate glass 3.3

diam. of cover approx. 10 cm, height of base approx. 2 cm,

1045/2 base with 2 equal compartments

1045/3 base with 3 equal compartments

1045/4 base with 4 equal compartments

1044 **Petri dishes of glass**, with grid of 10 mm squares on bottom, approx. 10 x 2 cm



1049 **Drigalski spatula** for bacteriology
length approx. 146 mm, large approx. 45 x 35 mm,
rod-diam. approx. 5 mm

1181 **Felt-tip pens** for marking glass,
blue, red or black

1182 **Glass-writing diamonds**

“Assistant” **staining blocks** (Vaccine dishes)
approx. 4 x 4 cm, with one cavity

2020 clear glass, with white glass-cover

2020/1 clear glass, without cover

2021 black glass, with white glass-cover

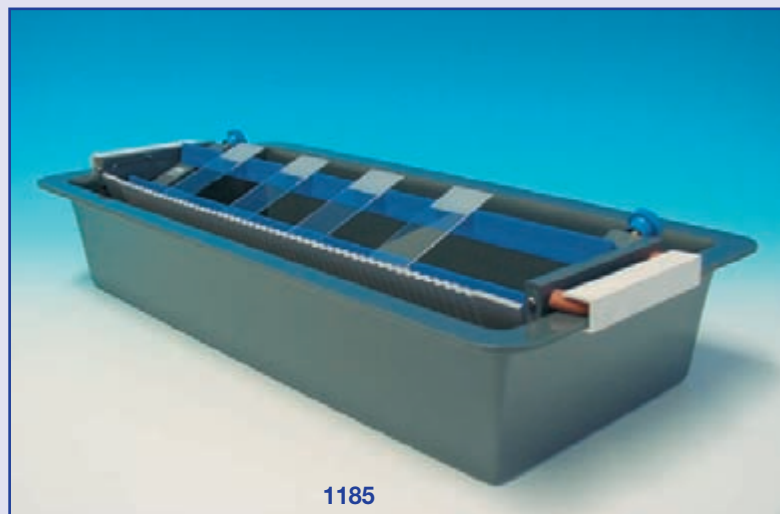
2021/1 black glass, without cover

Microscopic and Staining Utensils



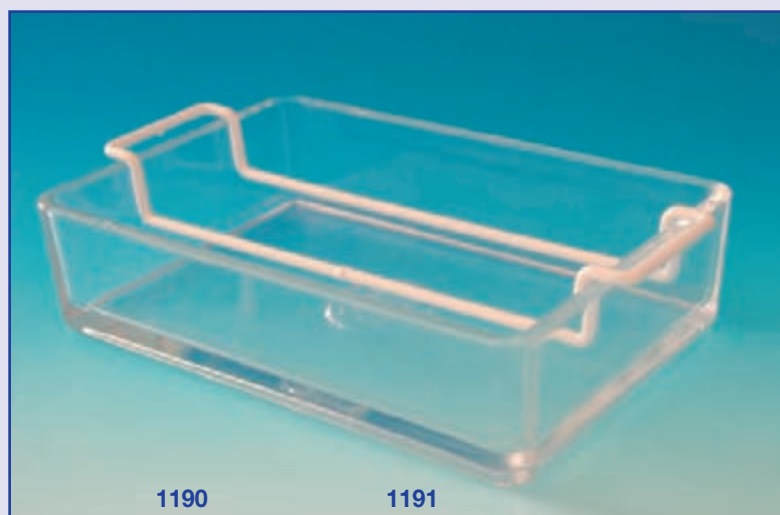
“Assistent” Staining Racks

- 1185** “Assistent” Staining bridge “DBGM” of Plexiglas® extensible, for trays and basins of 38 cm to 62 cm. The bridge can be fixed at inclined or horizontal position. Complete with staining tray of PVC and two clamps.
Size of tray: approx. 38 x 17 x 8 cm
- 1186** Spare staining bridge (without tray)
- 1187** Spare staining tray of PVC approx. 38 x 17 x 8 cm



1185

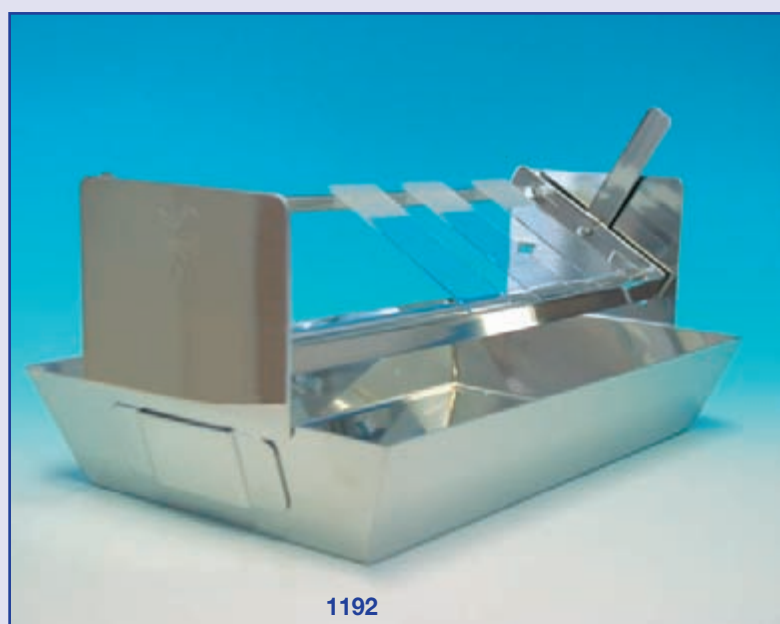
- 1190** “Assistent” Staining rack of plastic-coated wire, with glass tray No. 2900/4 (approx. 22 x 15 cm)
- 1191** “Assistent” Staining rack of plastic-coated wire (without tray)



1190

1191

- 1192** “Assistent” Staining tray of stainless steel, with tilting rack, size of tray approx. 24 x 14 x 4 cm, slanted sides



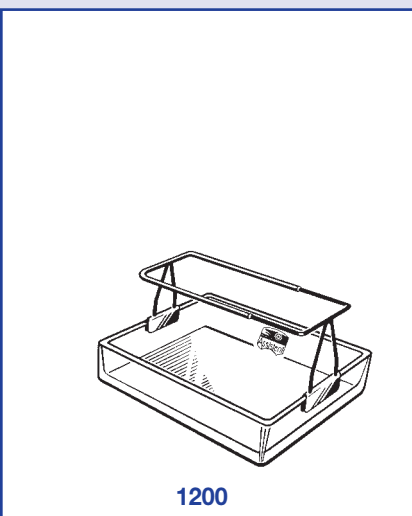
1192



Microscopic and Staining Utensils



- 1198** "Assistant" Staining rack "DBGM"
of stainless steel, tiltable, to fit glass trays No. 2900/4
size 4, without tray



- 1200** Staining rack acc. to Bongert
of stainless steel, with glass tray of approx.
22 x 15 cm, No. 2900/4

Microscopic and Staining Utensils



“Assistent” Staining Troughs and Jars

- 1201/...** “Assistent” Staining rack,
round, stainless steel with glass jar and ground-in
cover with knob, for staining in series, especially for
the method acc. to Papanicolaou, for micro slides
of 26 mm width
- 1201/14** for 14 micro slides
1201/24 for 24 micro slides
1201/42 for 42 micro slides
1201/98 for 98 micro slides



1201/14

Spare parts:

- 1202/...** “Assistent” Staining rack
round, stainless steel, for micro slides of 26 mm
width, without jar
- 1202/14** for 14 micro slides, outs. diam, approx. 83 mm
1202/24 for 24 micro slides, outs. diam. approx. 96 mm
1202/42 for 42 micro slides, outs. diam. approx. 137 mm
1202/98 for 98 micro slides, outs. diam. approx. 191 mm

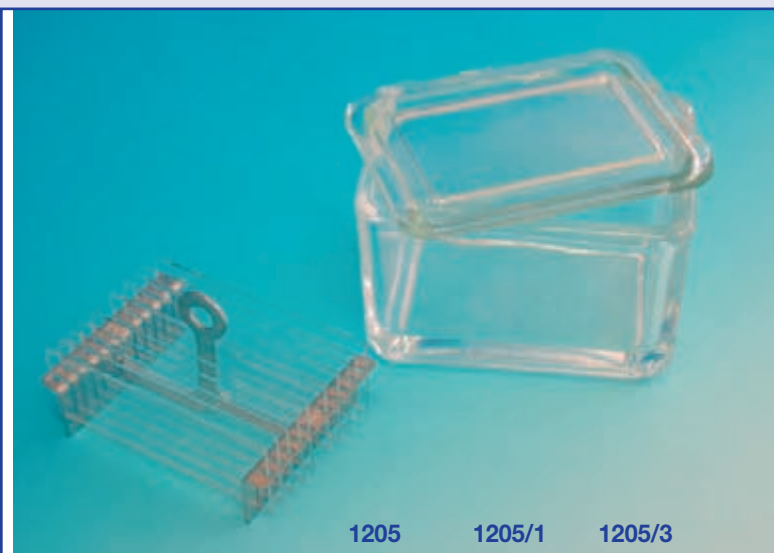


1202/...

- 1203/...** Glass jar with ground-in cover with knob, for
above, height approx. 170 mm
- 1203/14** for 14 micro slides, outs. diam, approx. 100 mm
1203/24 for 24 micro slides, outs. diam, approx. 120 mm
1203/42 for 42 micro slides, outs. diam, approx. 160 mm
1203/98 for 98 micro slides, outs. diam, approx. 220 mm



Microscopic and Staining Utensils



1205 1205/1 1205/3

“Assistent” Staining Troughs and Jars

1205 “Assistent” Staining set
consisting of:
Glass trough with cover and tray of stainless steel, for 10 micro slides 76 x 26 mm or any other width up to 45 mm, complete in a box (without micro slides)

1205/1 Glass trough with cover
approx. 9 x 7 x 6,5 cm outs.

1205/2 Glass trough without cover

1205/3 Glass cover



1205/4 1205/5

1205/4 Tray of stainless steel

1205/5 Tray of stainless steel for 10 micro slides, with long handle (approx. 75 mm)



1210

1210 Dye-bath set
for staining in various solutions and to avoid dropping impurities consisting of:
3 glass troughs with cover No. 1205/1
1 tray No. 1205/4
1 glass dish No. 2900/5, approx. 27,5 x 15 x 6 cm

Microscopic and Staining Utensils



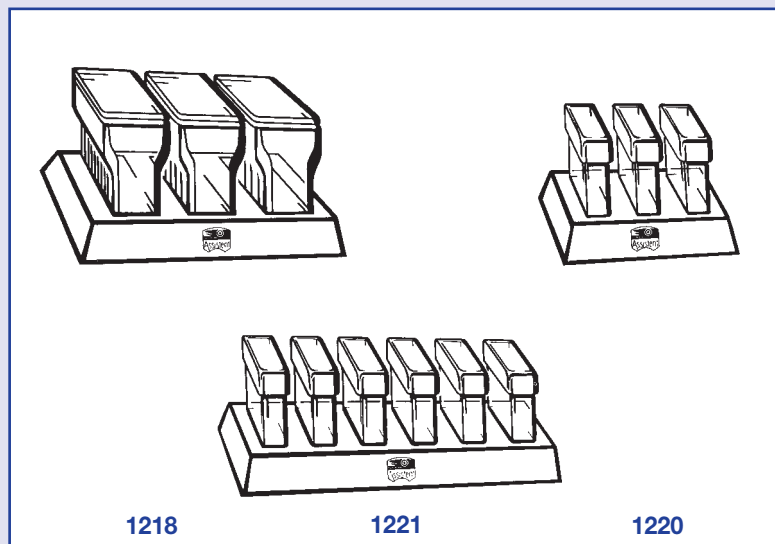
“Assistent” Accessories for Staining

“Assistent” Staining stands complete with staining jars

1218 of Plexiglas® with 3 jars acc. to Hellendahl

1220 wooden, with 3 rectangular jars

1221 wooden, with 6 rectangular jars



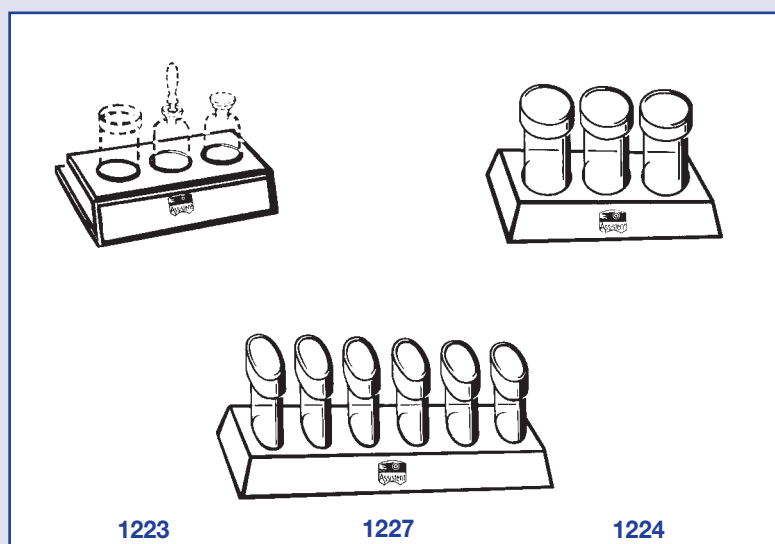
1223 “Assistent” Staining stand of Plexiglas®, 3-place (without jars), suitable for: cylindrical jars No. 1231, narrow and wide neck bottles 50 ml Nos. 1301–1313, bottles 50 ml with frosted label No. 1321, pipette bottles 50 g No. 2600-2601

1224 wooden, with 3 cylindrical jars

1225 wooden, with 6 cylindrical jars

1226 wooden, with 3 oval jars

1227 wooden, with 6 oval jars





Microscopic and Staining Utensils



“Assistent” Accessories for Staining

“Assistent” Staining jars of glass with overlapping cover

1230 rectangular, approx. 85 x 40 x 20 mm

1231 cylindrical, approx. 85 x 40 mm



“Assistent” Staining jars of glass with overlapping cover

1232 oval, approx. 85 x 40 mm

1234 **Staining prisms acc. to Borel**
of glass, suitable for cylindrical jars No. 1231

Microscopic and Staining Utensils



“Assistent” Micro Slides



“Assistent” Micro slides „ELKA“

approx. 76 x 26 mm (3 x 1")

thickness approx. 1 mm (standard thickness), selected glass quality, non-corrosive, precleaned, ready for use

50 pcs in a box,

5000 pcs in a carton

- 2400** half-white, cut edges
- 2401** half-white, ground edges, 90°
- 2402** white, cut edges
- 2403** white, ground edges, 90°

- 2404** special thickness 0,6–0,8 mm
half-white, cut edges



“Assistent” Micro slides approx. 76 x 26 mm, thickness approx. 1 mm, half-white,

with frosted end (on both sides)

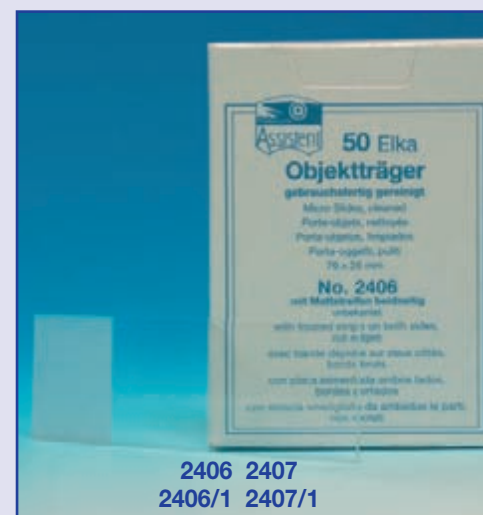
- 2406** cut edges
- 2407** ground edges, 90°

with frosted end (on one side)

- 2406/1** cut edges
- 2407/1** ground edges, 90°

.../9 with tropical protection packing

Special sizes and types of micro slides are also available.



“Assistent” slides Superfrost®



Easy to mark and easy to read colour-coding system for medical and scientific laboratory.

The micro slides Superfrost® with colour-coded end are available in 6 different colours: white, blue, pink, yellow, green, orange. The coating is resistant to all common solvents.

- 2408** Micro slides Superfrost®, cut edges
- 2409** ground edges
- 2409/1** Micro slides, Superfrost/Plus, ground edges, with coloured label white, pack of 72 pcs.



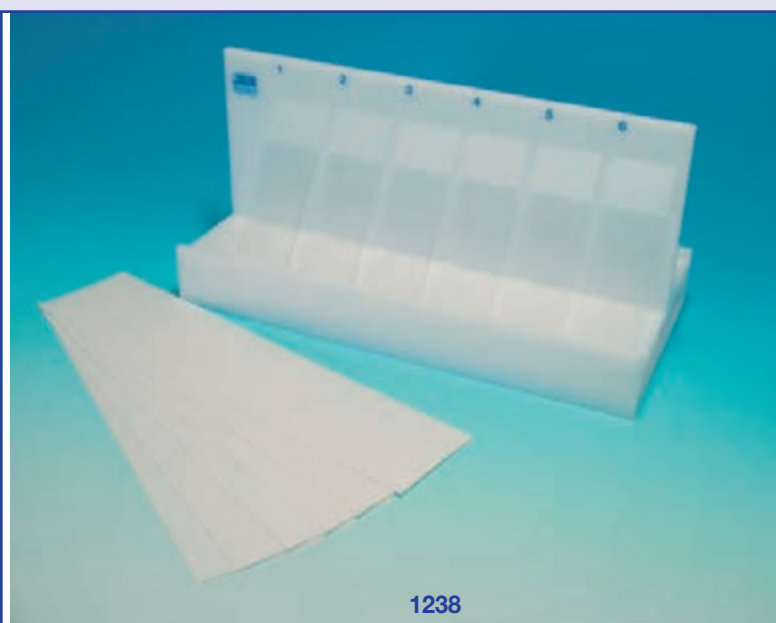


Microscopic and Staining Utensils



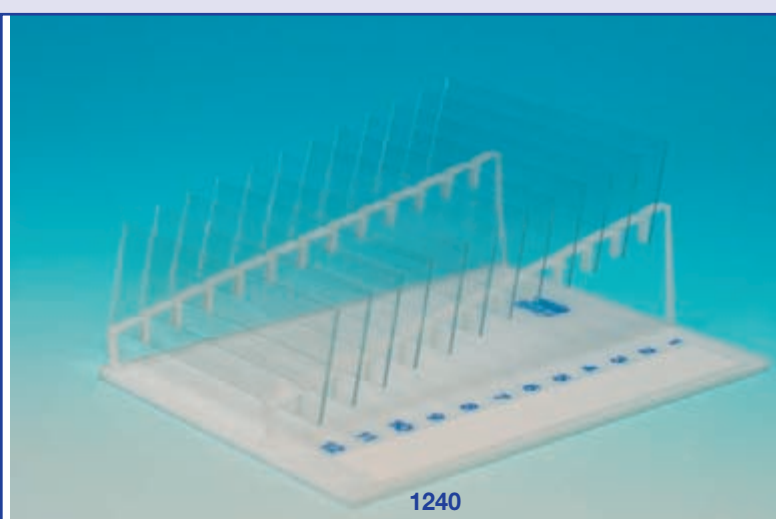
“Assistent” Micro Slide Dispenser

2440 “Assistent” Micro slide dispenser (“Objectomat DBGM”) accommodates 50 micro slides of the standard size 76 x 26 mm, dust-free storage. One micro slide always ready to hand. No finger prints by removing as slides are touched at the sides only (without slides).



1238 “Assistent” Drying rack of Plexiglas® with 12 numbered positions for drying stained micro slides. The slanted slides are set on exchangeable blotting paper. In the base of the rack is a suitable storing place for 2 packs of paper. Including 2 packs of blotting paper.

1238/1 Spare blotting paper, in packs of 25 sheets of approx. 200 x 45 mm



1240 “Assistent” Rack of Plexiglas® with numbered positions for 12 micro slides and a field for inscriptions (pencil notes can be rubbed out or removed by a moist cloth).

Microscopic and Staining Utensils



“Assistent” Immunofluorescent printed slides, CE
 approx. 75 x 25 mm, thickness approx. 1 mm,
 with Epoxy-cover
 100 pcs in a box

2420 black, 8 numbered circles of approx. 6 mm diam.



2421 black, 3 circles of approx. 14 mm diam.



2422 black, 3 numbered circles of approx. 10 mm diam.



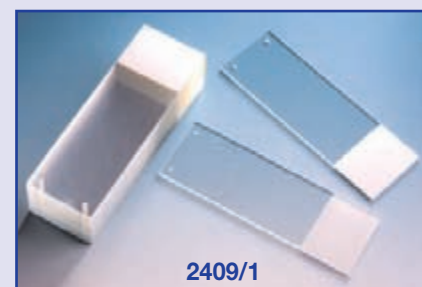
2423 black, 10 circles of approx. 6 mm diam.



2424 blue, one circle of approx. 8 mm diam.



2409/1 Micro slides Superfrost/Plus CE
 ground edges, with coloured label white,
 pack of 72 pcs.





Microscopic and Staining Utensils



“Assistent”-Micro Life®

The “Living” Slide

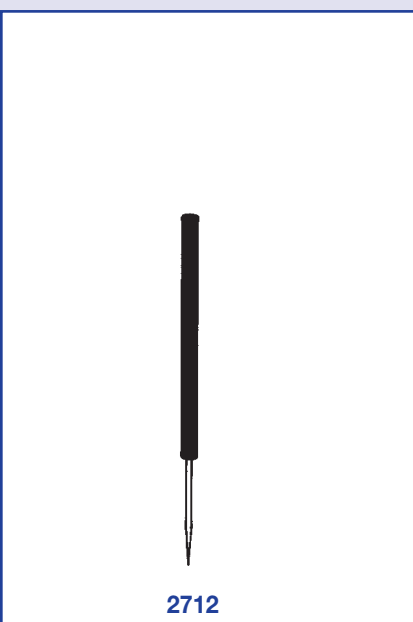
2426 Micro Life®:

- enables microscopic observation of long term cultures of microorganisms for scientific research and instruction
 - can be used with all light microscopes and stereoscopic magnifiers. Correct plane location of coverglasses means that all microscopic contrast procedures are possible
 - for microscopic monitoring of activated sludge flocs in purification plants
 - makes flow microscopy easy: e.g. plankton investigations or inorganic particles in solution can be reused after simple cleaning
- For easy cleaning use special cleaning and disinfecting-solution Micro Life® CLEANER No. 1403
- is supplied with a special pipette. It is not only used to fill the vessels with fluids but also to flood particles into the field of observation. Its sealing mode means that pump movements can be used for thorough and rapid mixing of media which are introduced as well as for cleaning purposes

Pack contents: 1 Micro Life® 2426, 1 special pipette, operating instructions



- 1403 “Assistent”-Micro Life CLEANER,**
bottle of 100 ml
special cleaning solution for slides No. 2426



2712

- 2712 Dissecting needles** stainless steel,
with wooden handle

Microscopic and Staining Utensils

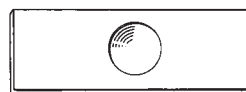


“Assistent” Cavity Slides and Plates

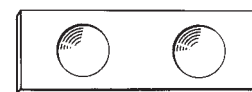
“Assistent” Micro slides with cavities, approx. 76 x 26 mm, thickness approx. 1,5 mm, ground edges, in boxes of 50 pieces

- 2410 with 1 cavity
2411 with 2 cavities

CE



2410

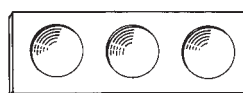


2411

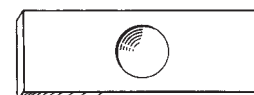
- 2412 with 3 cavities

2415 “Assistent” Micro slides, approx. 76 x 26 mm, thickness 3–4 mm, with one cavity of approx. 22 mm diam., depth 1,75 mm, ground edges, in boxes of 20 pcs

CE



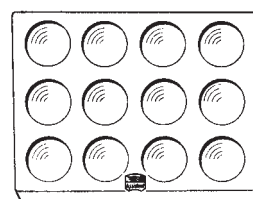
2412



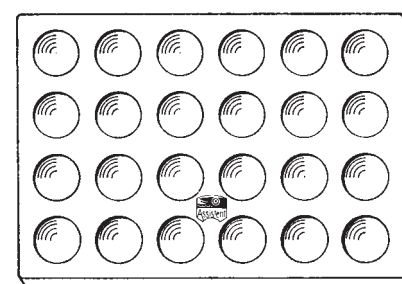
2415

2417 **Glass plates**, frosted surface with 12 polished cavities, diam. 16 mm, depth 1,8 mm, 76 x 60 x 5 mm

2418 24 cavities, diam. 16 mm, depth 1,6 mm, 140 x 85 x 3 mm



2417



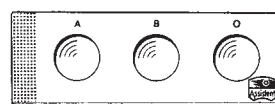
2418

2430 “Assistent” Micro slides of opal glass, for blood typing with frosted label with 3 cavities marked A, B, O

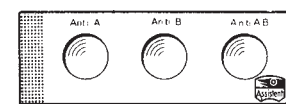
CE

2431 “Assistent” Micro slides of opal glass, for blood typing with frosted label with 3 cavities marked Anti-A, Anti-B, Anti-AB

CE



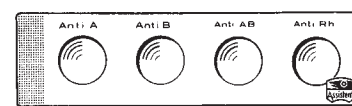
2430



2431

2432 “Assistent” Micro slides of opal glass, for blood typing with frosted label with 3 cavities marked Anti-A, Anti-B, Anti-AB, Anti-Rh

CE



2432



Microscopic and Staining Utensils



2450



2460



2461



2470



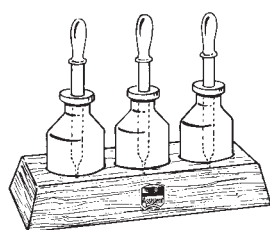
2480 2481 2482



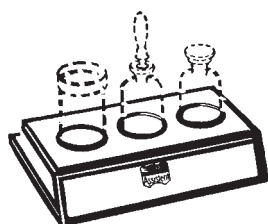
2481



2600/... 2601/...



2608/1 2609/1



1223



2620

“Assistant” Staining Dishes

“Assistant” Pipette Bottles

“Assistant” Staining dishes of glass

2450 acc. to Schieffederdecker for 10 micro slides of approx. 76 x 26 mm (or for 20 slides back to back), with cover

2460 acc. to Hellendahl with extension, for 8 micro slides of approx. 76 x 26 mm (or for 16 slides back to back), with cover

2461 acc. Hellendahl, as above, but without extension

2470 Coplin jars for 10 micro slides of approx. ca. 76 x 26 mm, with cover

2480 Staining trough with cover, for staining tray No. 2481, ca. 105 x 85 x 80 mm

2481 Staining tray for 10 micro slides (or for 20 slides back to back) of approx. 76 x 26 mm, or any other width up to 50 mm, fitting trough No. 2480.

2482 Wire handle for staining tray No. 2481

“Assistant” Pipette bottles/Staining bottles conical shoulder, interchangeable ground

2600/... clear glass, with ground-in pipette with olive at top

2600/50 capacity 50 ml

2600/100 capacity 100 ml

2601/... amber glass

2601/50 capacity 50 ml

2601/100 capacity 100 ml

“Assistant” Staining stands, wooden with 3 pipette bottles 50 ml

2608 amber glass, without rubber teat

2608/1 amber glass, with rubber teat

2609 clear glass, without rubber teat

2609/1 clear glass, with rubber teat

with 6 pipette bottles 50 ml

2610 amber glass, without rubber teat

2610/1 amber glass, with rubber teat

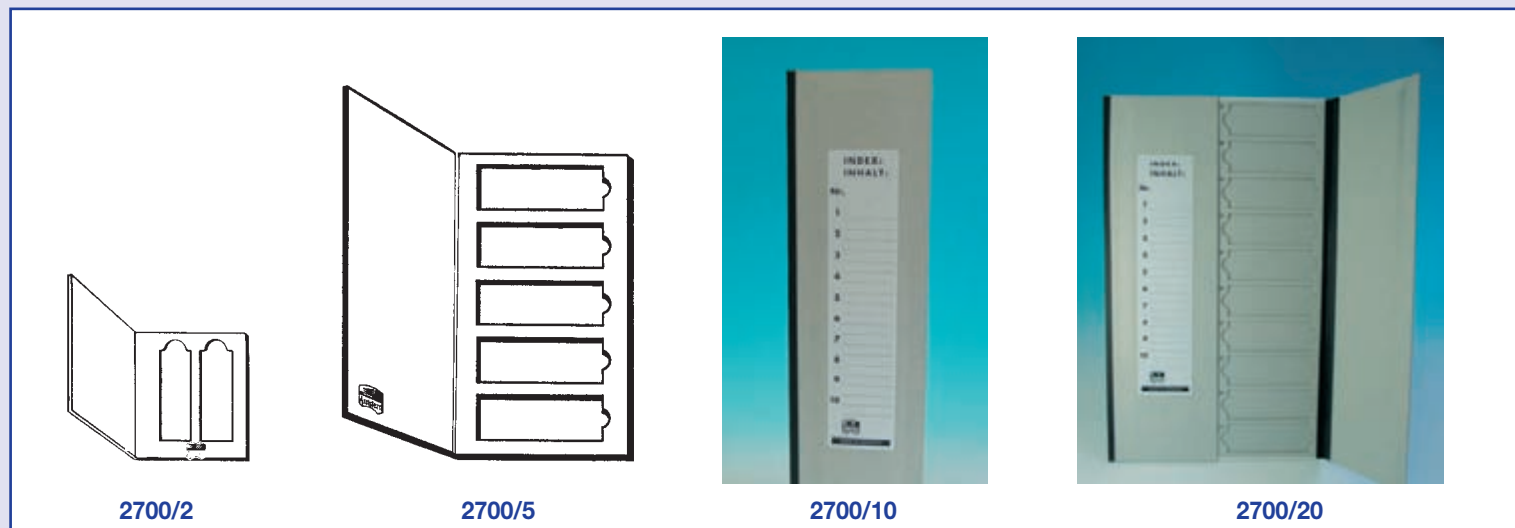
2611 clear glass, without rubber teat

2611/1 clear glass, with rubber teat

2620 “Assistant” rubber teats suitable for staining bottles

1223 “Assistant” Staining stand of Plexiglas® 3-place, without bottles, suitable for cylindrical jars
No. 1231, narrow and wide neck bottles 50 ml
No. 1301–1313, bottles 50 ml with frosted label
No. 1321, pipette bottles 50 ml. Nos. 2600–2601

Microscopic and Staining Utensils



2700/2

2700/5

2700/10

2700/20

“Assistent” micro Slide Folders and Boxes

“Assistent” Slide-folders of pasteboard for micro slides 76 x 26 mm

2698	without lid,	for 20 micro slides
2700/1	with lid,	for 1 micro slide
2700/2	with lid	for 2 micro slides
2700/3	with lid,	for 3 micro slides
2700/5	with lid,	for 5 micro slides
2700/10	with lid	for 10 micro slides
2700/20	with lid	for 20 micro slides

“Assistent” Slide boxes, black coated wooden frame, hinged lid, fastened by metal clasps, antistatic plastic rack (resistant to xylene) with numbered grooves for 76 x 26 mm slides, with index in lid

2701	for 100 micro slides
2702	for 50 micro slides
2703	for 25 micro slides



2701/2/3

Microscope slide boxes of durable polypropylene

for 100 standard slides, with lid, stackable

2704/1	white
2704/2	blue
2704/3	red

2705 **Microscope slide box** (not illustrated) of polystyrol, with cover for 50 slides 76 x 26 x 1 mm, detachable Indexcard and numbered bottom, stackable, 3 colors

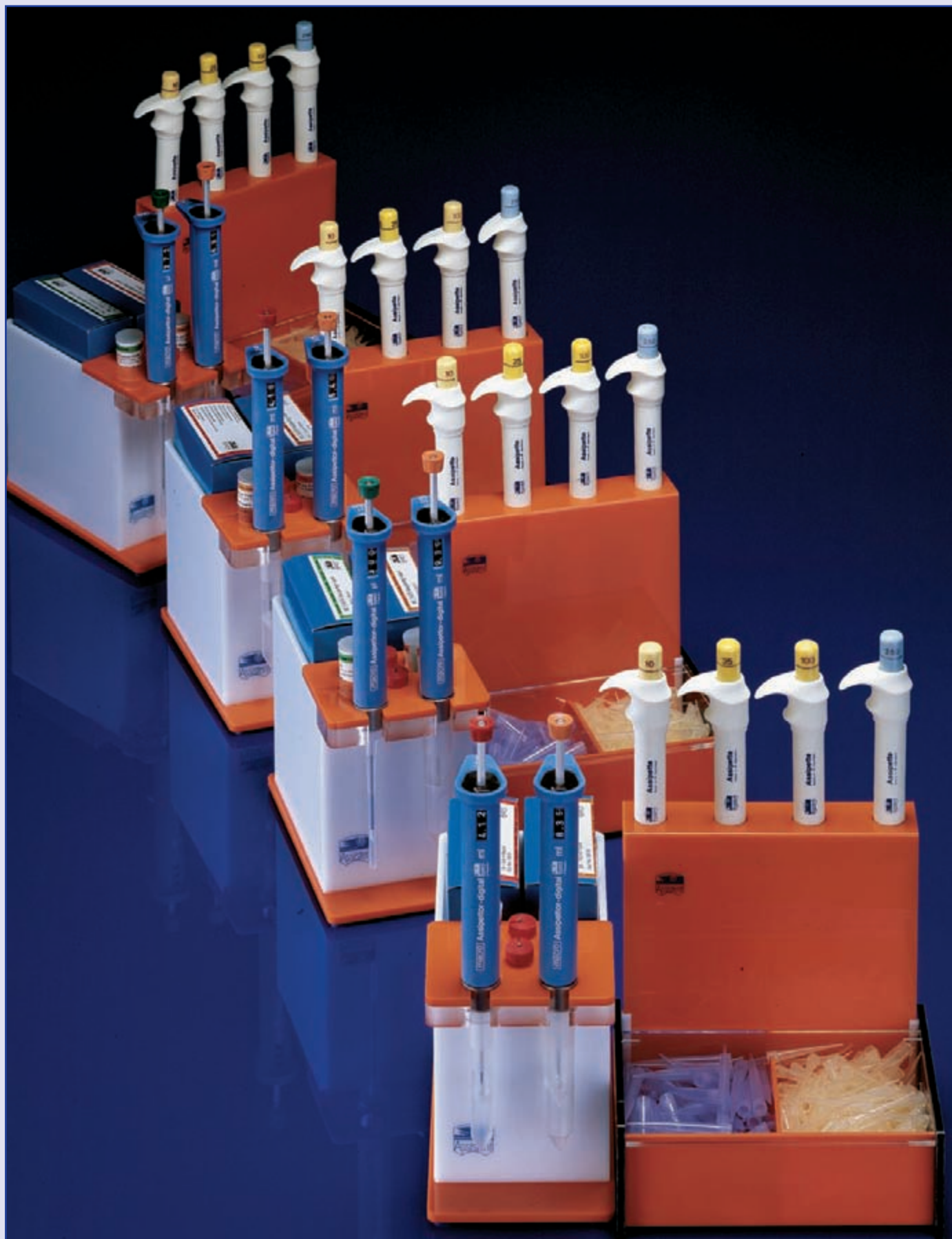
2705/1	2705/2	2705/3
white	blue	red



2704



Liquid handling



Liquid handling



“Assistent”-ASSIPETTES

“Assistent”-ASSIPETTE Stand

“Assistent” ASSIPETTES (piston stroke pipettes) conformity-certified μ

- ... are available in many standard sizes of 5 to 1 000 μ l
- ... are precise – as evidence we had tested some pipettes by the Bavarian Office for Weights and Measures.
- ... have the handy finger piston.
- ... are supplied with individual factory weight-volume certificate.
- ... are guaranteed by a double spring system for precise uptake and discharge of the sample.
- ... have a factory guarantee.
- ... are maintenance-free: Liquid cannot get into the pipette-body.
- ... are suitable for pipetting in small and large vessels, e.g. test tubes up to 160 mm height.
- ... are sucking the volume in the lower part of the shank. That is why the influence of the hand's warmth on the measuring parts can be nearly completely prevented. Plastic parts are made of polypropylene.

100/... “Assistent”-ASSIPETTES, in individual packing

standard sizes in μ l:

5	10	15	20	25	30	40	50	60
70	75	80	90	100	120	150	200	250
300	400	500	600	700	750	1000		

“Assistent” Pipette tips, disposable, conformity-certified μ , autoclavable, transparent, of non-wetting plastic suitable for ASSIPETTES as well as Brand, Eppendorf, La Fontaine, Gilson, Lab Systems piston pipettes

- 110** yellow disposable tips, for volumes up to 100 μ l, autoclavable
- 111** blue disposable tips, for volumes 101–1000 μ l, autoclavable

- 105** “Assistent” Stand of Plexiglas®, for 4 ASSIPETTES, with 2 compartments for disposable tips, with a notch to remove the tips from the pipette





Liquid handling



115

“Assistent” ASSIPETTE digital

115/... ASSIPETTE digital conformity-certified μ M
Microlitre pipette with stepless volume adjustment
and tip ejector

- convenient one-handed operation
- standard tips are used
- separate knob for tip ejector to avoid ejecting tip by accident while working
- any intermediate volume can be selected by turning the button
- clearly legible digital reading
- no maintenance
- steam sterilizable up to +121°.

Volume range μ l	2–20	5–50	10–100	25–250	100–1000	500–5000
Subdivisions μ l	0,01	0,1	0,1	1	1	20
Nr.	115/20	115/50	115/100	115/250	115/1000	115/5000

Accuracy and reproducibility

R %* $\leq \pm$	1,0	0,7	0,5	0,5	0,5	0,5
V %* \leq	0,8	0,4	0,2	0,2	0,2	0,2

* (The figures refer to maximum volume and distilled H₂O at 20 °C)

116/2000 “Assistent” Assipette fix

Volume 2000 μ l

R % $\leq \pm$ 0,5

V % \leq 0,2

“Assistent” Pipette tips, disposable, conformity-certified μ M, autoclavable, transparent, of non-wetting plastic, suitable for ASSIPETTES digital as well as Brand, Eppendorf, La Fontaine, Gilson and Lab Systems piston pipettes

- | | | |
|------------|---|----------------|
| 110 | yellow disposable tips for volumes up to 100 μ l | } autoclavable |
| 111 | blue disposable tips for volumes from 101–1000 μ l | |
| 112 | clear for volumes 500 up to 5000 μ l
(for pipettes 115/5000, 116/2000 and Brand, LabSystems/Finnpipette®) | |



105

- 105** “Assistent” Stand of Plexiglas®, for 4 ASSIPETTES, with 2 compartments for disposable tips, with a notch to remove the tips

Liquid handling



“Assistent” Liquid Handling Products



Liquid handling



122 “Assistent” Assi-Stepper

Hand-held dispenser, conformity certified, for quick and easy repetitive dispensing of liquids. Ergonomic and durable – the **Assi-Stepper** allows easy dispensing while maintaining accuracy and precision in conjunction with **PD-tips**, **giving you as many as 49 repetitive dispensings form a single aspiration.**

The **Assi-Stepper** works on the positive displacement principle, making it ideal for routine dispensing as well as for difficult tasks in the **microbiological, immunological and biochemical** field, for serial pipetting and filling of microtiter-plates. **The unit must not be steam-sterilized.**

- Available in 7 different sizes, sterile and non-sterile/endotoxinfree (individually wrapped).
- according to DIN 12650
- suitable for Assi-Stepper, Eppendorf® Multipipette® 4780/Repeater™, EDOS® 5221 and other compatible dispensing systems
- made from high-quality materials without any additives, piston: PE-HD, cylinder: PP.
- manufactured without soft lubricants or other additives
- an adapter is supplied with 25 and 50 ml tips

Working temperature range:

+ 15°C to + 40 °C (50°F to 104 °F)

Aggressive liquids attacking PP and PE-HD can not be pipetted.

Liquid handling



Setting and volume ranges

Setting	1	2	3	4	5
Number of Steps	49	24	15	11	9

PD-Tip ml	Dispensing volume μ l				
0,5	10	20	30	40	50
1,25	25	50	75	100	125
2,5	50	100	150	200	250
5,0	100	200	300	400	500
12,5	250	500	750	1000	1250
25,0	500	1000	1500	2000	2500
50,0	1000	2000	3000	4000	5000

Performance Specifications

Assi-Stepper with PD-Tip ml	Volume range μ l	Accuracy %	Coefficient of variation %
0,5	10 – 50	$\pm 0,8$	$\geq 1,4$ to $\geq 0,6$
1,25	25 – 125	$\pm 0,8$	$\geq 0,8$ to $\geq 0,3$
2,5	50 – 250	$\pm 0,7$	$\geq 0,8$ to $\geq 0,2$
5,0	100 – 500	$\pm 0,5$	$\geq 0,6$ to $\geq 0,2$
12,5	250 – 1250	$\pm 0,3$	$\geq 0,4$ to $\geq 0,2$
25,0	500 – 2500	$\pm 0,3$	$\geq 0,4$ to $\geq 0,2$
50,0	1000 – 5000	$\pm 0,3$	$\geq 0,4$ to $\geq 0,15$

122/1 Spare wall support for Assi-Stepper



122/1

PD-Tips

Capacity ml	Pack of	non-sterile Cat. No.	β -sterile, endotoxin free ¹⁾ Cat. No.
0,5	100	123/1	124/1
1,25	100	123/2	124/2
2,5	100	123/3	124/3
5,0	100	123/4	124/4
12,5	100	123/5	124/5
25,0 ²⁾	50	123/6	124/6 ³⁾
50,0 ²⁾	25	123/7	124/7

Adapter for 25 and 50 ml PD-Tips, PP, autoclavable

10	125	126 ⁴⁾
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¹⁾ individually wrapped

²⁾ incl. Adapter

³⁾ 1 box of 25 tips

⁴⁾ individually wrapped, pack of 5



123 124



Liquid handling



120

“Assistent” Multichannel-Pipette

120 variable with digital indication, conformity-certified

The ASSISTENT Multichannel-Pipette No. 120 ist designed for effortless dispensing of liquids precisely and safely. The operation principle of the pipette is air displacement, it has 8 channels, working-range 50–300 µl in steps of 5 µl with digital indication of the selected volume. High quality and technical perfection assure safe and precise working for all micro titration technics. The elastic tip cones and the light weight of the pipette provide a combination for true single handed operation.

Inaccuracy <1,5 % – <1,0 %

Imprecision <0,8 % – <0,5 %

120/1 ASSISTENT special tips 300 µl of polypropylene (PP), autoclavable at 121 °C/1ATM overpressure, available in single tray-racks of 96 pcs.

120/2 or in the 1000-pcs-box.

Liquid handling



“Assistent” ASSIPETTOR

“Assistent” ASSIPETTOR, conformity-certified μ

- is delivered ready to use
- is stepless adjustable and fixable with one hand
- apparatus, capillaries and repair-sets are marked with the well-known Colour-Code
- can pipette nearly all kinds of liquids, even aggressive liquids
- liquid gets in contact only with chemically resistant materials like glass, stainless steel and PTFE.
- highest precision and accuracy because of precision capillaries and plastic tips
- negligible danger of contamination because of direct-displacing plunger
- economic, less waste: precision glass capillaries and plastic tips can be re-used
- maintenance-free, change of capillary very easy
- capillaries and piston-seals can be sterilized by each method.

“Assistent” ASSIPETTOR digital, conformity-certified

Capillary piston pipette, digital type, variable, direct adjustable volumes, volume fixing by locking lever, complete with precision glass capillary and directions for use

Cat.-No.	Volumes-	Adjust- ment steps	Colour-Code	R %* $\leq \pm$	V %* \leq
131/10	2,5– 10 μ l	0,01 μ l	orange	1,0	0,8
131/25	5– 25 μ l	0,1 μ l	2 white	0,5	0,5
131/50	10– 50 μ l	0,1 μ l	green	0,5	0,4
131/100	20–100 μ l	0,1 μ l	blue	0,5	0,4

“Assistent” ^{macro} ASSIPETTOR digital, conformity-

certified – Piston pipette with precision plastic tip, digital type, variable, direct adjustable volumes, volume fixing by locking lever, complete with tip and directions for use

Cat.-Nr.	Volumes-	Adjust- ment steps	Colour-Code	R %* $\leq \pm$	V %* \leq
132/05	100– 500 μ l	1 μ l	green	0,5	0,2
132/1	200–1000 μ l	1 μ l	yellow	0,5	0,2
132/5	1– 5 ml	10 μ l	red	0,5	0,2
132/10	2– 10 ml	10 μ l	orange	0,5	0,2

“Assistent” ASSIPETTOR fix, conformity-certified

Capillary piston pipette, fix type, complete with precision glass capillary and directions for use

Cat.-Nr.	Volumes-	Colour-Code	R %* $\leq \pm$	V %* \leq
140/5	5 μ l	white	1,0	0,8
140/10	10 μ l	orange	1,0	0,8
140/20	20 μ l	black	0,5	0,5
140/50	50 μ l	green	0,5	0,4
140/100	100 μ l	blue	0,5	0,4
140/200	200 μ l	red	0,5	0,2

*The figures refer to maximum volume and distilled H₂O at +20 °C

135 “Assistent” Storage stand of Plexiglas® for 2 ASSIPETTORs digital



140 131 132



135



Liquid handling



140 131 132



135

Accessories and Spare Parts for ASSIPETTOR

Precision capillaries, conformity-certified

tubes of 100 pieces

- 144/5** for ASSIPETTOR fix 5 µl
- 144/10** for ASSIPETTOR fix and digital 10 µl
- 144/20** for ASSIPETTOR fix 20 µl
- 134/25** for ASSIPETTOR digital 25 µl
- 154/50** for ASSIPETTOR fix and digital 50 µl

tubes of 50 pieces

- 154/100** for ASSIPETTOR fix and digital 100 µl and ASSIPETTOR fix 200 µl

ASSIPETTOR-Seals of PTFE, conformity-certified, with mounting block

box of 3 pieces

- 155/20** for ASSIPETTOR digital 25 µl and fix 20 µl
- 155/50** for ASSIPETTOR digital and fix 50 µl
- 155/100** for ASSIPETTOR digital and fix 100 µl and ASSIPETTOR fix 200 µl

Repair-sets, conformity-certified

consisting of: 1 hollow-screw spanner, 3 PTFE-seals*, 1 mounting block for seals*, 1 plunger (with seal*), 3 O-rings for capillary-fixing, 1 mastergauge, 1 screw, 1 screwdriver (from size 20 µl up*)


- 146/5** for ASSIPETTOR fix 5 µl
- 156/10** for ASSIPETTOR digital and fix 10 µl
- 156/20** for ASSIPETTOR digital 25 µl and fix 20 µl
- 156/50** for ASSIPETTOR digital and fix 50 µl
- 156/100** for ASSIPETTOR digital and fix 100 µl
- 146/200** for ASSIPETTOR fix 200 µl





Spare plunger rods, conformity-certified

of stainless steel, from size 20 µl up with PTFE-seal

- 147/5** for ASSIPETTOR fix 5 µl
- 157/10** for ASSIPETTOR digital and fix 10 µl
- 157/20** for ASSIPETTOR digital 25 µl and fix 20 µl
- 157/50** for ASSIPETTOR digital and fix 50 µl
- 157/100** for ASSIPETTOR digital and fix 100 µl
- 147/200** for ASSIPETTOR fix 200 µl





Tips of polypropylene, conformity-certified

for  ASSIPETTOR digital No. 132, 10 precision plastic tips in dispenser-carton, fitting in stand No. 135

- 137/05** for  ASSIPETTOR digital 500 µl
- 137/1** for  ASSIPETTOR digital 1000 µl
- 137/5** for  ASSIPETTOR digital 5 ml
- 137/10** for  ASSIPETTOR digital 10 ml

Plunger seals of polyethylene, conformity-certified

for  ASSIPETTOR digital No. 132

- 138/05** for  ASSIPETTOR digital 500 µl
- 138/1** for  ASSIPETTOR digital 1000 µl
- 138/5** for  ASSIPETTOR digital 5 ml
- 138/10** for  ASSIPETTOR digital 10 ml

Liquid handling



“Assistent” Dispenser digital conformity certified μ

- Safety is a special aspect for the ASSISTENT Dispensers.
- No risk of spilling, as the Dispenser are mounted directly on the reagent bottle, adapters are supplied with the unit, more adapters available.
- No risk of contact with aggressive media when used properly. The wetted plunger is fully encased when raised.
- The unit can be sterilized up to max. 121 °C, 2 bar.
- The discharge tube made of FEP is strengthened by means of a rigid collar, therefore practically no risk of liquid being flicked off the end of the tube.
- Connecting possibility for drying tube



“Assistent” DISPENSER variable – conformity certified μ

The ASSISTENT Dispenser finds application for nearly all dispensing-works in the millilitre range. High quality materials as PTFE-coated plunger result in extreme resistance. Fast and simple handling allow easy working with the ASSISTENT Dispenser.

ASSISTENT-Dispenser digital and variable, volume stepless adjustable, in Styroporpacking, with thread connection A 32, 1 FEP inlet tube 22,5 cm long, bent FEP discharge capillary, closurecap, directions for use.

The ASSISTENT-Dispenser is used in the medical and chemical laboratory for dosing of reagents and solutions and concentrated acids (except hydrofluoric acid). In the microbiological laboratory. In schools and universities, in the foodstuff industry and for water boards and clarification plants

“ASSISTENT” DISPENSER digital

Without bottle	setting range (infinitely variable)	graduation	accuracy (R%)	Precision (V %)	with threadadapter				
173/2	0,2– 2 ml	0,01 ml	$\leq \pm 0,6$	$\leq 0,1$	A 25	A 28	A 32	A 38	S 40
173/5	0,5– 5 ml	0,02 ml	$\leq \pm 0,6$	$\leq 0,1$	A 25	A 28	A 32	A 38	S 40
173/10	1 – 10 ml	0,05 ml	$\leq \pm 0,6$	$\leq 0,1$	A 25	A 28	A 32	A 38	S 40
173/25	2,5– 25 ml	0,10 ml	$\leq \pm 0,6$	$\leq 0,1$	A 32	A 38	S 40		
173/50	5 – 50 ml	0,20 ml	$\leq \pm 0,6$	$\leq 0,1$	A 32	A 38	S 40		

„ASSISTENT“-DISPENSER variable

Without bottle	setting range (infinitely variable)	graduation	accuracy (R%)	Precision (V %)	with threadadapter				
183/05	0,05– 0,5 ml	0,01 ml	$\leq \pm 1,0$	$\leq 0,2$	A 22	A 25	A 28	A 32	
183/2	0,2 – 2 ml	0,05 ml	$\leq \pm 0,6$	$\leq 0,1$	A 25	A 28	A 32	A 38	S 40
183/5	0,5 – 5 ml	0,1 ml	$\leq \pm 0,6$	$\leq 0,1$	A 25	A 28	A 32	A 38	S 40
183/10	1 – 10 ml	0,2 ml	$\leq \pm 0,6$	$\leq 0,1$	A 25	A 28	A 32	A 38	S 40
183/25	2,5 – 25 ml	0,5 ml	$\leq \pm 0,6$	$\leq 0,1$	A 32	A 38	S 40		
183/50	5 – 50 ml	1,0 ml	$\leq \pm 0,6$	$\leq 0,1$	A 32	A 38	S 40		
183/100	10 –100 ml	1,0 ml	$\leq \pm 0,6$	$\leq 0,1$	A 32	A 38	S 40		



Liquid handling



Accessories and Spare Parts for "Assistent" Dispenser

Adapters

Outs. thread mm	for bottle thread mm	No. PP	No. ETFE
32	A 22	193/22	
32	A 25	193/25	193/925
32	A 28	193/28	193/928
32	A 30	193/30	
32	S 40	193/3240	
32	A 45	193/45	193/945
45	A 32	193/32	
45	S 40	193/4540	
45	A 38	193/38	193/938
S40	S60	193/4060	

for standard ground

Outs. thread mm	for bottle thread mm	No. PP
32	NS 19/26	194/19
32	NS 24/29	194/24
32	NS 29/32	194/29

Flexible discharge tubing

For nominal volume	No.
1, 2, 5, 10 ml	188/1
25, 50, 100 ml	188/2

Discharge tubes with integrated valve, FEP

For nominal volume	Shape	Length	No.
0,5	1	90 mm	187/11
1, 2, 5, 10 ml		90 mm	187/1
25, 50, 100 ml		120 mm	187/2
25, 50, 100 ml	1	120 mm	187/12
1 drawn to fine tip			

Filling tubes

individual adjustment of length		
For nominal volume	Length	No.
0,5, 1, 2, 5, 10 ml	70–140 mm	199/1
	125–240 mm	199/2
	170–330 mm	199/3
25, 50, 100	250–480 mm	199/4

175 SafetyPrime (tm) Ventilation valve
to upgrade the Dispenser with standard valve

"Assistent" Dispensing bottles, amber glass, square shape, with screw cap of polypropylene, resistant to steam sterilization up to +121 °C

	Capacity	Thread
190/250	250 ml	A 32 mm
190/500	500 ml	A 32 mm
190/1000	1000 ml	A 45 mm,
190/2500	2500 ml	A 45 mm (round shape)

Liquid handling



163 "Assistent"-Assimat

The economy dispenser for routine dispensing

- Economical dispensing of non-aggressive liquids
- Low-cost replaceable piston, cylinder and valves
- Easy to operate.
- Scalloped track allow for quick and exact setting of desired volume.
- Replaceable dispensing cartridge
Low-cost cartridges install in seconds to extend life of the dispenser. One spare-cartridge included free.
- The spring loaded piston refills the cylinder after dispensing.
- Valve-block (45 mm) and included adapters (32 and 40 mm) match the threads of the most common reagent bottles, further adapters available (cat. No. 193).

Easy cleaning and maintenance.

All parts can be replaced quickly without tools.

All parts, which come in contact with dispensed liquids are made of polypropylene (PP), polyethylene (PE) and ethylene-propylene-diene-rubber (EPDM). This allows for precise dispensing of many liquids commonly used in chemical, biological and medical labs, such as aqueous solutions, buffers, culture media, vitamine solutions etc., low concentrated, diluted or non oxydizing acids such as 10 % HCl or 10 % HNO₃ can be dispensed directly from the bottle, alkaline solutions such as NaOH, KOH and ammonia, polar solvents such as acetone, ethanol and acetylacetone.

Operating limits

Liquids which do not attack the material of the fluid path can be used within the following limits:

Vapor pressure: up to 500 mbar

Viscosity: Assimat 10 ml: 150 mm²/s
Assimat 25 ml: 75 mm²/s

Density: up to 13.6 g/cm³

Temperature: up to 40 °C/104 °F (other temperatures on request)

Liquids that should not be dispensed include, but are not limited to:

- concentrated or oxidizing acids
- non-polar solvents like hydrocarbons and halogenated hydrocarbons

Assistent-Assimat

Cat.-No.	Volume ml	Subdivision ml	A* ≤ ± %	CV* ≤ %
163/10	1 – 10	0,2	1,2	1,2
163/25	2,5 – 25	0,5	1,2	0,2

*The values of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (68 °F/20 °C), and with smooth operation.

A= Accuracy, CV= coefficient of variation

Items supplied:

- 1 "ASSISTENT"-Assimat No. 163
- 1 operating manual
- 2 dispensing cartridges
- 1 discharge tube
- 1 filling tube
- 2 PP adapters (GL 45/32 and GL 45/S 40) (further adapters available under cat.no. 193)

Dispensing cartridge

- piston (PE), cylinder (PP), set of 3
- 164/10** – 10 ml
- 164/25** – 25 ml

165/1 Discharge tube

Filling tube, PP,

- 165/2** Pack of 2 – 250 mm
- 165/3** – 500 mm

165/4 Valve-set

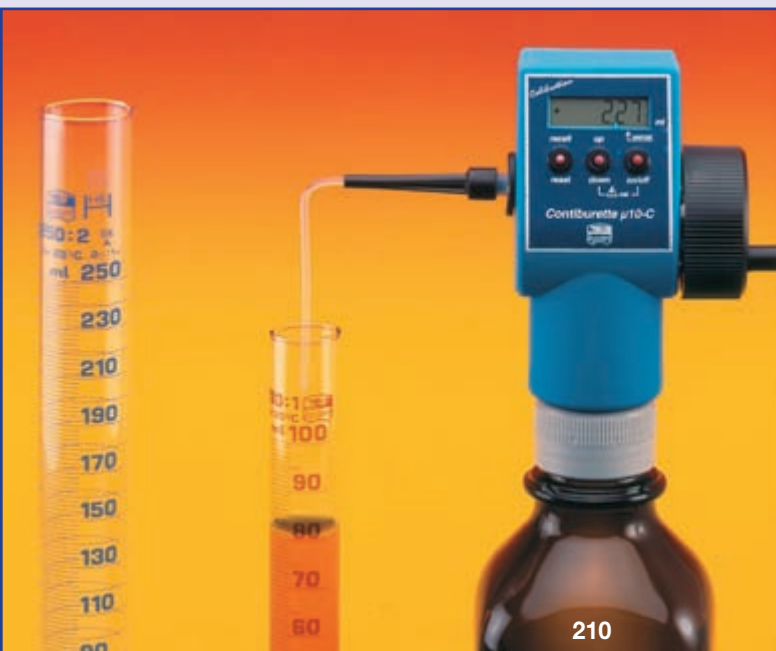
- (1 filling-, 1 dischargevalve, 2 seals)



163



Liquid handling



“Assistent” Digital burette

210 “Contiburette $\mu 10$ ”, with certificate of conformity $\mu 10$ up to 100 ml, with A 32 screw connections, bent discharge tube, filling tube as well as 2 additional screw adapters A 45 and A 40. CE

Continuous supply and measurement in the most customary volume range of 0,01 to 100 ml – using only one device.

(Beyond that, it is possible to titrate even larger volumes to max. 9999,99 ml.)

An electronic measuring system quantifies the amount of liquid supplied and indicates this to two decimal points.

Minimal setting in increments of 10 μ l. (patent pending). The burette can be calibrated.

The mechanical core of this burette consists of largely acid-resistant aluminium oxide (99,8% Al_2O_3) with very high wearing quality.

No glass cylinder – no valves

The pump components used have been designed in such a way as to keep dead space volume to a minimum. The burette vents itself automatically, thus eliminating any measuring errors due to trapped gas bubbles or air bubbles. Possibility to calibrate.

The measuring mechanism of the “Contiburette $\mu 10$ ” has a low energy consumption using two standard 1.5 V mignon batteries (mignon accumulators can also be used).

One set of batteries is sufficient for approx. 500 operating hours.

210/1 PTFE-discharge-tube alone for No. 210

212 Motorized “Assistent” Digital-burette $\mu 10$ CE

Technical data as No. 210

Delivery speed approx. 15 ml/min.

Accessories:

212/1 Remote-controller with LCD-display

212/2 – dto. –, with volume-preset

Liquid handling



chemical stability

Reagent	Dispenser 173 + 183	Assimat 163
Acetaldehyde	+	
Acetic acid (glacial), 100 %	+	
Acetic acid, 96 %	+	
Acetic anhydride		
Acetone	+	+
Acetonitrile	+	
Acetophenone		+
Acetylacetone	+	+
Acetylchloride		
Acrylic acid	+	
Acrylonitrile	+	
Adipic acid	+	+
Allyl alcohol	+	+
Aluminium chloride	+	+
Amino acids	+	+
Ammonium chloride	+	+
Ammonium fluoride	+	+
Ammonium hydroxide, 30 % (Ammonia)	+	+
Ammonium sulphate	+	+
n-Amyl acetate	+	
Amyl alcohol (Pentanol)	+	+
Amyl chloride (Chloropentane)	+	
Aniline	+	
Barium chloride	+	+
Benzaldehyde	+	
Benzene (Benzol)	+	
Benzine (Gasoline)		
Benzoyl chloride	+	
Benzyl alcohol	+	
Benzyl chloride	+	
Benzylamine	+	
Boric acid, 10 %	+	+
Bromobenzene	+	
Bromonaphthalene	+	
Butanediol	+	+
1-Butanol	+	
n-Butyl acetate	+	
Butyl methyl ether	+	
Butylamine	+	
Butyric acid	+	
Calcium carbonate	+	+
Calcium chloride	+	+
Calcium hydroxide	+	+
Calcium hypochlorite	+	+
Carbon tetrachloride		
Chloro naphthalene	+	
Chloroacetaldehyde, 45 %	+	
Chloroacetic acid	+	
Chloroacetone	+	+
Chlorobenzene	+	
Chlorobutane	+	
Chloroform		
Chlorosulfonic acid		
Chromic acid, 10 %	+	
Chromic acid, 50 %	+	
Chromosulfuric acid	+	
Copper sulfate	+	+
Cresol		
Cumene (Isopropyl benzene)	+	
Cyclohexane		
Cyclohexanone	+	
Cyclopentane		
Decane	+	
1-Decanol	+	
Dibenzylether	+	
Dichloroacetic acid		
Dichlorobenzene	+	
Dichloroethane		
Dichloroethylene		
Dichloromethane		
Diesel oil (Heating oil)		
Diethanolamine	+	
Diethyl ether	+	
Diethylamine	+	
1,2-Diethylbenzene	+	
Diethylene glycol	+	+
Dimethyl sulfoxide (DMSO)	+	
Dimethylaniline	+	
Dimethylformamide (DMF)	+	
1,4-Dioxane		+
Diphenyl ether	+	
Ethanol	+	+
Ethanolamine	+	
Ethyl acetate	+	+
Ethyl methyl ketone	+	+
Ethylbenzene		
Ethylene chloride		+
Ethylene glycol	+	+
Fluoroacetic acid		
Formaldehyde, 40 %	+	+
Formamide	+	+
Formic acid, 100 %	+	

Reagent	Dispenser 173 + 183	Assimat 163
Glycerol	+	+
Glycolic acid, 50 %	+	+
Heating oil (Diesel oil)		
Heptane		
Hexane		
Hexanoic acid	+	+
Hexanol	+	
Hydriodic acid	+	+
Hydrobromic acid		
Hydrochloric acid, 10 %	+	+
Hydrochloric acid, 20 %	+	
Hydrochloric acid, 25 – 37 %		
Hydrogen peroxide, 35 %		+
Isoamyl alcohol	+	
Isobutanol	+	+
Isooctane		
Isopropanol (2-Propanol)	+	+
Isopropyl ether	+	
Lactic acid	+	
Methanol	+	+
Methoxybenzene	+	
Methyl benzoate	+	
Methyl butyl ether	+	
Methyl formate	+	
Methyl propyl ketone	+	
Methylene chloride		
Mineral oil (Engine oil)	+	
Monochloroacetic acid	+	
Nitric acid, 30 %	+	
Nitric acid, 50 – 70 %		
Nitrobenzene	+	
Oleic acid	+	
Oxalic acid	+	+
n-Pentane		
Peracetic acid		
Perchloric acid	+	
Perchloroethylene		
Petroleum	+	
Petroleum ether		
Phenol	+	
Phenylethanol	+	
Phenylhydrazine	+	
Phosphoric acid, 85 %	+	
Phosphoric acid 85 % + Sulphuric acid 98 %, 1:1		+
Piperidine	+	+
Potassium chloride	+	+
Potassium dichromate	+	+
Potassium hydroxide	+	+
Potassium permanganate	+	+
Propionic acid	+	+
Propylene glycol	+	+
Pyridine	+	
Pyruvic acid	+	+
Salicylaldehyde	+	
Scintillation Fluid (check composition)	(+)	
Silver acetate	+	+
Silver nitrate	+	+
Sodium acetate	+	+
Sodium chloride	+	+
Sodium dichromate	+	+
Sodium fluoride	+	+
Sodium hydroxide, 30 %	+	+
Sodium hypochlorite	+	
Sulphuric acid, 98 %	+	
Tartaric acid	+	
Tetrachloroethylene		
Tetrahydrofuran (THF)		
Tetramethylammonium hydroxide	+	
Toluene		
Trichloroacetic acid		
Trichlorobenzene		
Trichloroethane		
Trichloroethylene		
Trichlorotrifluoro ethane		
Triethanolamine	+	
Triethylene glycol	+	
Trifluoro ethane		
Trifluoroacetic acid (TFA)		
Turpentine		
Urea	+	+
Xylene		
Zinc chloride, 10 %	+	+
Zinc sulfate, 10 %	+	+

The above recommendations reflect testing completed prior to publication. In addition to these chemicals, a variety of organic and inorganic saline solutions (e.g., biological buffers), biological detergents and media for cell culture can be dispensed.



Watertreatment



75

80

“Assistent” Aquademat and Accessories

75 “Assistent” Mixed-bed deionizer CE

Ion-Exchanger for purified water acc. to DAB 10 and EuAB. Wall unit for direct connection to the water supply, R $\frac{3}{4}$ ", complete with conductivity meter (range 0-50 μ S/cm)

Lightproof blue cartridge avoids growth of algae.

76 Spare cartridge

The used resins can be put in the refuse, the empty PE-cartridge is recycable at recycling stations, the exhausted cartridge can also be returned for recycling.

Demineralizing Apparatus – Ion Exchanger for demineralized water equivalent to double or triple distilled water, acc. to DAB 10 and EUAB. Exhaustion is indicated by color indicator

80 “Assistent” Aquademat 2

Consisting of three filter cartridges of which the second cartridge is a safety filter and the third cartridge is a spare. Complete with accessories and directions for use. Color indicator.



88

“Assistent” Aquademat and Accessories

87 Cartridge of exchange (without tubing) for “Assistent” Aquademat No. 80 (regenerated cartridge to replace exhausted one. – Spare cartridge No. 88 will be supplied and invoiced if exhausted cartridge has not been returned.)

88 Spare cartridge for “ASSISTENT” Aquademat No. 80

Article- No.	Description	Size mm	capacity per hour.	capacity at 1 °dH salt contents	
75	Deionizer	600x100 Ø	approx. 45l	approx. 4.250l	with conductivity meter 0–50 μ S/cm
80 88	Aquademat 2 + spare cartridge (with No. 80)	370x2x125 Ø 370x125 Ø	approx. 40l	approx. 7.500l	with color indicator

Watertreatment



- 225 "Assistent" Water distilling apparatus** **CC**
 of DURAN®/borosilicate glass 3.3 with special outlet
 for practical emptying and cleaning,
 complete with heater (without tubing etc.)

Technical data:

220 V, 2500 W, capacity approx. 3,5 l/h
 quantity of cooling water required:
 approx. 45 l/h
 temp. of cooling water at outlet: max. 60 °C
 temp. of distillate: approx. 60 °C
 total weight: approx. 4 kg
 conductivity: 0,85 µs
 quality: pH 7,06
 with instructions for use



- 4278 "Assistent" Rain gauges** of plastic, clear,
 height 25 cm
 New improved construction with handle for easy
 taking out. Distinctly legible scale, Each graduation
 mark = 1 mm = 1 l precipitation per m².
 Each in cardboard box





Measuring Instruments of Glass



Measuring Instruments of Glass



“Assistent” Burettes

General features and advantages:

- thick-walled, solid finish
- improved stability by fused graduation “ASSISTENT-PERMANENT”, acid and alkali resistant
- highly contrasting scale, clearly legible figures
- modern production methods ensure that glass surface is not attacked by etching or engraving
- straight and lateral NS-stopcocks with interchangeable safety plugs; strong, reinforced stopcocks and joints; calibrated faceted tips (NS = interchangeable standard ground)
- suitable short delivery time
- especially selected raw material ensures uniform graduation lengths
- calibrated to deliver (Ex)
- temperature of calibration: +20°C (on request also 27,5°C or similar)

Specifications of the various "Assistent" burettes:

Capacity	Subdivisions	Number of marks	Tolerance Standard-Type	Tolerance
ml	in ml		ml	ml
10	0,1 = 1/10	100	0,045	–
10	0,05 = 1/20	200	0,045	0,03
10	0,02 = 1/50	500	0,030	0,02
25	0,1 = 1/10	250	0,075	0,05
25	0,05 = 1/20	500	0,045	0,03
50	0,1 = 1/10	500	0,075	0,05
100	0,2 = 1/5	500	0,15	0,1

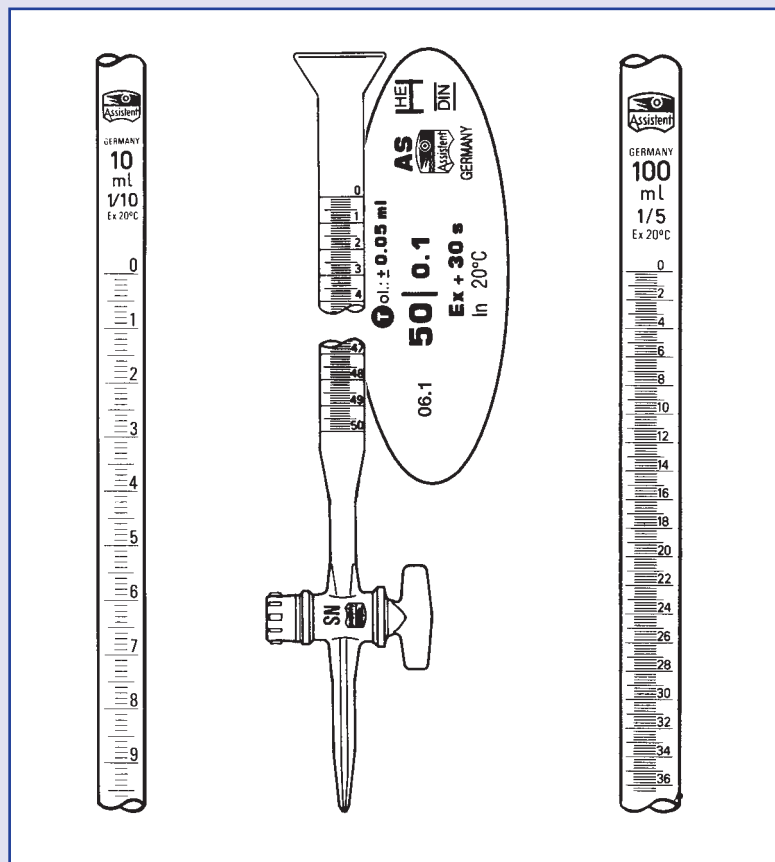
All “Assistent” burettes

- standard type
 - with conformity certificate \mathbb{M} .
- Ⓜolerance indicated on each burette are subject to precise adjustment and control procedures. Conformity certified measuring instruments conform to the German Weight and Measures Regulations and DIN Standards respectively (= class A).

DIN EN ISO 385

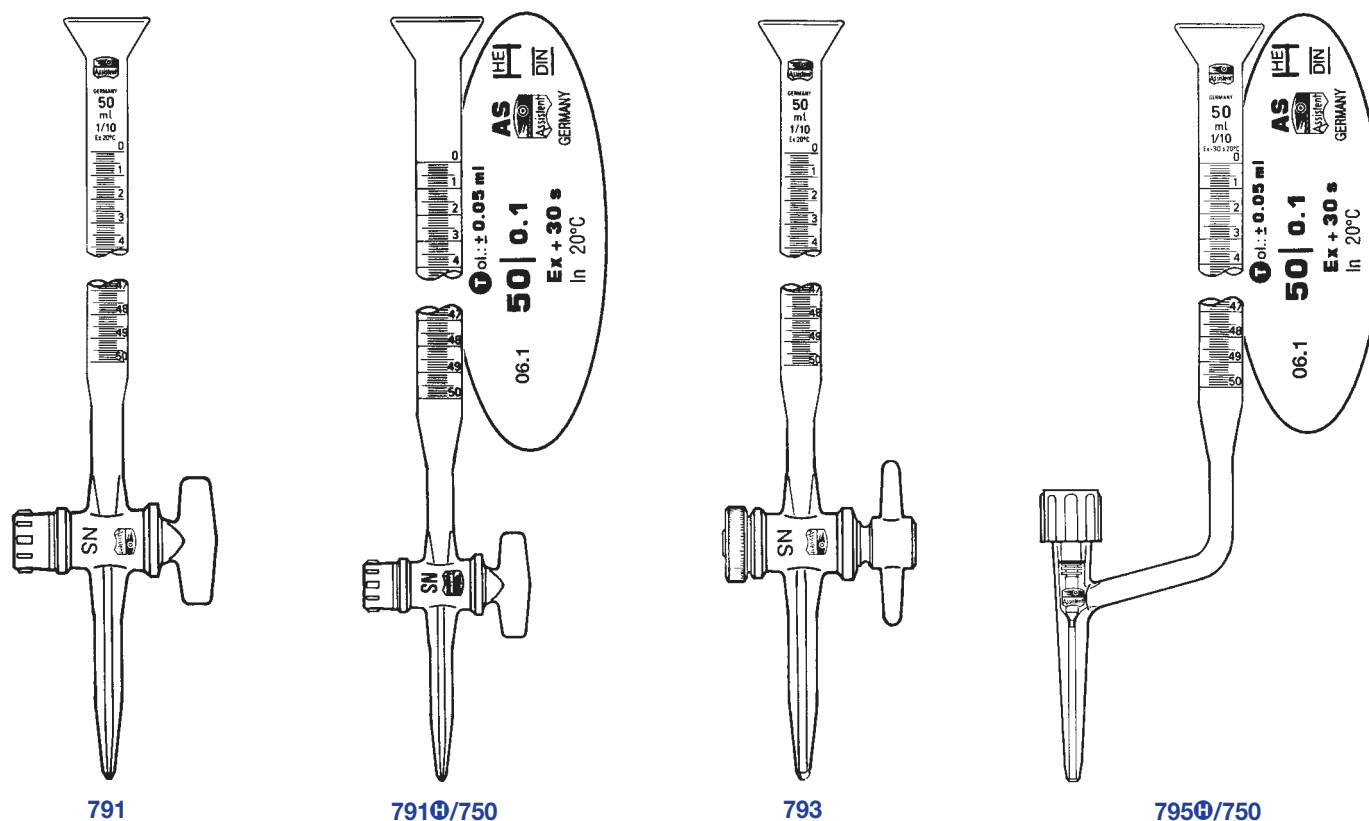
The tolerance of the standard type burettes is within 1,5 times the official tolerance (therefore more accurate than class B).

For further details please refer to the description of the item.





Measuring Instruments of Glass



“Assistent” Burettes, DURAN®/borosilicate glass 3.3

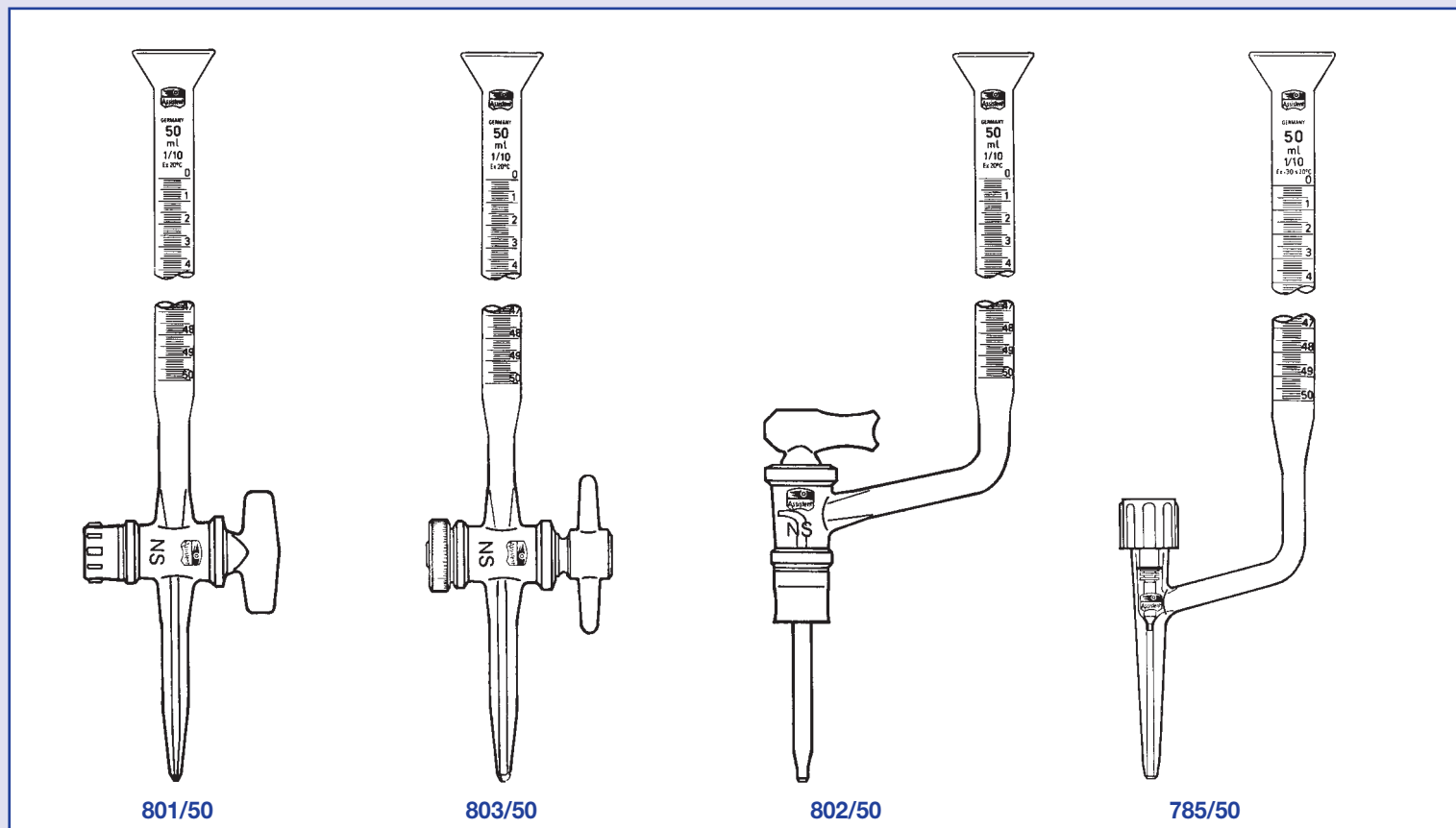
“Assistent” Burettes, DURAN®/borosilicate glass 3.3, with Schellbach stripe, fused blue graduation “ASSISTENT-PERMANENT”, with interchangeable safety plugs
Standard type, usual graduation marks, short delivery time

Capacity:	10 ml: 1/50	25 ml: 1/10	25 ml: 1/20	50 ml: 1/10
Tolerance ml:	0,030	0,075	0,045	0,075
straight NS-stopcock with glass plug	791/15	791/25	791/22	791/50
straight NS-stopcock with plug of PTFE		793/25	793/22	793/50
safety needle-valve stopcock with spindle of PTFE	795/15	795/25	795/22	795/50

conformity-certified H^1 , H^2 tolerance indicated on each burette, circular graduation at main points, waiting time 30 sec.

Capacity:	10 ml: 1/50	25 ml: 1/20	50 ml: 1/10
Tolerance ml:	0,020	0,030	0,050
delivery time sec.:	35–45	35–45	35–45
straight NS-stopcock with glass plug	791Ⓢ/715	791Ⓢ/722	791Ⓢ/750
lateral NS-stopcock with glass plug	792Ⓢ/715	792Ⓢ/722	792Ⓢ/750
straight NS-stopcock with plug of PTFE	793Ⓢ/715	793Ⓢ/722	793Ⓢ/750
safety needle-valve stopcock with spindle of PTFE	795Ⓢ/715	795Ⓢ/722	795Ⓢ/750

Measuring Instruments of Glass



“Assistent” Burettes, Standard Type

“Assistent” Burettes, AR[®]-/soda glass,

“Assistent” Burettes, AR[®]/soda glass, standard type, fused amber graduation “ASSISTENT-PERMANENT”, usual graduation marks, short delivery time, with interchangeable safety plugs

Capacity:	10 ml: 1/10	10 ml: 1/20	10 ml: 1/50	25 ml: 1/10	25 ml: 1/20	50 ml: 1/10	100 ml: 1/5
Tolerance ml:	0,045	0,045	0,030	0,075	0,045	0,075	0,15

with tubing connection

with Schellbach stripe
clear glass

780/25
800/25

780/50
800/50

straight NS-stopcock with glass plug

with Schellbach stripe
clear glass
amber glass* DURAN[®]

781/10
801/10

781/12
801/12

781/15
801/15

781/25
801/25
811/25

781/22
801/22

781/50
801/50
811/50**

781/100
801/100

straight NS-stopcock with plug of PTFE

with Schellbach stripe
clear glass

783/10
803/10

783/12
803/12

783/15
803/15

783/25
803/25

783/22
803/22

783/50
803/50

783/100
803/100

lateral NS-stopcock with glass plug

with Schellbach stripe
clear glass
amber glass* DURAN[®]

782/10
802/10

782/12
802/12

782/15
802/15

782/25
802/25
812/25

782/22
802/22

782/50
802/50
812/50**

782/100
802/100

Safety needle-valve stopcock with spindle of PTFE

with Schellbach stripe

785/15

785/25

785/22

785/50

780/9 Burette tips with rubber tubing for burettes with tubing connection

2750/60 Pinchcocks acc. to Mohr, approx. 60 mm, sterilisable

* also available with plug of PTFE or with safety needle-valve stopcock.

** Tolerance 0,100 ml.

Burettes, AR[®]/soda glass 10:1/50, 100:1/5: graduation shorter than standard.

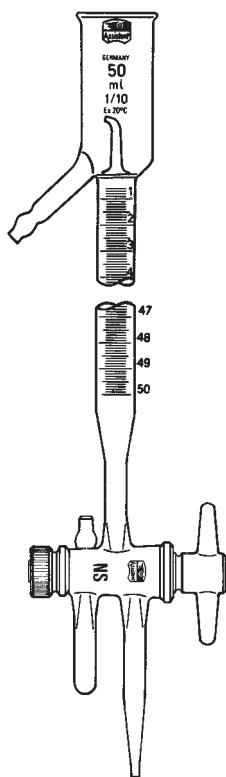


Measuring Instruments of Glass

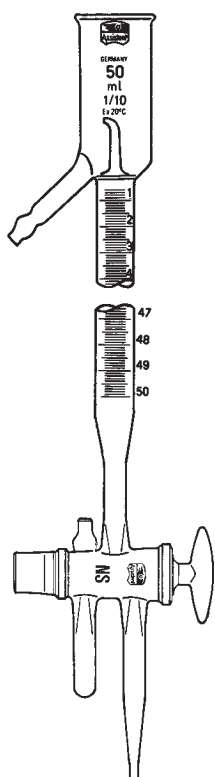
“Assistent” Dafert Burettes

“Assistent” Burettes acc. to Dafert,

AR®/soda glass, automatic zero, with Schellbach stripe, fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, with NS-two way stopcock with double oblique bore, calibrated to deliver (Ex).



842/150



842/50

Standard type

Capacity:	25 ml: 1/10	50 ml: 1/10
Tolerance ml:	0,1	0,1
with tubing connection	840/ 25	840/ 50
NS-two way stopcock with safety glass plug	842/ 25	842/ 50
NS-two way stopcock with safety plug of PTFE	842/125	842/150

Measuring Instruments of Glass



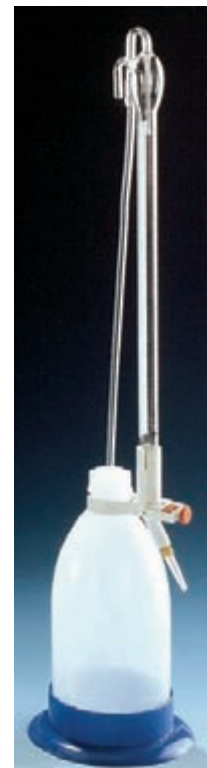
“Assistent” Schilling Burettes

820/... Automatic burettes acc to Dr. Schilling

- improved special pinchcock with titration screw for fine regulation
- with plastic filling tube
- closed burette top avoids contamination and spills
- the plastic burette holder (resistant to chemicals) allows drop delivery
- burette, AR®/soda glass, with Schellbach stripe, fused graduation “ASSISTENT-PERMANENT”, calibrated, faceted delivery tip
- including polyethylene bottle with plastic base Burette is filled by squeezing bottle and releasing, automatically zeroing burette.



820/5



820/25

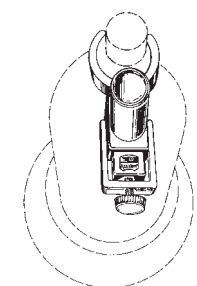
Capacity of burette	5	10	15	25	50	ml
Subdivisions	1/20	1/20	1/10	1/10	1/10	ml
Tolerance	0,050	0,050	0,100	0,100	0,100	ml
Capacity of bottle	500	500	500	1000	1000	ml

Standard type

820/...	complete	820/5	820/10	820/15	820/25	820/50
821/...	spare burettes	821/5	821/10	821/15	821/25	821/50

823/1 Spare plastic base size 1 for plastic-bottles of 500 ml

823/2 Spare plastic base size 2 for plastic-bottles of 1000 ml



823/...



Measuring Instruments of Glass



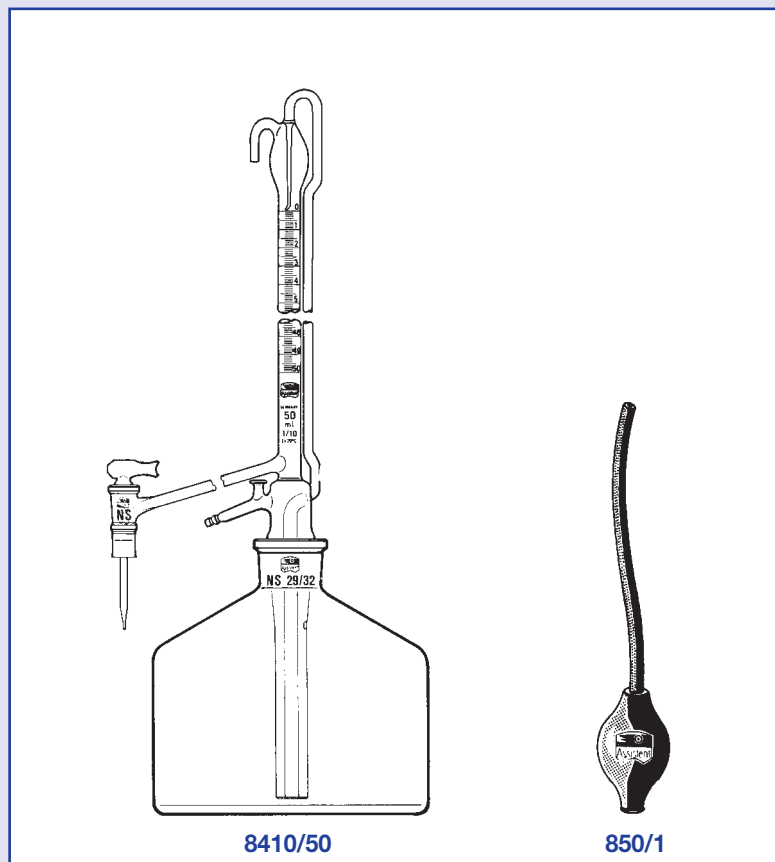
Measuring Instruments of Glass



“Assistent” Automatic Burettes acc. to Pellet

Generell features and advantages

- burettes are with automatic zero
- thick-walled, solid finish
- improved stability by fused graduation “ASSISTENT-PERMANENT”
- highly contrasting scale, clearly legible figures
- modern production methods ensure that glass surface is not attacked by etching or engraving
- NS-stopcocks (delivery and intermediate stopcocks) with interchangeable safety plugs; strong, reinforced stopcock and joints; calibrated, faceted tips (NS = interchangeable standard ground)
- suitable short delivery time
- especially selected raw material ensures uniform graduation lengths
- each packed in a cardboard box stable reservoir bottle of 2 l with standard ground NS 29/32
- calibrated to deliver (Ex)
- temperature of calibration: +20 °C (on request also 27,5 °C or similar)



Specifications of the various “Assistent” automatic burettes:

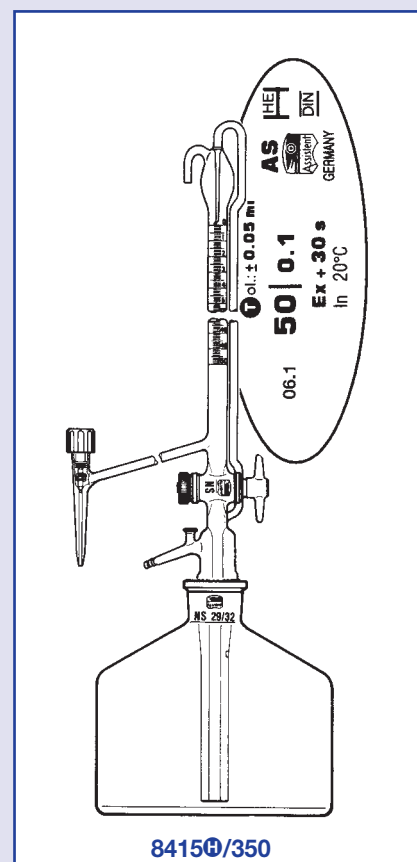
Capacity ml	Subdivision ml	Number of marks	Tolerance Standard- Type ml	Tolerances Tolerances T = KB ml
10	0,1 = 1/10	100	0,045	–
10	0,05 = 1/20	200	0,045	0,03
10	0,02 = 1 /50	500	0,030	0,02
25	0,1 = 1/10	250	0,075	0,05
25	0,05 = 1/20	500	0,045	0,03
50	0,1 = 1/10	500	0,075	0,05
100	0,2 = 1/5	500	0,15	0,1

All “Assistent” burettes:

- standard type,
- conformity certified-T=KB-
Tolerance indicated on each burette
are subject to precise adjustment and control procedures..

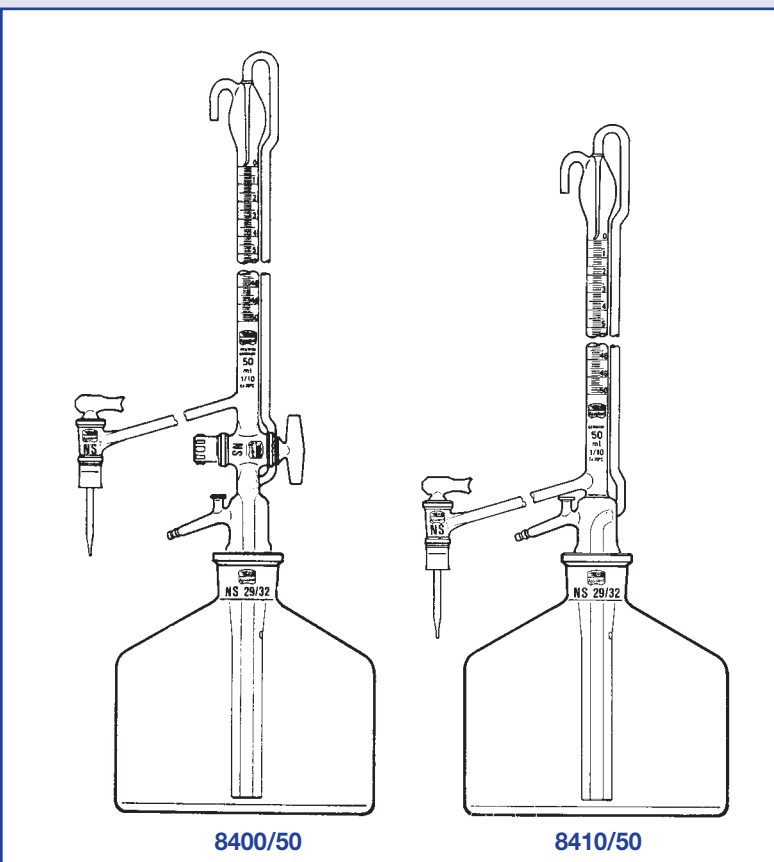
Conformity certified measuring instruments conform to the German Weight and Measures Regulations and DIN Standards respectively(= class A).

The tolerance of the standard type burettes is within 1,5 times the official tolerance (therefore more accurate than class B).





Measuring Instruments of Glass



“Assistent“ Automatic Burettes DURAN®/borosilicate glass 3.3

“Assistent” Automatic burettes, DURAN /borosilicate glass 3.3 burettes with Schellbach stripe, fused blue graduation “ASSISTENT-PERMANENT”, stopcocks with interchangeable safety plugs (NS), complete with reservoir bottle 2 l with NS 29/32 and rubber bulb no. 850/1

Standard type, usual graduation marks

Capacity:	25 ml: /10	25 ml: 1/20	50 ml: 1/10
Tolerance ml:	0,075	0,045	0,075

With intermediate stopcock and delivery stopcock

both stopcocks with NS-plug of glass	8400/25	8400/22	8400/50
both stopcocks with NS-plug of PTFE	8400/125	8400/122	8400/150
intermediate stopcock with NS-plug of PTFE	8400/325	8400/322	8400/350
delivery stopcock: safety needle-valve stopcock with spindle of PTFE			

Without intermediate stopcock with delivery stopcock

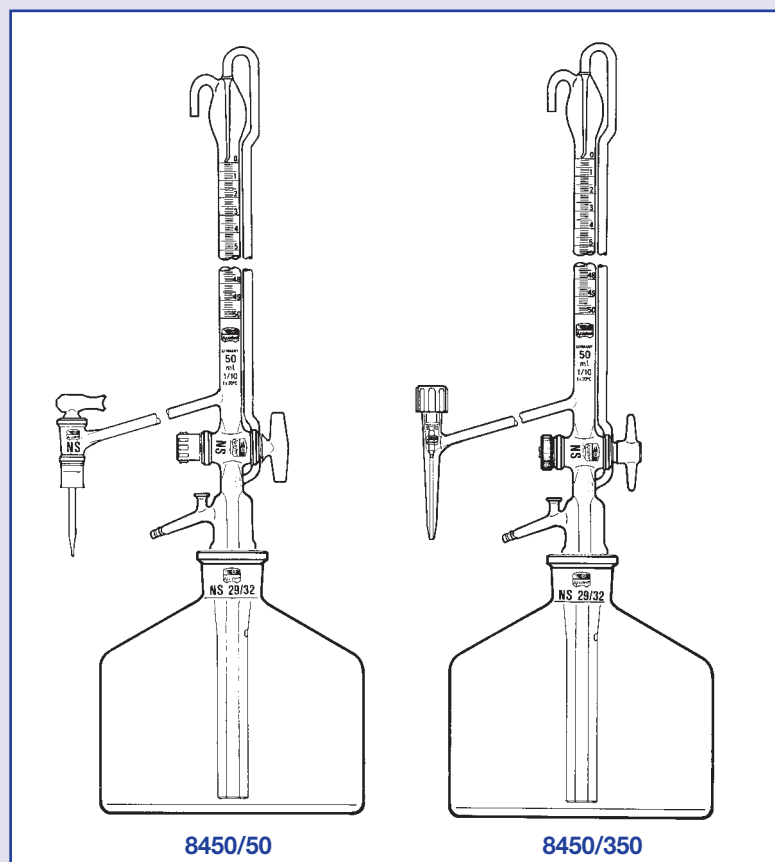
delivery stopcock with NS-plug of glass	8410/25	8410/22	8410/50
delivery stopcock with NS-plug of PTFE	8410/125	8410/122	8410/150
delivery stopcock: safety needle-valve stopcock with spindle of PTFE	8410/225	8410/222	8410/250

Measuring Instruments of Glass



“Assistent” Automatic Burettes Standard Type

“Assistent” Automatic burettes AR®-/soda glass, standard type
fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, usual graduation marks, stopcocks with interchangeable safety plugs, complete with reservoir bottle 2 l with standard ground NS 29/32 and rubber bulb no. 850/1



Capacity:	10 ml: 1/10	10 ml: 1/20	10 ml: 1/50	25 ml: 1/10	25 ml: 1/20	50 ml: 1/10	100 ml: 1/5
Tolerance ml:	0,045	0,045	0,030	0,075	0,045	0,075	0,15

with intermediate stopcock and delivery stopcock

both stopcocks with NS-plug of glass

with Schellbach stripe	8450/10	8450/12	8450/15	8450/25	8450/22	8450/50	8450/100
amber glass* DURAN®			8452/15**	8452/25	8452/50***		

both stopcocks with NS-plug of PTFE

with Schellbach stripe	8450/110	8450/112	8450/115	8450/125	8450/122	8450/150	8450/1100
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intermediate stopcock with NS-plug of PTFE, delivery stopcock: safety needle-valve stopcock with spindle of PTFE

with Schellbach stripe	8450/310	8450/312	8450/315	8450/325	8450/322	8450/350	8450/3100
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* also available with plug of PTFE or safety needle-valve stopcock.

** amber glass burette 10 ml:1/50, tolerance 0,05 ml

*** amber glass burette 50 ml:1/10, tolerance 0,1 ml

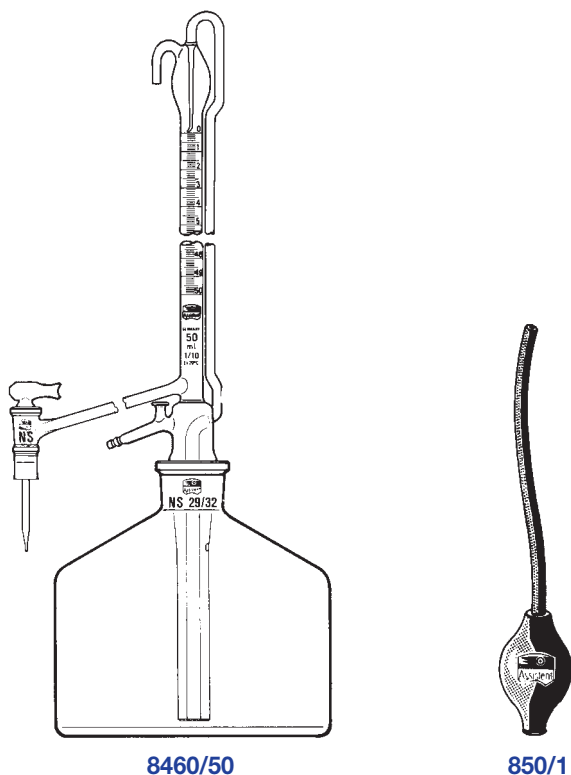
Burettes, AR®/soda glass 10:1/50, 100:1/5: graduation shorter than standard.



Measuring Instruments of Glass

“Assistent” Automatic Burettes Standard Type

“Assistent” Automatic burettes AR[®]-/soda glass, standard type
fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, usual graduation marks, stopcocks with interchangeable safety plugs, complete with reservoir bottle 2 l with standard ground NS 29/32 and rubber bulb no. 850/1



Capacity:	10 ml: 1/10	10 ml: 1/20	10 ml: 1/50	25 ml: 1/10	25 ml: 1/20	50 ml: 1/10	100 ml: 1/5
Tolerance ml:	0,045	0,045	0,030	0,075	0,045	0,075	0,15

without intermediate stopcock, with delivery stopcock

delivery stopcock with NS-plug of glass,

with Schellbach stripe amber glass* DURAN [®]	8460/10	8460/12	8460/15 8462/15**	8460/25 8462/25	8460/22 8462/50***	8460/50	8460/100
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delivery stopcock with NS-plug of PTFE,

with Schellbach stripe	8460/110	8460/112	8460/115	8460/125	8460/122	8460/150	8460/1100
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delivery stopcock: safety needle-valve stopcock with spindle of PTFE

with Schellbach stripe	8460/210	8460/212	8460/215	8460/225	8460/222	8460/250	8460/2100
------------------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------

* also available with plug of PTFE or safety needle-valve stopcock.

** amber glass burette 10 ml:1/50, tolerance 0,05 ml

*** amber glass burette 50 ml:1/10, tolerance 0,1 ml

Burettes, AR[®]/soda glass 10:1/50, 100:1/5: graduation shorter than standard.

850/1

Rubber bulbs, with valve and tubing

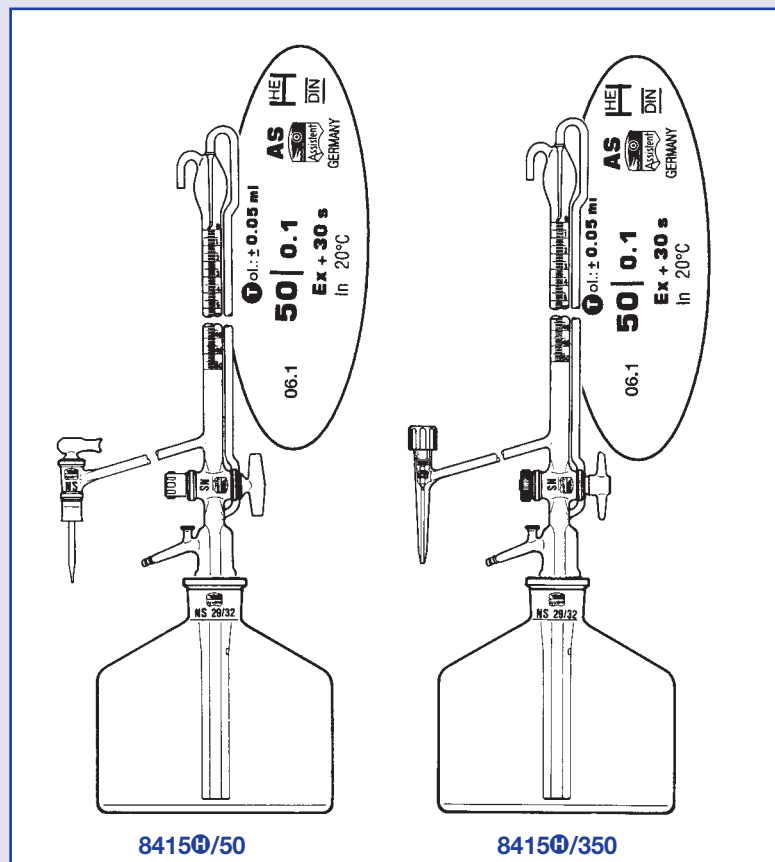
Measuring Instruments of Glass



“Assistent” Automatic Burettes

Conformity Certified- μ , (class A, fast delivery)

“Assistent” Automatic burettes, DURAN®/borosilicateglass 3.3, conformity-certified μ , tolerance indicated on each burette, with Schellbach stripe, circular graduation at main points, fused blue graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, stopcocks with interchangeable safety plugs, waiting time: 30 sec., complete with reservoir bottle 2 l with standard ground NS 29/32 and rubber bulb no. 850/1, available with individual test- or lot-control certificate on request at surcharge.



Capacity:	10 ml: 1/50	25 ml: 1/20	50 ml: 1/10
Tolerance ml:	0,020	0,030	0,050
delivery times, sec.:	35-45	35-45	35-45

with intermediate stopcock and delivery stopcock

both stopcocks with NS-plug of glass	84150/15	84150/22	84150/50
intermediate stopcock with NS-plug,	84150/315	84150/322	84150/350
of PTFE, delivery stopcock: safety needle-valve stopcock with spindle of PTFE			

without intermediate stopcock, with delivery stopcock

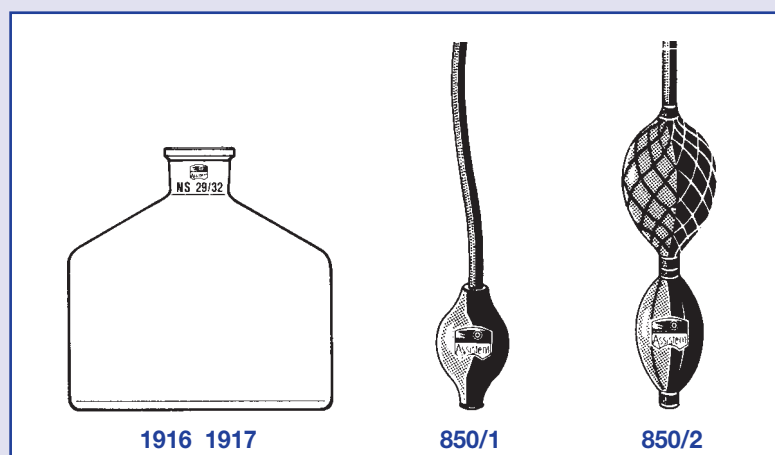
delivery stopcock: safety needle-valve stopcock with spindle of PTFE	84160/215	84160/222	84160/250
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Spare parts and accessories:

Reservoir bottles for automatic burettes, low form, with standard ground NS 29

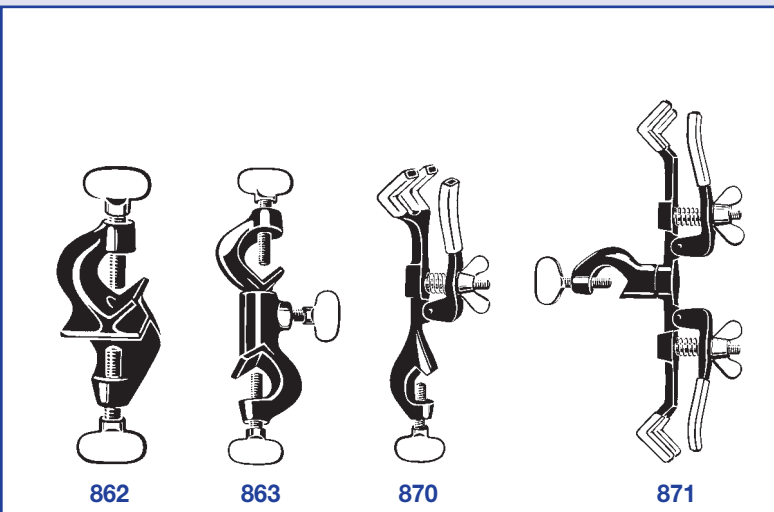
1916/1000	clear glass 1000 ml
1917/1000	amber glass 1000 ml
1916/2000	clear glass 2000 ml
1917/2000	amber glass 2000 ml

850/1	Rubber bulbs, with valve and tubing
850/2	Rubber bulbs, with air reservoir, net and tubing



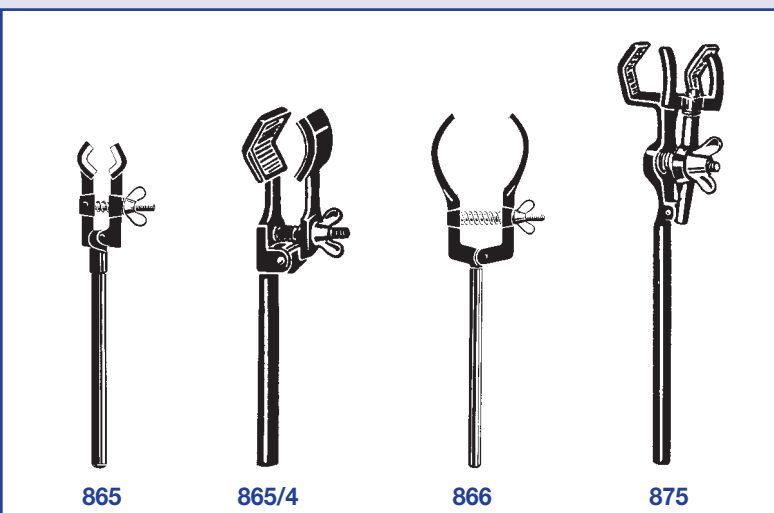


Measuring Instruments of Glass

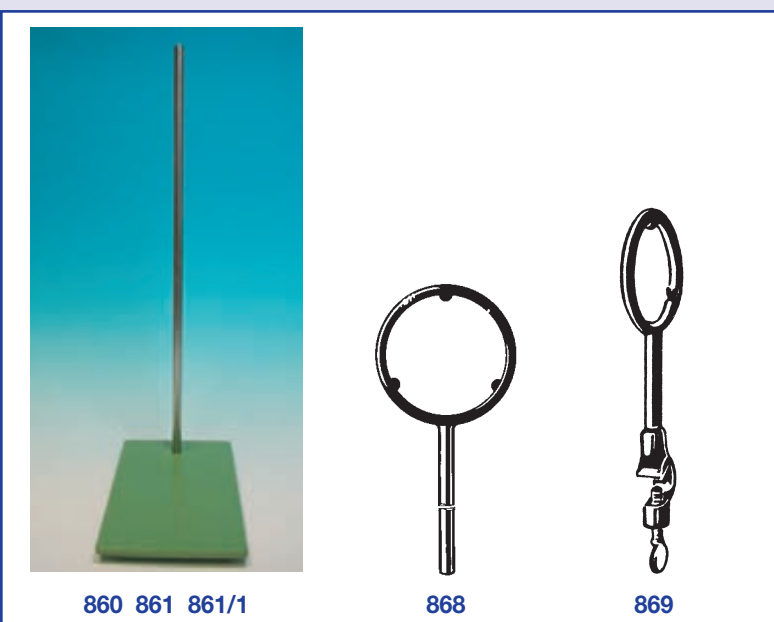


Accessories

- 862** Bossheads, double, for rods up to 16 mm diam.
- 863** Bossheads, double, revolving for rods up to 20 mm diam.
- 870** Burette clamps, with bosshead for rods up to 13 mm diam., for one burette
- 871** Burette clamps, for two burettes



- 865** Clamps without bosshead, round jaws, opening up to approx. 25 mm
- 865/4** opening up to approx. 40 mm
- 866** opening up to approx. 60 mm
- 875** Condenser clamps, adjustable at any angle, opening up to approx. 80 mm



Burette stands of metal

- 860** base approx. 175 x 100 mm, rod approx. 450 x 10 mm
- 861** base approx. 210 x 130 mm, rod approx. 750 x 12 mm
- 861/1** base approx. 210 x 130 mm, rod approx. 1000 x 12 mm

Rings without bosshead

- 868/7** approx. 70 mm outs diam.
- 868/10** approx. 100 mm outs diam.
- 868/13** approx. 130 mm outs diam.

Rings with bosshead for rods up to 16 mm diam.

- 869/7** approx. 70 mm outs diam.
- 869/10** approx. 100 mm outs diam.
- 869/13** approx. 130 mm outs diam.

Measuring Instruments of Glass



Volumetric measuring instruments with certificate

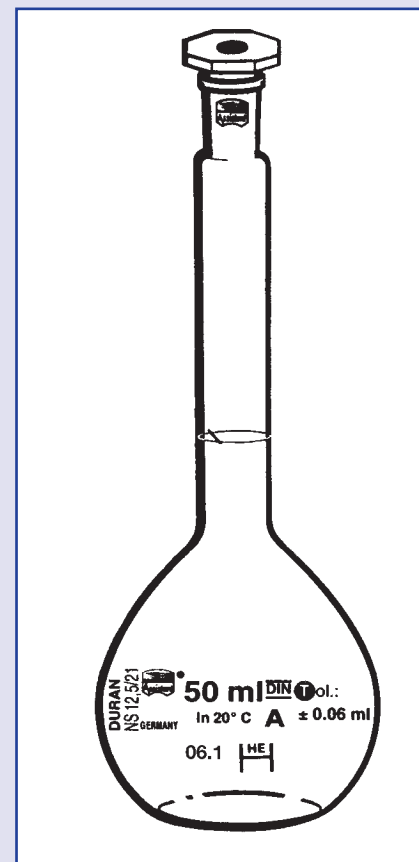
The monitoring of measuring instruments to GLP and ISO 9000 requires the documentation of accuracy and error of limits. For these reasons we print a batch- and serial number for single-instrument-checks on each instrument.

Further a check-certificate can be provided for the batch, instruments with serial numbers are generally delivered with check-certificate.

Batch-Number:

The batch-markings are printed on the volumetric glass-instrument

Example:		
production-year	quarter	number of batches per quarter (after 2 nd batch)
06	1	2
	1 = 01.01. – 31.03. 2 = 01.04. – 30.06. 3 = 01.07. – 30.09. 4 = 01.10. – 31.12.	this figure indicates the number of batches, if the article was produced more than once per quarter, i.e. the lowest number is 2.



Single-instrument-check certificate:

An additional individual code-number is added to the batch-number.

Example:	
2 nd production-batch of a glass volume instrument with certificate no. 24 in the 3 rd quarter of the year 2006	
06.3 2 0024	
	certificate no. 2 nd batch production-year

The Certificates

include all necessary data for the instrument-monitoring:

- Batch-control-certificate:**
Informations about type of instrument, mean-value, standard-deviation, measuring-conditions.
- Single-check control-certificate:**
Informations about type of instrument, measured volume and tolerance, measuring conditions.

All test-results mentioned in the certificates are documented and archived at our company for at least five years. If the batch- or serial number is known, the individual test results can be accessed and traced at any time during this period.



Measuring Instruments of Glass



**Glaswarenfabrik
Karl Hecht KG
97647 Sondheim/Rhön
Germany**

Präzisions-
Glasinstrumente
und -geräte für
Arzt und Labor

**DIN EN ISO 9001
CERTIFIED**

Qualitätszertifikat • Certificate of Performance Certificat de qualité • Certificado de calidad • Certificato di qualità

Lot.-Nr./No. du lot/ Núm. de lote/Lotto no.:	06.1	Artikelnummer/Articleno./ Réf./Ref./Articolo no.:	2182H/100
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Meßzylinder/Measuring cylinders

Nennvolumen/Nominal Volume/ Volume nominal/Volumen nominal/ Volume nominale:	100 ml	Mittelwert/Mean value/ Valeur moyenne/Valor medio/ Valore medio:	100,115 ml
Toleranz/Tolerance/ Tolerancia/Tolleranza:	0,500 ml	Standardabweichung Standard deviation/Ecart type/ Desciación standard/Differenza media	0,16287

- Der angegebene Wert ist korrigiert, d. h. die ursprünglichen Meßbedingungen sind umgerechnet auf eine Bezugstemperatur von 20 °C am Gerät, Umgebung und Prüfflüssigkeit. Das verwendete Prüfmittel ist rückführbar auf nationale Normale (Die Prüfung erfolgt gemäß ISO 4787).
- The indicated value is adjusted acc. to the original measuring conditions referring to temperature of 20 °C at the instrument, the liquid (distilled water) and the ambiance. The standard used for the measurements can be traced to national standards. The test was effected acc. to ISO 4787).
- La valeur indiquée est corrigée, c'est-à-dire que les conditions de mesure d'origine sont ramenées à une température de référence de 20 °C de l'appareil, de l'environnement et du fluide d'essai. Les standards normalisés nationaux peuvent servir de références pour l'appareil de mesure utilisé (les essais se sont déroulés selon ISO 4787).
- El valor indicado está corregido, es decir, las condiciones de comprobación originales se han convertido a la temperatura de referencia de 20 °C del aparato, del ambiente y el líquido de comprobación. Los estándares nacionales pueden servir de referencia para el aparato de medición empleado (la prueba se lleva a cabo de acuerdo a ISO 4787).
- Il valore indicato è corretto, vale a dire che le originali condizioni di misurazione sono state convertite con riferimento ad una temperatura die 20 °dell'apparecchio, dell'ambiente e del liquido di misurazione. Gli standard possono essere di riferimento per l'apparecchio di misura utilizzato. (il test avvenne in accordo alla normativa ISO 4787).

Prüfer/Tester/Vérificateur/ Comprobador/Verificatore:	Isolde Störm	Prüfdatum/Testdate/Date d'essai/ fecha del ensay/Data de test:	07.02.2006
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Glaswarenfabrik
Karl HECHT



**Glaswarenfabrik
Karl Hecht KG
97647 Sondheim/Rhön
Germany**

Präzisions-
Glasinstrumente
und -geräte für
Arzt und Labor

**DIN EN ISO 9001
CERTIFIED**

Qualitätszertifikat • Certificate of Performance Certificat de qualité • Certificado de calidad • Certificato di qualità

Seriennummer/Serial No/No. de serie/ No. di seria/No en serie:	06.010429	Artikelnummer/Articleno./ Réf./Ref./Articolo no.:	2556H/25
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Vollpipetten/Volumetric pipettes

Nennvolumen/Nominal Volume/ Volume nominal/Volumen nominal/ Volume nominale:	25 ml	Gemessenes Volumen/Measured/ volume/volume mesure/volume misurato/volumen medido:	25,007 ml
Toleranz/Tolerance/ Tolerancia/Tolleranza:	0,030 ml	Ablaufzeit/Run-out time/temps d'écoulement/tempo di efflusso/ tiempo de salida:	0,16287

- Der angegebene Wert ist korrigiert, d. h. die ursprünglichen Meßbedingungen sind umgerechnet auf eine Bezugstemperatur von 20 °C am Gerät, Umgebung und Prüfflüssigkeit. Das verwendete Prüfmittel ist rückführbar auf nationale Normale (Die Prüfung erfolgt gemäß ISO 4787).
- The indicated value is adjusted acc. to the original measuring conditions referring to temperature of 20 °C at the instrument, the liquid (distilled water) and the ambiance. The standard used for the measurements can be traced to national standards. The test was effected acc. to ISO 4787).
- La valeur indiquée est corrigée, c'est-à-dire que les conditions de mesure d'origine sont ramenées à une température de référence de 20 °C de l'appareil, de l'environnement et du fluide d'essai. Les standards normalisés nationaux peuvent servir de références pour l'appareil de mesure utilisé (les essais se sont déroulés selon ISO 4787).
- El valor indicado está corregido, es decir, las condiciones de comprobación originales se han convertido a la temperatura de referencia de 20 °C del aparato, del ambiente y el líquido de comprobación. Los estándares nacionales pueden servir de referencia para el aparato de medición empleado (la prueba se lleva a cabo de acuerdo a ISO 4787).
- Il valore indicato è corretto, vale a dire che le originali condizioni di misurazione sono state convertite con riferimento ad una temperatura die 20 °dell'apparecchio, dell'ambiente e del liquido di misurazione. Gli standard possono essere di riferimento per l'apparecchio di misura utilizzato. (il test avvenne in accordo alla normativa ISO 4787).

Prüfer/Tester/Vérificateur/ Comprobador/Verificatore:	Christine Zippel	Prüfdatum/Testdate/Date d'essai/ fecha del ensay/Data de test:	10.01.2006
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Glaswarenfabrik
Karl HECHT

Measuring Instruments of Glass



“Assistent” Volumetric Flasks

“Assistent” Volumetric flasks acc. to DIN EN ISO 1042

General features and advantages:

- thick-walled, solid finish
- improved stability by fused graduation
“ASSISTENT-PERMANENT”
- clearly legible figures and marks
- modern production methods ensure that glass surface is not attacked by etching or engraving
- reinforced ground neck with fused identification of standard ground size
- “Assistent” NS-stoppers of high-density polyethylene, resistant to temperatures up to +120 °C (NS = interchangeable standard ground)
- intermediate sizes are also available
- calibrated to contain (in), with one mark
- temperature of calibration: +20°C (on request also 27,5 °C or similar)

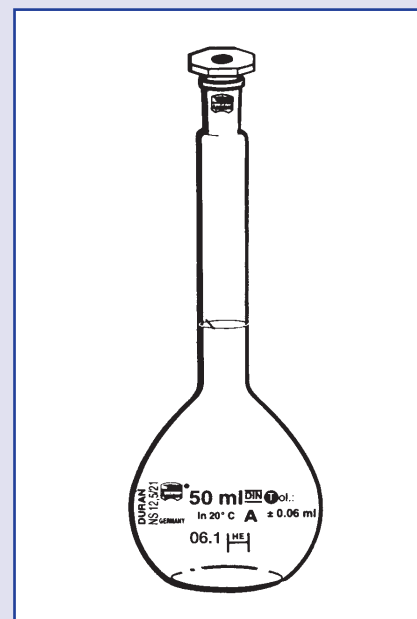
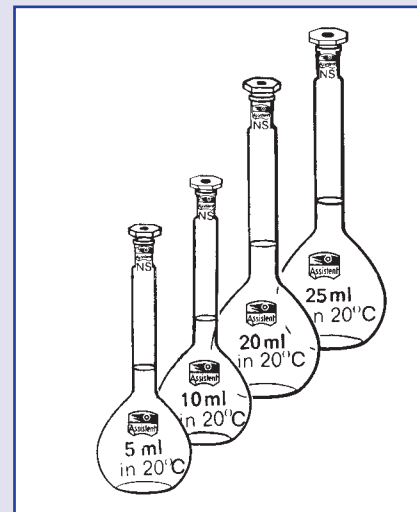
All “Assistent” volumetric flasks:

- standard type,
- conformity-certified $\overline{\text{M}}$
 - tolerance indicated on each flask

are subject to precise adjustment and control procedures.

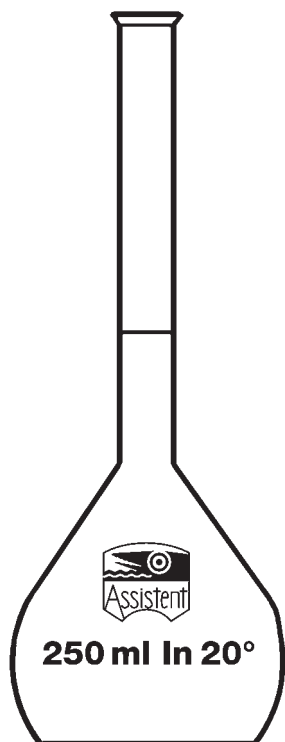
Conformity certified measuring instruments conform to the German Weights and Measures Regulations and DIN Standards respectively (= class A).

The tolerance of the volumetric flasks, standard type is within 1,5 times class AS (therefore more accurate than class B).





Measuring Instruments of Glass



2089

“Assistent” Volumetric Flasks DIN EN ISO 1042 Standard type

“Assistent” Volumetric flasks, standard type

DURAN®/borosilicate glass 3.3

fused blue graduation “ASSISTENT-PERMANENT”

2089... without stopper, with rim

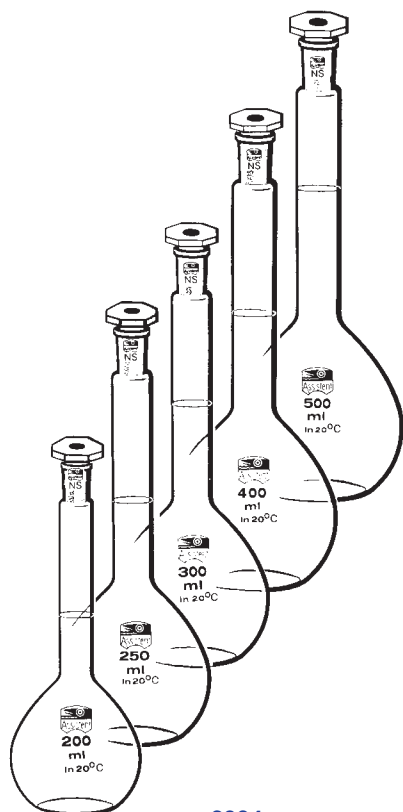
2094/... with standard ground and interchangeable NS stopper of polyethylene

Capacity ml	Tolerance ml	without stopper	with stopper	NS
5	0,038	2089/5	2094/5	7
5	0,06		2094/510W	10 W
10	0,038	2089/10	2094/10	7
10	0,06		2094/1010W	10 W
20	0,06	2089/20	2094/20	10
20	0,09		2094/2012	12 W
25	0,06	2089/25	2094/25	10
25	0,09		2094/2512W	12 W
30**	0,09		2094/30	12
50	0,15	2089/50	2094/50	12
50	0,12		2094/5014W	14 W
100	0,15	2089/100	2094/100	12
100	0,15		2094/10014W	14 W
150**	0,15		2094/150	14
200	0,23	2089/200	2094/200	14
250	0,23	2089/250	2094/250	14
300**	0,23		2094/300	14
400**	0,38		2094/400	19
500	0,38	2089/500	2094/500	19
1000	0,6	2089/1000	2094/1000	24
1000	0,9		2094/10009W	29 W
2000	0,9		2094/2000	29
3000*	1,2	2089/3000	2094/3000	29
5000	1,8	2089/5000	2094/5000	34
10000**	3,0	2089/9999	2094/9999	45

W = wide neck

* = borosilicate glass 6.5

** = in addition to DIN



2094

Measuring Instruments of Glass



“Assistent” Volumetric Flasks DIN EN ISO 1042 conformity certified M^{E}

“Assistent” Volumetric flasks, conformity certified M^{E}

Ⓜolerance indicated on each flask,

DURAN®/borosilicate glass 3.3, fused blue graduation “ASSISTENT-PERMANENT” available with individual test- or lot-control certificate on request at surcharge

2091Ⓜ/... without stopper

2096Ⓜ/... with standard ground and interchangeable NS-stopper of polyethylene

Capacity ml	Ⓜolerance M^{E} ml	without stopper	with stopper	NS	DIN
5	0,025	2091 Ⓜ/5	2096 Ⓜ/5	7/16	DIN
5	0,04		2096 Ⓜ/510W	10/19	*
10	0,025	2091 Ⓜ/10	2096 Ⓜ/10	7/16	DIN
10	0,04		2096 Ⓜ/1010W	10/19	*
20	0,04	2091 Ⓜ/20	2096 Ⓜ/20	10/19	*
20	0,06		2096 Ⓜ/2012W	12/21	DIN
25	0,04	2091 Ⓜ/25	2096 Ⓜ/25	10/19	DIN
25	0,06		2096 Ⓜ/2512W	12/21	*
50	0,06	2091 Ⓜ/50	2096 Ⓜ/50	12/21	DIN
50	0,10		2096 Ⓜ/5014W	14/23	*
100	0,10	2091 Ⓜ/100	2096 Ⓜ/100	12/21	DIN
100	0,10		2096 Ⓜ/10014	14/23	DIN
200	0,15	2091 Ⓜ/200	2096 Ⓜ/200	14/23	DIN
250	0,15	2091 Ⓜ/250	2096 Ⓜ/250	14/23	DIN
500	0,25	2091 Ⓜ/500	2096 Ⓜ/500	19/26	DIN
1000	0,4	2091 Ⓜ/1000	2096 Ⓜ/1000	24/29	DIN
1000	0,6		2096 Ⓜ/10009W	29/32	*
2000	0,6		2096 Ⓜ/2000	29/32	DIN
5000	1,2	2091 Ⓜ/5000	2096 Ⓜ/5000	34/35	*
10000	2,0	2091 Ⓜ/9999	2096 Ⓜ/9999	45/40	*

* in addition to DIN

W = wide neck

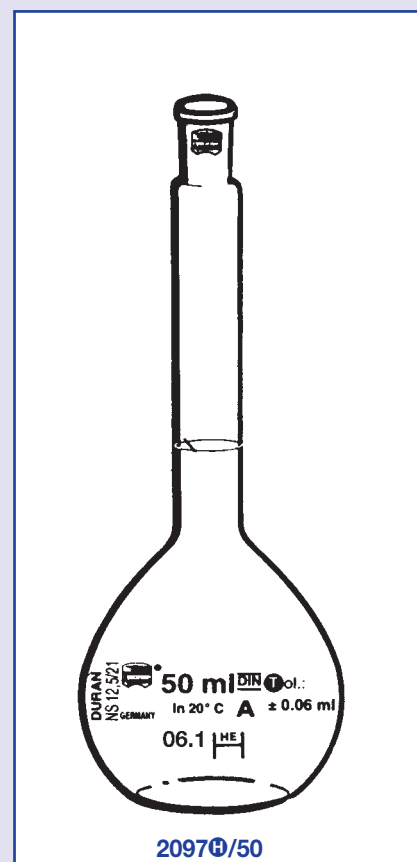
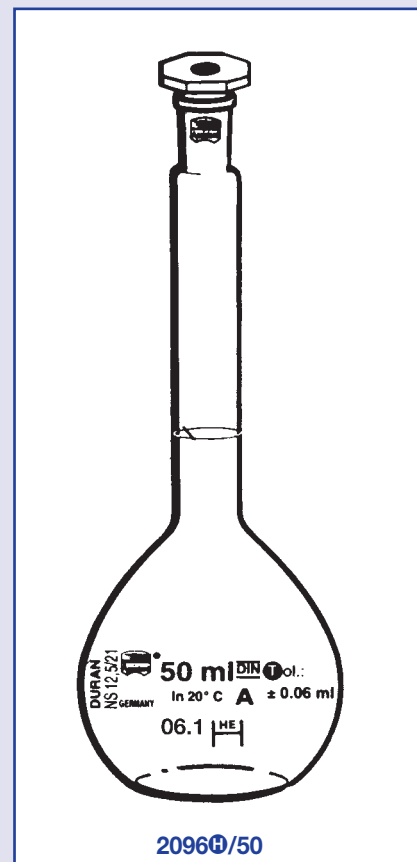
“Assistent” Volumetric flasks conformity certified M^{E}

Ⓜolerance indicated on each flask,

DURAN®/borosilicate glass 3.3, fused blue graduation “ASSISTENT-PERMANENT” with standard ground, without stopper available with individual test- or lot-control certificate on request at surcharge.

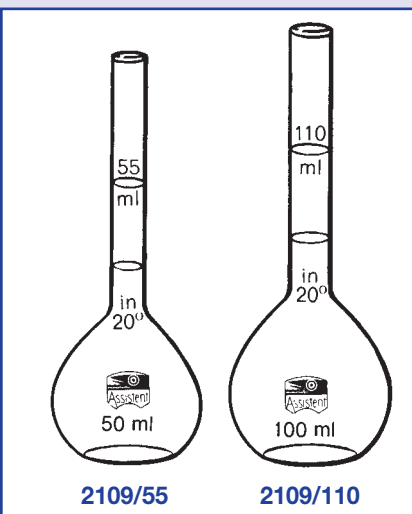
	size ml	NS		size ml	NS
2097 Ⓜ/5	5	7	2097 Ⓜ/100	100	12
2097 Ⓜ/510W	5	10	2097 Ⓜ/10014W	100	14
2097 Ⓜ/10	10	7	2097 Ⓜ/200	200	14
2097 Ⓜ/1010W	10	10	2097 Ⓜ/250	250	14
2097 Ⓜ/20	20	10	2097 Ⓜ/500	500	19
2097 Ⓜ/25	25	10	2097 Ⓜ/1000	1000	24
2097 Ⓜ/2512W	25	12	2097 Ⓜ/10009W	1000	29
2097 Ⓜ/50	50	12	2097 Ⓜ/2000	2000	29
2097 Ⓜ/5014W	50	14	2097 Ⓜ/5000	5000	34
			2097 Ⓜ/9999*	10000	45

* in addition to DIN





Measuring Instruments of Glass



2109/55

2109/110

“Assistent” Volumetric Flasks

“Assistent” Sugar flasks

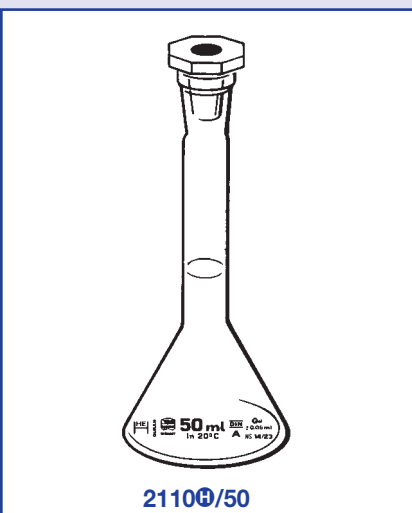
2109/... DURAN®/borosilicate glass 3.3, standard type, fused graduation “ASSISTENT-PERMANENT”, with two marks, without stopper

2109/55 capacity 50/ 55 ml

2109/110 capacity 100/110 ml

“Assistent” Volumetric flasks, trapezoidal conformity-certified $\overline{\text{M}}$

Ⓣolerance indicated on each flask, DURAN®/borosilicate glass 3.3, fused blue graduation “ASSISTENT-PERMANENT”.

2110 $\overline{\text{H}}$ /50

2110 $\overline{\text{H}}$ /... conical shape, with enlarged base for greater stability, with standard ground and interchangeable NS-stopper of polyethylene available with individual test- or lot-control certificat on request at surcharge

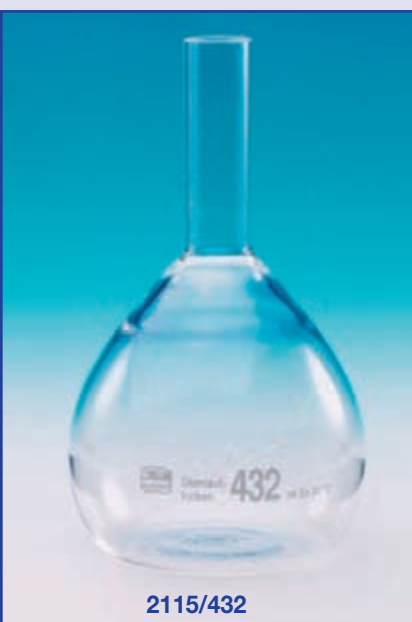
Capacity ml	Ⓣolerance ml	$\overline{\text{M}}$	NS
1	0,025	2110$\overline{\text{H}}$/1	7/16
2	0,025	2110$\overline{\text{H}}$/2	7/16
2*	0,04	2110$\overline{\text{H}}$/210W	10/19
5	0,025	2110$\overline{\text{H}}$/5	7/16
10	0,025	2110$\overline{\text{H}}$/10	7/16
20	0,04	2110$\overline{\text{H}}$/20	10/19
25	0,04	2110$\overline{\text{H}}$/25	10/19
50	0,06	2110$\overline{\text{H}}$/50	12/21

* in addition to DIN

2115/... “Assistent” Over-flow volumetric flasks

	ml
2115/22	22,7
2115/43	43,5
2115/97	97
2115/164	164
2115/250	250
2115/365	365
2115/432	432

“Assistent” Over-flow flasks also in other sizes available



2115/432

Measuring Instruments of Glass



“Assistent” Measuring Cylinders Tall Form

General features and advantages:

- thick uniform walls
- solid, large base provides safe standing
- improved stability by fused graduation “ASSISTENT-PERMANENT”, acid and alkali resistant
- highly contrasting scale, clearly legible figures
- modern production methods ensure that the glass surface is not attacked by etching or engraving
- calibrated to contain (in)
- temperature of calibration: +20°C

Specifications of the various “Assistent” Measuring cylinders:

Capacity		Subdivision	Number of marks	Tolerances	
ml	in ml			Standard-Type ml	▣ = KB ml
5	0,1 = 1/10	50	0,075	0,05	
10	0,2 = 1/5	50	0,15	0,1	
25	0,5 = 1/2	50	0,375	0,25	
50	1 = 1/1	50	0,75	0,5	
100	1 = 1/1	100	0,75	0,5	
150	2 = 2/1	75	1,5		
200	2 = 2/1	100	1,5		
250	2 = 2/1	125	1,5	1,0	
500	5 = 5/1	100	3,75	2,5	
1000	10 = 10/1	100	7,5	5,0	
2000	20 = 20/1	100	15,0	10,0	



All “Assistent” measuring cylinders

- standard type
 - conformity-certified ▣
- Tolerance indicated on each cylinder
- are subject to precise adjustment and control procedures.

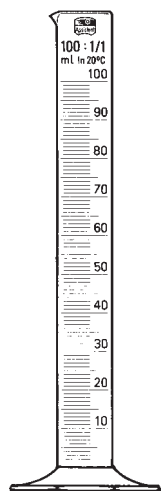
Conformity certified measuring instruments conform to German Weights and Measures Regulations and DIN standards respectively (= class A).

DIN EN ISO 4788

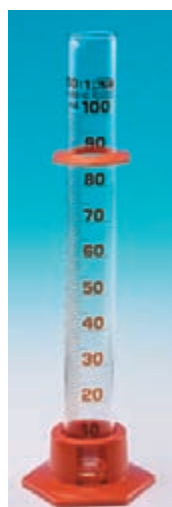
The tolerance of the standard type measuring cylinders is within 1,5 times class A (therefore more accurate than class B).



Measuring Instruments of Glass



2170/100 2180/100

2172^{HE}/25 2172^{HE}/50

2190/100



2200/100

“Assistent” Measuring Cylinders Tall Form

“Assistent” Measuring cylinders, tall form, hexagonal base, with spout

2170/... DURAN®/borosilicate glass 3.3 standard type, fused blue graduation “ASSISTENT-PERMANENT”

2172/^{HE}... **conformity-certified ^{HE}**, Tolerance indicated on each cylinder, fused blue graduation “ASSISTENT-PERMANENT”, circular graduation at main points, class A available with individual test- or lot-control certificate on request at surcharge

2180/... **standard type**, fused amber graduation “ASSISTENT-PERMANENT”

2182/^{HE}... **conformity-certified ^{HE}**, Tolerance indicated on each cylinder, fused amber graduation “ASSISTENT-PERMANENT”, circular graduation at main points, class A available with individual test- or lot-control certificate on request at surcharge

2190/... **Measuring cylinders**, AR®/soda glass, standard type, fused amber graduation “ASSISTENT-PERMANENT”, with detachable hexagonal plastic base (with imprinted size) and protecting ring (both of high density polyethylene, resistant to most chemicals, and temperatures up to +120 °C)

2200/... **Measuring cylinders**, common type, AR®/soda glass standard type, fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, with circular base and spout.

measures see No. 4400 on page 182

Capacity ml	Sub- divisions ml	Circular base Common type	Standard type hexagonal base		with hexagonal plastic base	^{HE} hexagonal base	
			DURAN®/ borosilicate glass 3.3	DURAN®/ borosilicate glass 3.3		DURAN®/ borosilicate glass 3.3	DURAN®/ borosilicate glass 3.3
5	0,1	2200/5		2180/5	–	–	2182 ^{HE} /5
10	0,2	2200/10	2170/10	2180/10	2190/10	2172 ^{HE} /10	2182 ^{HE} /10
25	0,5	2200/25	2170/25	2180/25	2190/25	2172 ^{HE} /25	2182 ^{HE} /25
50	1	2200/50	2170/50	2180/50	2190/50	2172 ^{HE} /50	2182 ^{HE} /50
100	1	2200/100	2170/100	2180/100	2190/100	2172 ^{HE} /100	2182 ^{HE} /100
150	2	2200/150	–	–	–	–	–
200	2	2200/200	–	–	–	–	–
250	2	2200/250	2170/250	2180/250	2190/250	2172 ^{HE} /250	2182 ^{HE} /250
500	5	2200/500*	2170/500	2180/500	2190/500	2172 ^{HE} /500	2182 ^{HE} /500
1000	10	2200/1000*	2170/1000	2180/1000	2190/1000	2172 ^{HE} /1000	2182 ^{HE} /1000
2000	20	2200/2000*	2170/2000	2180/2000	–	2172 ^{HE} /2000	2182 ^{HE} /2000

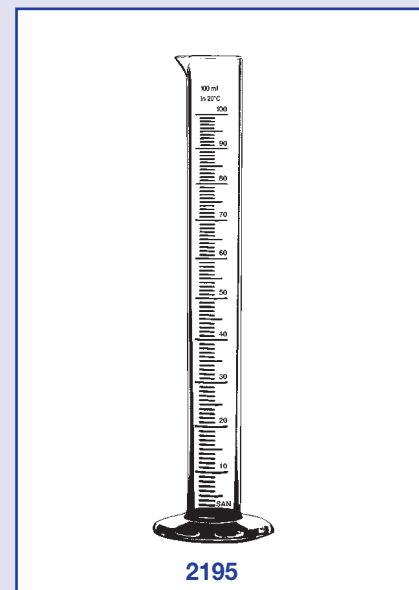
* with hexagonal base borosilicate glass 3.3

Measuring Instruments of Glass



- 2194/...** **Measuring cylinders** of polypropylene, tall form, blue graduation
- 2195/...** **Measuring cylinders** of polypropylene, transparent, tall form, with octagonal base and spout, embossed scale
- 2196/...** **Measuring cylinders** of PMP polymethylpentene (TPX), tall form, with hexagonal base, clear, with embossed scale

Capacity ml	Sub- divisions ml	Polypropylene with Octagonal base		PMP
10	0,2	2194/10	2195/10	2196/10
25	0,5	2194/25	2195/25	2196/25
50	1	2194/50	2195/50	2196/50
100	1	2194/100	2195/100	2196/100
250	2	2194/250	2195/250	2196/250
500	5	2194/500	2195/500	2196/500
1000	10	2194/1000	2195/1000	2196/1000
2000	20	2194/2000	2195/2000	2196/2000

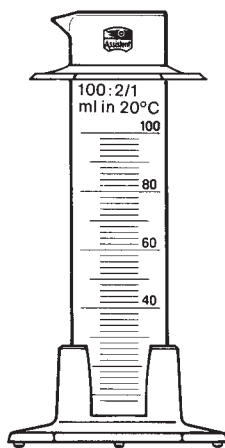




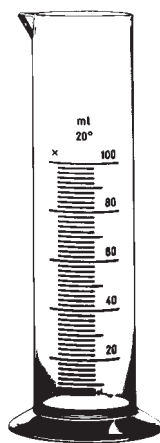
Measuring Instruments of Glass



2205/100



2206/100



2208

“Assistent” Measuring Cylinders Low Form “Assistent” Mixing Cylinders

“Assistent” Measuring cylinders, low form with spout DIN EN ISO 4788

2205/... circular base, AR[®]/soda glass, standard type, fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, class B twice the official tolerance dimensions see No. 4401 on page 182

2206/... with detachable hexagonal plastic base (with imprinted size) and protecting ring (both of high density polyethylene, resistant to most chemicals and temperatures up to +120 °C)

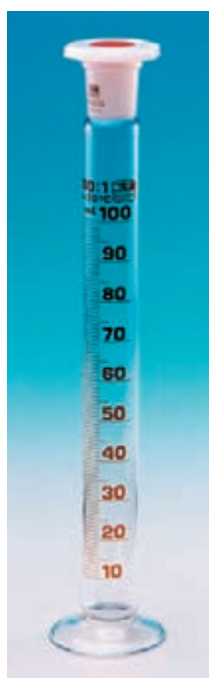
2208/... polypropylene, transparent, circular base, embossed scale

“Assistent” Mixing cylinders, tall form, with NS-stopper of polyethylene, standard type, fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, tolerance: 1,5 times class A, DIN EN ISO 4788

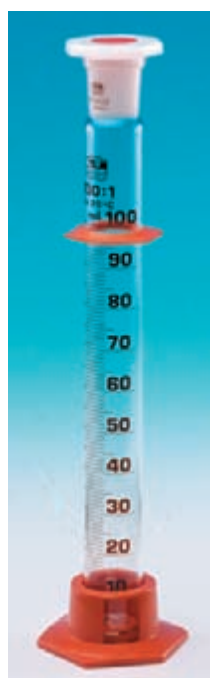
2210/... circular base, AR[®]/soda glass

2211/... AR[®]/soda glass, with detachable hexagonal plastic base (with imprinted size) and protecting ring

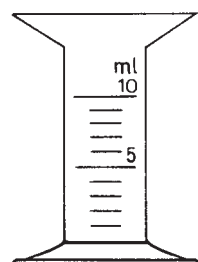
2220 Sperm cylinders with funnel top with approximate scale, 10 ml:1/1, approximative scale, C€



2210/100



2211/100



2220

Low Form

Capacity ml	Sub- divisions ml	Circular base AR [®] -/Soda- glass	Hexagonal plastic base	Poly- propylene Circular base
5	0,5	2205/5	–	–
10	1	2205/10	2206/10	–
25	1	2205/25	–	2208/25
50	2	2205/50	2206/50	2208/50
100	2	2205/100	2206/100	2208/100
150	5	2205/150	–	–
200	5	2205/200	–	–
250	5	2205/250	2206/250	2208/250
300	5	2205/300	–	–
500	10	2205/500	2206/500	2208/500
1000	20	2205/1000	–	2208/1000
2000	50	2205/2000	–	–

Mixing Cylinders, Tall Form

Capacity ml	Sub- divisions ml	Neck NS	Circular base AR [®] -/soda glass	Hexagonal plastic base
10	0,2	10	2210/10	–
25	0,5	14,5	2210/25	2211/25
50	1	19	2210/50	2211/50
100	1	24	2210/100	2211/100
250	2	29	2210/250	2211/250
500	5	34	2210/500	2211/500

Measuring Instruments of Glass

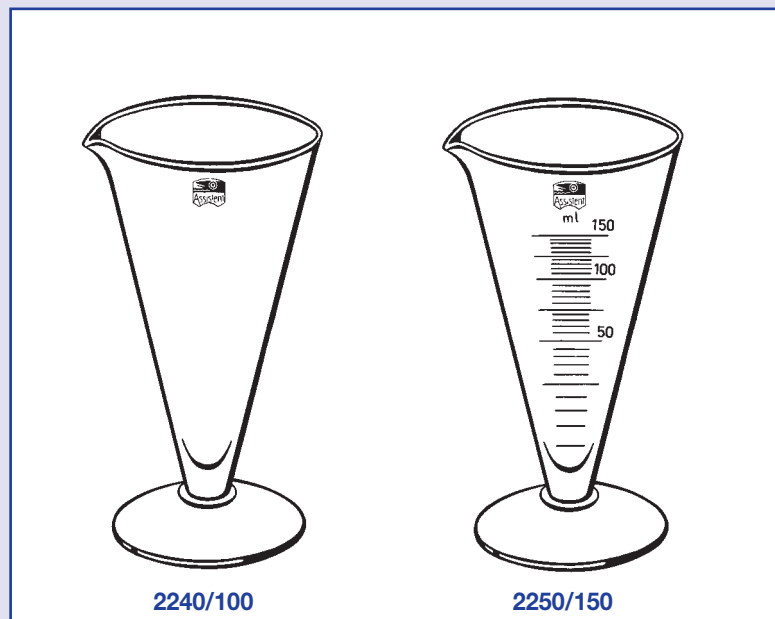


“Assistent” Measures

“Assistent” Measures, with base and spout, without handle, fused blue graduation “ASSISTENT-PERMANENT” highly contrasting scale, clearly legible figures, standard type, class B, tolerance: twice the official tolerance

2240/... conical, not graduated
(urine test glasses, low form)

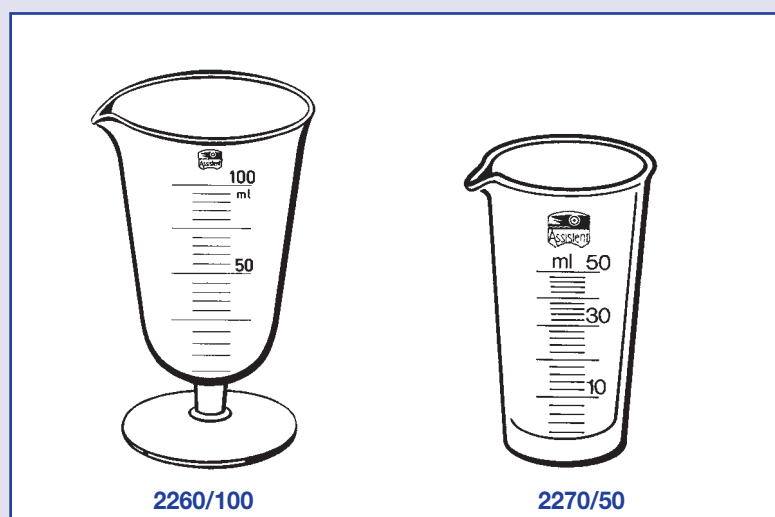
2250/... graduated



2260/... bell shape, graduated

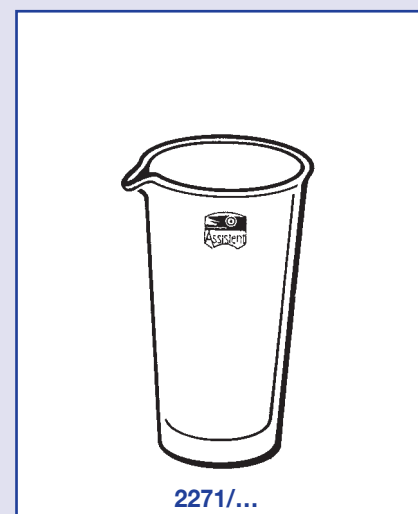
2270/... wide conical shape (beaker form), graduated

2271/... not graduated



Capacity ml	Subdivisions ml	Conical		Bell shape	Wide conical shape	
		not graduated	graduated	graduated	graduated	not graduated
5	1	–	–	2260/5	2270/5	2271/5
10	1	–	–	2260/10	2270/10	2271/10
15	1	–	–	2260/15	2270/15	2271/15
25	1	2240/25	2250/25	2260/25	2270/25	2271/25
30	1	–	–	–	2270/30	2271/30
50	2	2240/50	2250/50	2260/50	2270/50	2271/50
100	5	2240/100	2250/100	2260/100	2270/100	2271/100
150	5	2240/150	2250/150	–	2270/150	2271/150
250	10	2240/250	2250/250	2260/250	2270/250	2271/250
500	20	2240/500	2250/500	–	2270/500	2271/500
1000	25	2240/1000	2250/1000	–	2270/1000*	2271/1000

* amber scale

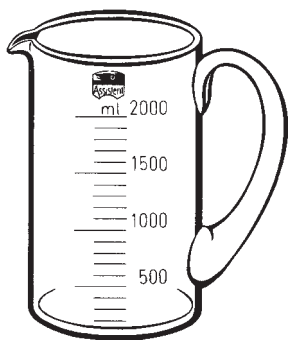




Measuring Instruments of Glass



2280/...



2281/2

“Assistent” Measuring Jugs

“Assistent” Test Glasses

“Assistent” Measuring jugs with spout and handle

2280/... of glass, without scale,

2281/... of glass, with scale,

Capacity ml.	without scale	with scale
1000	2280/1	2281/1
2000	2280/2	2281/2



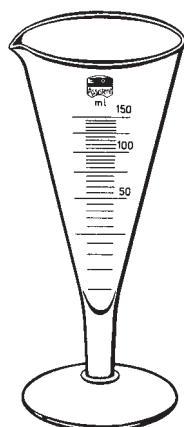
2283/...

2283/... of polypropylene, transparent, with scale
(urine measuring jugs)

	Capacity ml	Subdivisions ml
2283/50	50	2
2283/100	100	5
2283/250	250	10
2283/500	500	10
2283/1000	1000	20
2283/2000	2000	50
2283/3000	3000	50
2283/5000	5000	100



2820/...



2821/150

“Assistent” Test glasses

(urine test glasses) with base and spout, fused blue graduation “ASSISTENT-PERMANENT”

2820/... not graduated

2821/... graduated

Capacity ml	Subdivisions ml	not graduated	graduated
150	5	2820/150	2821/150
250	10	2820/250	2821/250
500	20	2820/500	

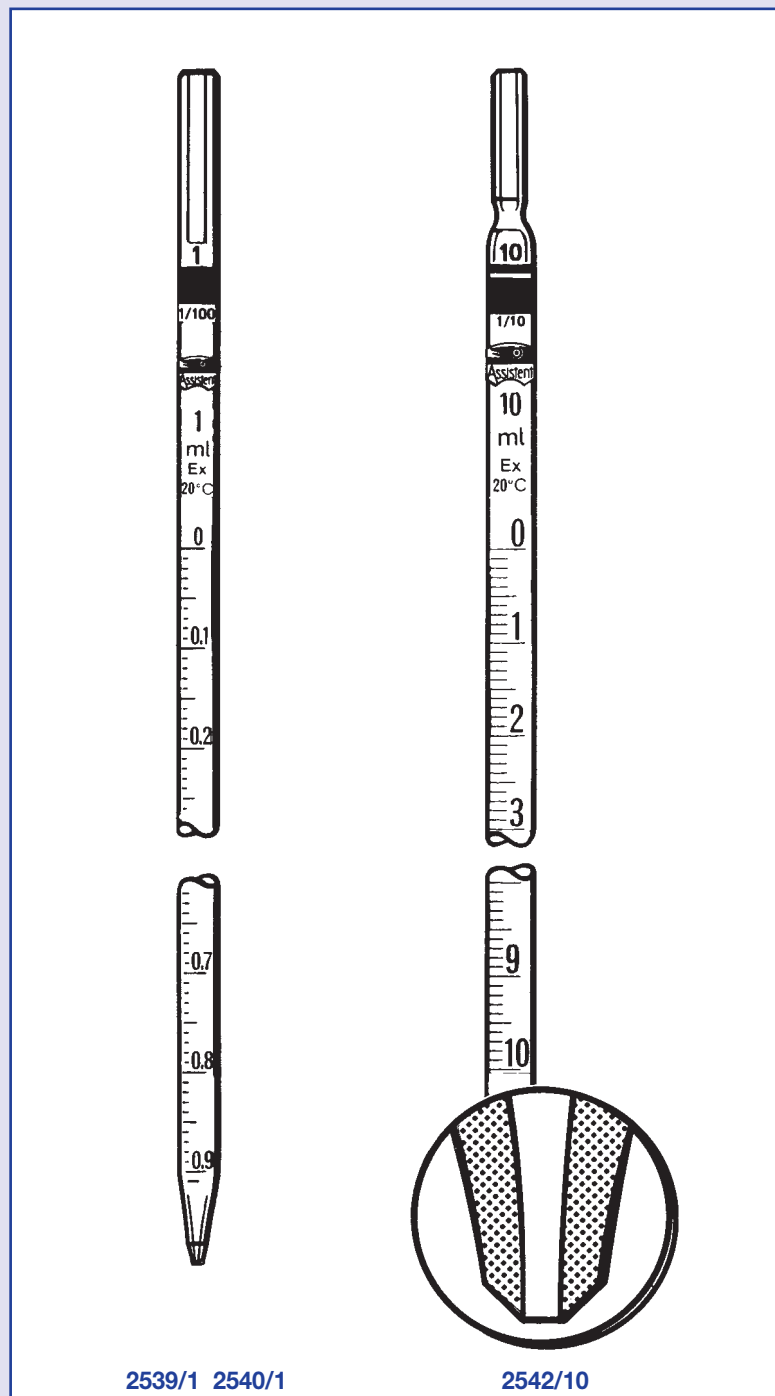
Measuring Instruments of Glass



“Assistent” Measuring Pipettes

General features and advantages:

- thick-walled, solid finish
- improved stability by fused graduation “ASSISTENT-PERMANENT”, acid and alkali resistant
- highly contrasting scale, clearly legible figures
- modern production methods ensure that glass surface is not attacked by etching or engraving
- colour-coded in accordance with ISO Standards
- reinforced, fire polished ends and calibrated faceted tips
- suitable short delivery time
- especially selected raw material for each type of pipette
- measuring pipettes of 5 to 25 ml are with constriction in upper part (for cotton plugging)
- Calibration to deliver (Ex) for volumes as of 0,5 ml
The quantity of liquid delivered serves as measuring basis for calibration.
Don't blow out residual liquid (except with “blow-out pipettes” which are marked as such!).
- Calibration to contain (in) for volumes 0,1 and 0,2 ml
The quantity of liquid contained serves as measuring basis for calibration.
We recommend to rinse capillary pipettes “calibrated to tip” (common type).
- Temperature of calibration: +20 °C;
(on request also 27,5 °C or similar)
- Partial delivery pipettes (not calibrated to tip) are coded with a small band in addition to the colour code – according to ISO Standards.



2539/1 2540/1

2542/10



Measuring Instruments of Glass

“Assistent” Measuring Pipettes

All “Assistent” measuring pipettes:

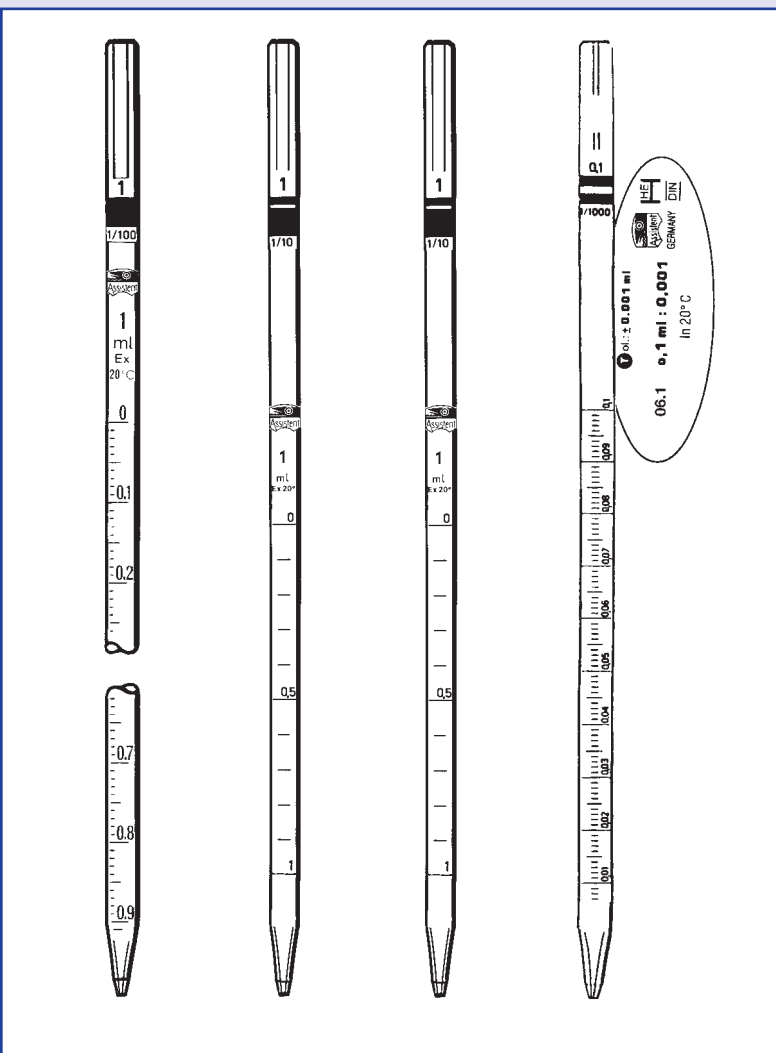
- standard type,
- conformity certified M

M Tolerance indicated on each pipette

are subject to precise adjustment and control procedures.

Conformity certified measuring instruments conform to the German Weight and Measures Regulations and DIN Standards respectively (= class A).

The tolerance of the standard type pipettes is within 1,5 times the official tolerance (therefore more accurate than class B).



Specifications of the various “Assistent” measuring pipettes:

Capacity ml	Subdivisions ml	Marks	Length cm ±1 cm	Tolerances		Delivery time sec.	Colour code
				Standard Type ml	M = KB = μ l		
0,1*	0,01 = 1/100	10	25	0,0015 = 1,5			white
0,1*	0,001 = 1/1000	100	25	0,0015 = 1,5	0,001 = 1		2x green
0,2*	0,01 = 1/100	20	36	0,003 = 3			black
0,2*	0,001 = 1/1000	200	36	0,003 = 3			2x blue
0,2*	0,002 = 1/500	100	36	0,003 = 3	0,002 = 2		2x white
0,5	0,01 = 1/100	50	25 36	0,008 = 8	0,005 = 5	2- 8	2x yellow
1	0,01 = 1/100	100	36	0,010 = 10	0,007 = 7	2- 8	yellow
1	0,1 = 1/10	10	25 36	0,010 = 10	0,007 = 7	2- 8	red
2	0,01 = 1/100	200	36	0,015 = 15	0,010 = 10	2- 8	2x white
2	0,02 = 1/50	100	36	0,015 = 15	0,010 = 10	2- 8	black
2	0,1 = 1/10	20	36	0,015 = 5	0,010 = 10	2- 8	green
3	0,01 = 1/100	300	36	0,015 = 15		2- 8	2x blue
5	0,1 = 1/10	50	36	0,045 = 45	0,03 = 30	5-11	blue
5	0,05 = 1/20	100	36	0,045 = 45	0,03 = 30	5-11	red
10	0,1 = 1/10	100	36	0,075 = 75	0,05 = 50	5-11	orange
20	0,1 = 1/10	200	36	0,150 = 150	0,1 = 100	9-15	2x yellow
25	0,1 = 1/10	250	45	0,150 = 150	0,1 = 100	9-15	white
50	0,2 = 1/5	250	45	0,30 = 300		25-35	black

* calibrated to contain (In)

Measuring Instruments of Glass



“Assistent” Measuring Pipettes, Standard Type

“Assistent” Measuring pipettes, standard type tolerance within 1,5 times the official tolerance, fused blue or amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, usual graduation marks, suitable short delivery time, zero at top.

Packing: 10 in a box

2530/... with Schellbach stripe, full delivery, fused blue graduation “ASSISTENT-PERMANENT”

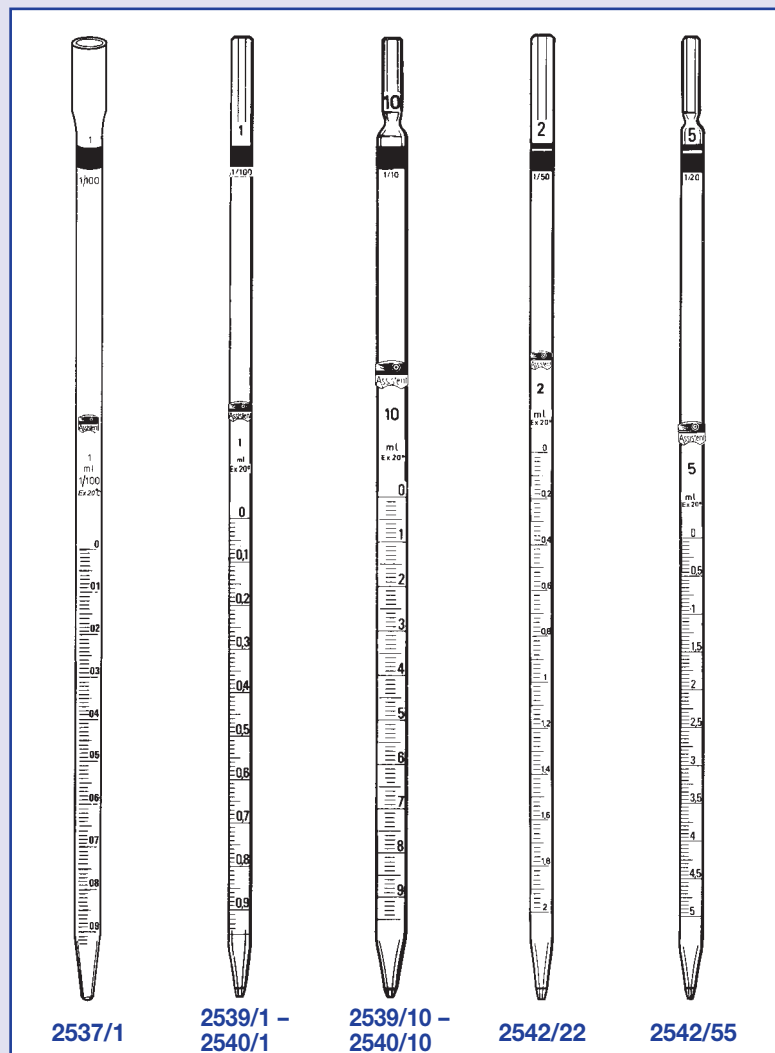
2537/... clear glass, full delivery, fused amber graduation “ASSISTENT-PERMANENT”, with extension for cotton plugging

2539/... clear glass, full delivery, (serological pipettes), fused amber graduation “ASSISTENT-PERMANENT”

2540/... clear glass, full delivery, common type, fused blue graduation “ASSISTENT-PERMANENT”

2542/... clear glass, partial delivery (not calibrated to tip) fused blue graduation “ASSISTENT-PERMANENT”

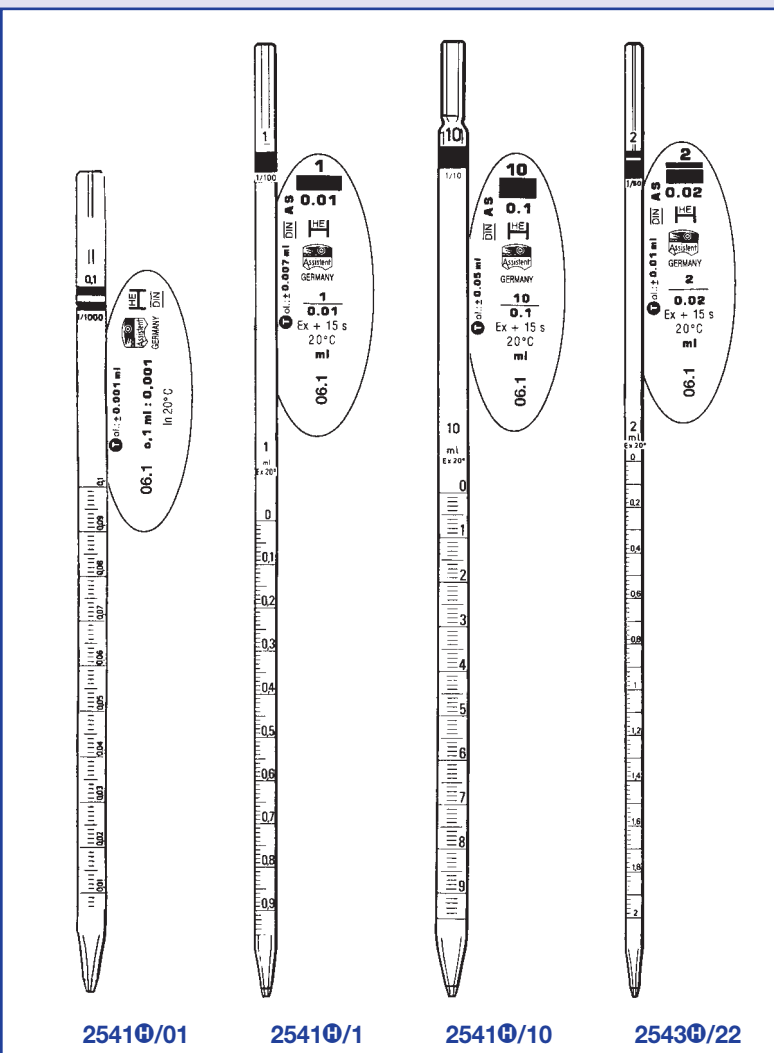
...K/... All mentioned measuring pipettes are available with bulb for additional safety. Please add “K” to the number when ordering.



Capacity ml	Tolerance		Schellbach stripe full delivery	Clear glass, full delivery serological pipettes	Clear glass, full delivery common type	Clear glass, partial delivery
	ml	= µl				
0,1:1/1000	0,0015	= 1,5				
0,2:1/1000	0,003	= 3				
0,5:1/100	0,008	= 8				
1:1/100	0,010	= 10	2530/1	2537/1	2539/1	2540/1
1:1/10	0,010	= 10		-	2539/11	2540/11
2:1/100	0,015	= 15	2530/2	2537/2	2539/2	2540/2
2:1/50	0,015	= 15		2537/22	2539/22	2540/22
2:1/10	0,015	= 15		-	2539/21	2540/21
5:1/10	0,045	= 45	2530/5		2539/5	2540/5
5:1/20	0,045	= 45		-	2539/55	2540/55
10:1/10	0,075	= 75	2530/10		2539/10	2540/10
20:1/10	0,150	= 150	2530/20		2539/20	2540/20
25:1/10	0,150	= 150	2530/25		2539/25	2540/25
50:1/5	0,300	= 300			2539/50	2540/50



Measuring Instruments of Glass



“Assistent”-Measuring pipettes,
conformity certified M^{E}

“Assistent”-Measuring pipettes, DIN 12 697,
conformity certified M^{E}

Tolerance indicated on each pipette, class AS,
within official tolerance, fused amber graduation “ASSISTENT-
PERMANENT”, acid and alkali resistant, circular graduation at
main points, 15 sec waiting time, suitable short delivery time,
zero at top

2541⊕/... clear glass, full delivery

2543⊕/... clear glass, partial delivery
(not calibrated to tip)

.../..K All mentioned volumetric pipettes are available with
bulb for additional safety.
Please add “K” to the reference, when ordering

Capacity ml	Tolerance ml = μl	clear glass full delivery	clear glass partial delivery
0,1:1/1000	0,001 = 1	2541 ⊕/01*	
0,2:1/500	0,002 = 2	2541 ⊕/025*	
0,5:1/100	0,005 = 5	2541 ⊕/05	2543 ⊕/05
1 :1/100	0,007 = 7	2541 ⊕/1	2543 ⊕/1
1 :1/10	0,007 = 7	2541 ⊕/11**	-
2 :1/100	0,01 = 10	2541 ⊕/2***	2543 ⊕/2***
2 :1/50	0,01 = 10	2541 ⊕/22	2543 ⊕/22
2 :1/10	0,01 = 10	2541 ⊕/21**	-
5 :1/10	0,03 = 30	2541 ⊕/5**	
5 :1/20	0,03 = 30	2541 ⊕/55	2543 ⊕/55
10 :1/10	0,05 = 50	2541 ⊕/10	2543 ⊕/10
20 :1/10	0,1 = 100	2541 ⊕/20**	-
25 :1/10	0,1 = 100	2541 ⊕/25	2543 ⊕/25
50 :1/10	0,1 = 100	2541 ⊕/50**	

* zero at tip

** in addition to DIN

*** in addition to DIN, not conformity certified

available with individual test- or lot-control certificate on request at surcharge

Measuring Instruments of Glass



“Assistent” Measuring Pipettes Blow-Out Type

“Assistent” Blow-out measuring pipettes marked with a white band near top, with inscription: “ausblasen – blow out” zero at top

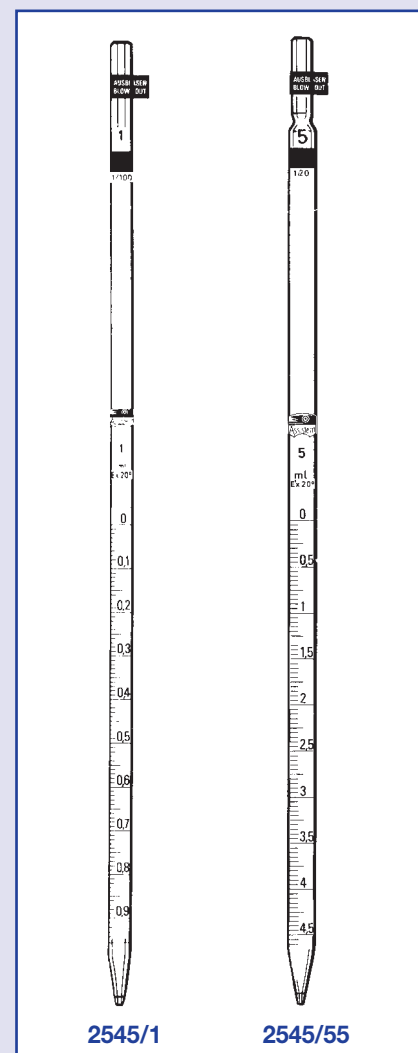
Pipettes must be allowed to drain, after 2 sec the remaining drop in the tip has to be blown out.

Packing: 10 in a box

2545/... standard type

tolerance: within 1,5 times the official tolerance,
fused blue graduation “ASSISTENT-PERMANENT”
usual graduation marks, suitable short delivery time

Capacity ml	Tolerance ml	Standard Type
1:1/100	0,010	2545/1
2:1/100	0,015	2545/2
5:1/10	0,045	2545/5
5:1/20	0,045	2545/55
10:1/10	0,075	2545/10
25:1/10	0,150	2545/25





Measuring Instruments of Glass



2548/55



2555/5



386



2569

“Assistent” Safety Pipettes

“Assistent” Safety pipettes with interchangeable ground-in piston, standard type, precisely adjusted, fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant; calibrated, fire polished tips; thick-walled, solid finish – zero at top

Packing: each in a sturdy, transparent tube

2548/... “Assistent” Safety measuring pipettes

2555/... “Assistent” Safety volumetric pipettes

	Capacity ml	Subdivisions ml		Capacity ml
2548/1	1	0,01 = 1/100	2555/1	1
2548/22	2	0,02 = 1/50	2555/2	2
2548/55	5	0,05 = 1/50	2555/5	5
2548/10	10	0,1 = 1/10	2555/10	10
2548/20	20	0,1 = 1/10	2555/20	20
2548/25	25	0,1 = 1/10	2555/25	25

386 Safety sedimentation pipettes,
graduation 0–200 mm : 1 mm

CE

2569/... Ungraduated pipettes,
clear glass, diam. approx. 7 mm

Length approx.	12	15	20	25 cm
	2569/12	2569/15	2569/20	2569/25

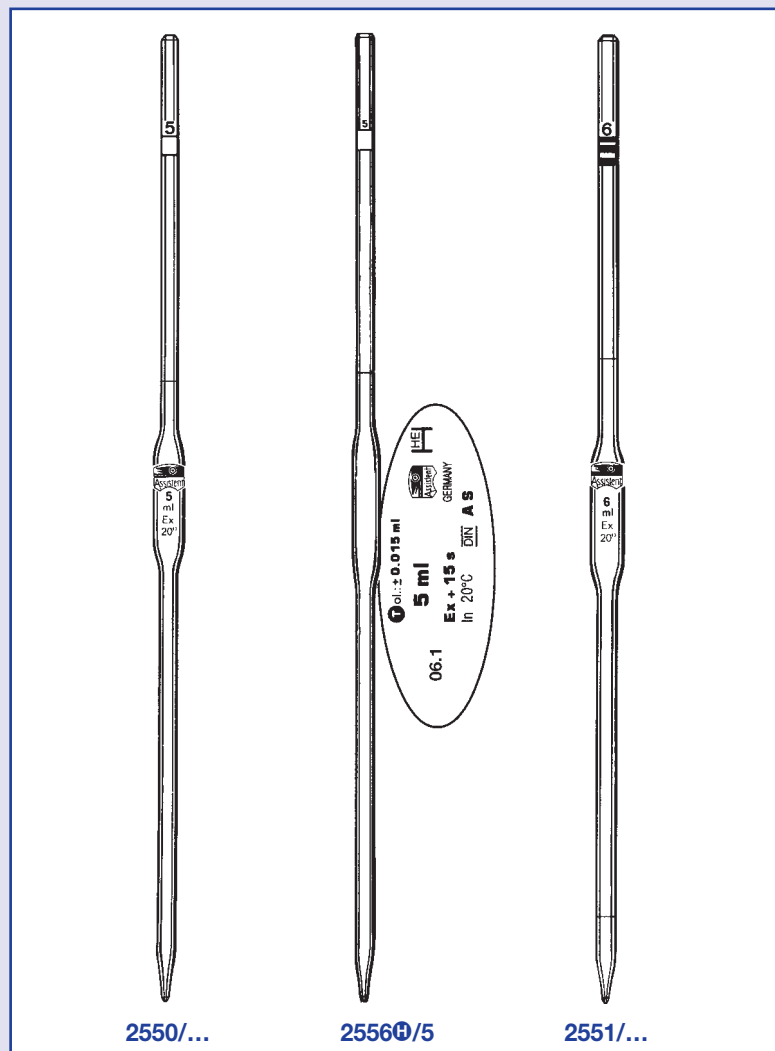
Measuring Instruments of Glass



“Assistent” Volumetric Pipettes

General features and advantages:

- thick-walled, solid finish
- improved stability by fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant, clearly legible figures
- modern production methods ensure that glass surface is not attacked by etching or engraving
- colour-coded in accordance with ISO Standards
- reinforced, fire polished ends and calibrated faceted tips
- suitable short delivery time
- especially selected raw material for each type of pipette
- Calibration to deliver (Ex)
The quantity of liquid delivered serves as measuring basis for calibration. Don't blow out residual liquid (except with “blow-out pipettes” which are marked as such!).
- Temperature of calibration: +20 °C
(on request also +27,5 °C or similar)
- Partial delivery pipettes (not calibrated to tip) are coded with a small band in addition to the colour code – according to ISO Standards.



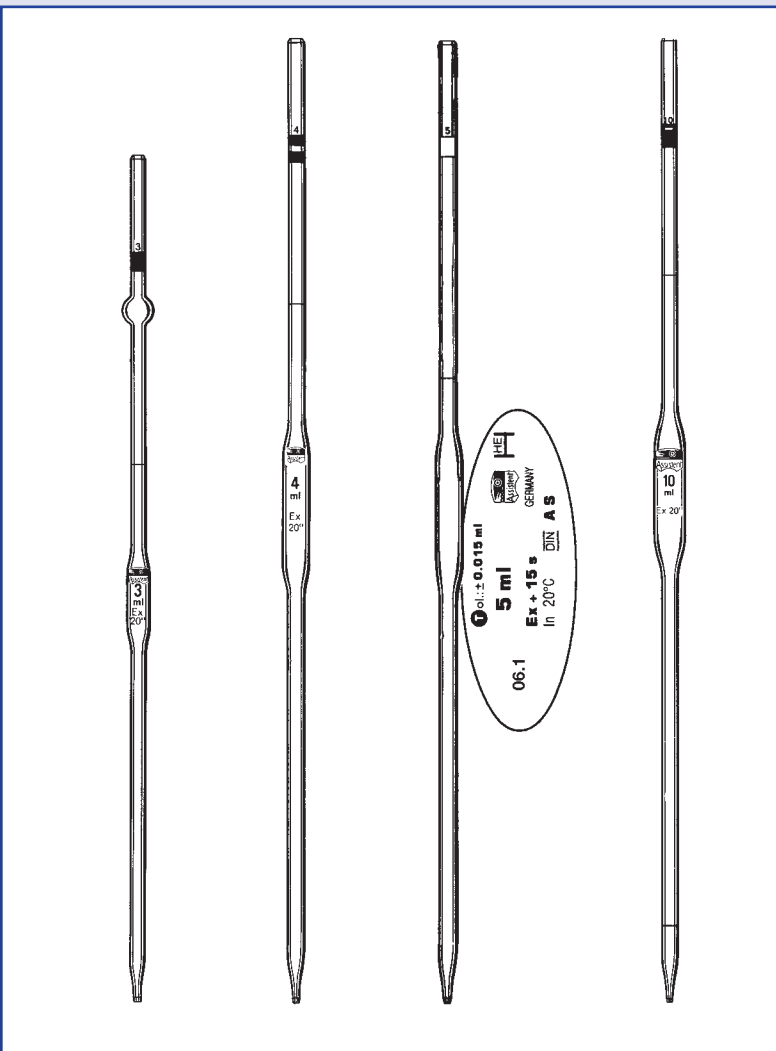
2550/...

2556①/5

2551/...



Measuring Instruments of Glass



“Assistent” Volumetric Pipettes

All “Assistent” volumetric pipettes:

- standard type
- conformity certified
- Tolerance indicated on each pipette

are subject to precise adjustment and control procedures.

Conformity certified measuring instruments conform to the DIN Standards (= class A).

The tolerance of the standard type volumetric pipettes is within 1,5 times the official tolerance (therefore more accurate than class B).

Specifications of the various “Assistent” volumetric pipettes:

Capacity ml	Length cm	Tolerance		Delivery time sec.	Colour code
		standard type	class A		
0,5	±1cm 30	0,0075	0,005	4- 8	2x black
1	30	0,01	0,007	5- 9	blue
1,5	30	0,015	0,01	5- 9	
2	33	0,015	0,01	5- 9	
2,5	35	0,015	0,01	5- 9	
3	35	0,015	0,01	5- 9	black
4	40	0,020	0,015	7-11	2x red
5	40	0,020	0,015	7-11	white
6	41	0,020	0,015	7-11	2x orange
7	43	0,030	0,02	7-11	2x green
8	44	0,030	0,02	8-12	blue
9	44	0,030	0,02	8-12	black
10	44	0,030	0,02	8-12	red
11	45	0,030		8-12	
15	51	0,045	0,03	9-13	green
20	51	0,045	0,03	9-13	yellow
25	52	0,045	0,03	10-15	blue
30	53	0,045	0,03	10-15	black
40	54	0,075	0,05	13-18	white
50	54	0,075	0,05	13-18	red
100	58	0,12	0,08	25-30	yellow

0,5 and 1 ml without extension.

Measuring Instruments of Glass



“Assistent” Volumetric Pipettes Standard Type

“Assistent” Volumetric pipettes, standard type tolerance within 1,5 times the official tolerance suitable short delivery time fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant,

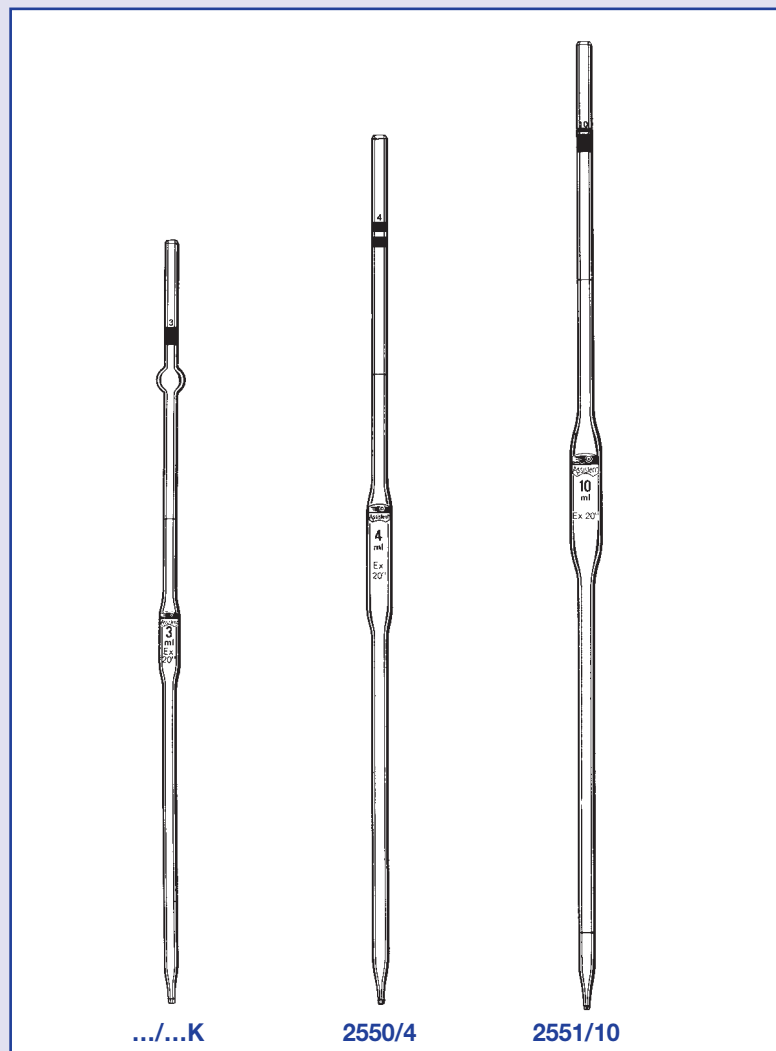
Packing: up to 11 ml: 10 in a box
15 – 100 ml: 6 in a box

2550/... standard type, with one mark

2551/... standard type, with two marks

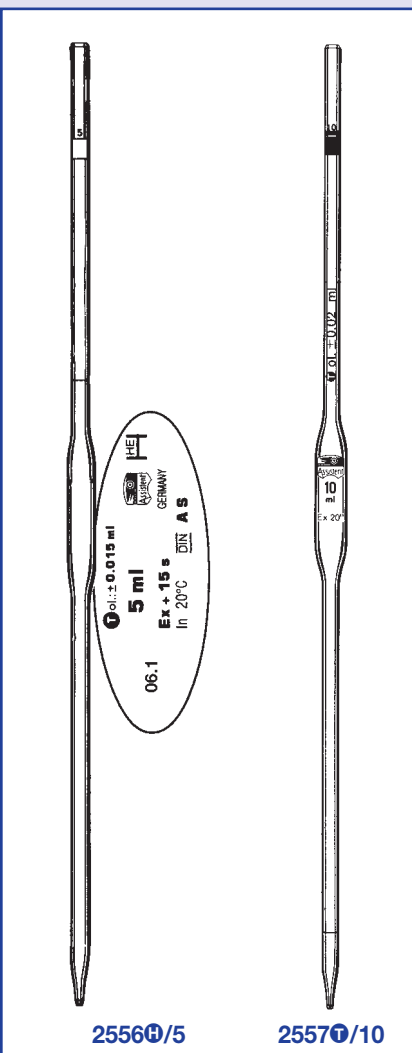
.../...K All mentioned volumetric pipettes are available with bulb for additional safety.
Please add “K” to the number when ordering

Capacity ml	Tolerance ml	One mark	Two marks
0,5	0,0075	2550/05	
1	0,01	2550/1	2551/1
1,5	0,015	2550/015	–
2	0,015	2550/2	2551/2
2,5	0,015	2550/025	–
3	0,015	2550/3	2551/3
4	0,020	2550/4	–
5	0,020	2550/5	2551/5
6	0,020	2550/6	–
10	0,030	2550/10	2551/10
11	0,045	2550/11	–
20	0,045	2550/20	2551/20
25	0,045	2550/25	2551/25
30	0,045	2550/30	–
40	0,075	2550/40	–
50	0,075	2550/50	2551/50
100	0,12	2550/100	–





Measuring Instruments of Glass



“Assistent” Volumetric Pipettes DIN 12 691, Conformity Certified KB

“Assistent” Volumetric pipettes conformity certified KB

KB olerance indicated on each pipette, class AS, within official tolerance fused amber graduation “ASSISTENT-PERMANENT”, acid and alkali resistant
waiting time: 15 sec, suitable short delivery time

Packing: up to 10 ml: 10 in a box
15–100 ml: 6 in a box

2556 KB /... conformity certified KB with one mark available with individual test- or lot-control certificate on request at surcharge.

2557 KB /... KB -type, KB olerance indicated on each pipette, with two marks, class A, within official tolerance

Capacity	KB olerance ml	1 mark KB =KB ml	2 marks KB -type
0,5	0,005	2556KB/05	–
1	0,007	2556KB/1	2557KB/1
2	0,01	2556KB/2	2557KB/2
2,5	0,01	2556KB/025*	–
3	0,01	2556KB/3*	2557KB/3
4	0,015	2556KB/4*	2557KB/4
5	0,015	2556KB/5	2557KB/5
6	0,015	2556KB/6*	–
7	0,02	2556KB/7*	–
8	0,02	2556KB/8*	–
9	0,02	2556KB/9*	–
10	0,02	2556KB/10	2557KB/10
15	0,03	2556KB/15*	–
20	0,03	2556KB/20	2557KB/20
25	0,03	2556KB/25	2557KB/25
30	0,03	2556KB/30*	–
40	0,05	2556KB/40*	–
50	0,05	2556KB/50	2557KB/50
100	0,08	2556KB/100	2557KB/100

* in addition to DIN

Measuring Instruments of Glass



“Assistent” Specific Gravity Bottles

Specific gravity bottles (pycnometers) acc. Gay-Lussac, with ground-in stopper

Capacity cm ³		25	50	100
5	10			
unadjusted				
2570/5	2570/10	2570/25	2570/50	2570/100
precisely adjusted				
2571/5	2571/10	2571/25	2571/50	2571/100
correct to three decimal places				
2571/35	2571/310	2571/325	2571/350	2571/3100

with ground-in thermometer, NS 10/19 +10 to +35 °C:1/5, with side capillary tube and ground-on cap, NS 7,5

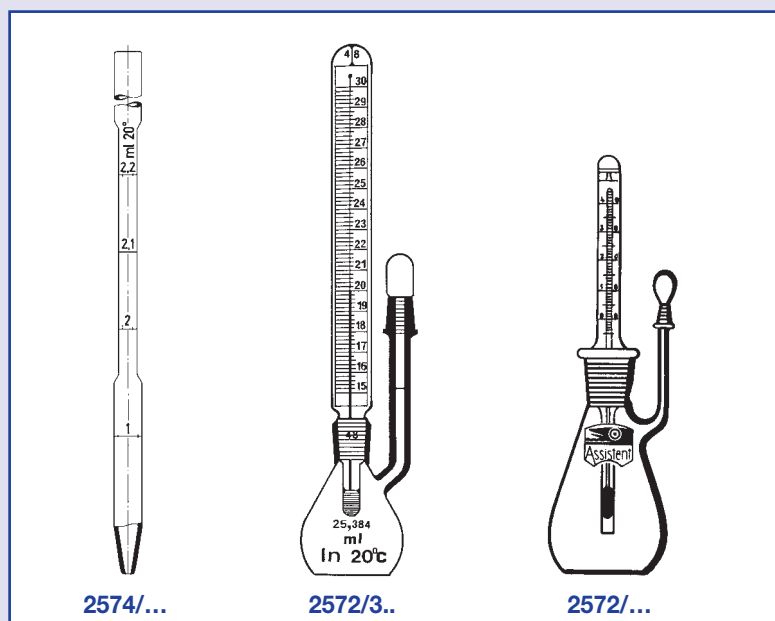
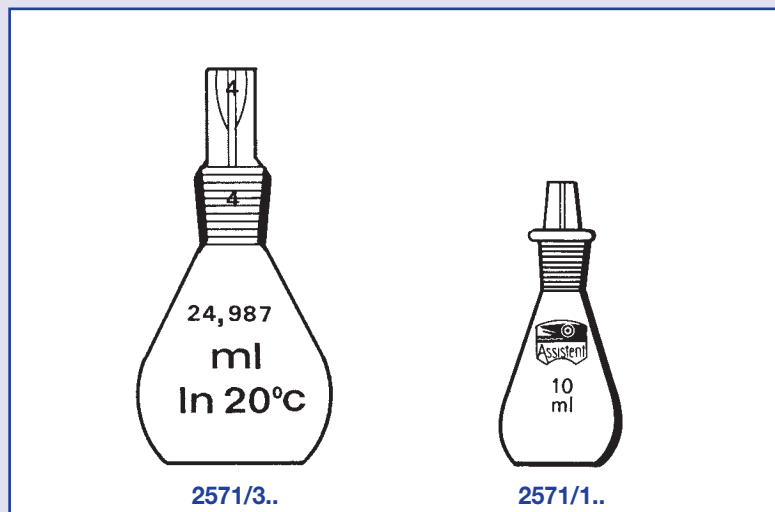
Capacity cm ³		25	50	100
5	10			
precisely adjusted,				
2572/5	2572/10	2572/25	2572/50	2572/100
correct to three decimal places				
2572/35	2572/310	2572/325	2572/350	2572/3100

2574/... “Assistent” demeter pipettes DIN 12 838

AR[®]-/soda-glass, fused amber graduation
“ASSISTENT-PERMANENT”

calibrated to deliver/blow out (Ex)
except up to 1ml:

	Ring mark at ml	Tolerance ml	Length cm
2574/1	1,0/1,1	0,05/0,005	25
2574/2	0,5/1,0/1,1	0,05/0,05/0,005	25
2574/3	2,0/2,2	0,05/0,005	25
2574/4	1,0/2,0/2,1/2,2	0,05/0,05/ 0,005/0,005	25





General laboratory apparatus



2575



2576



2577

“Assistent” Pipetting Aids

2575 “Assistent” Pipetting aid “macro-Pipex”

requires no current (neither 220 volts connection nor battery) as it is manually operated. Pipetting is accomplished by applying finger pressure, whereby a full stroke delivers approx. 2 ml.

The standard sterile filter supplied with the instrument acts as a safety stop against the penetration of liquids.

The pipette flow is regulated via the lower control button.

Working with pipettes can be this simple, safe and economical:

- manual, safe pipetting at the press of a button
- suitable for all conventional pipettes from 0,5 ml
- with sterile membrane filter (0,2 µm)
- integrated protection against the penetration of liquids
- ergonomic design
- maintenance-free
- all-purpose instrument
- weight approx. 140 g only

2576 “Assistent” Macro pipette, controller, CE
suitable for measuring and volumetric pipettes from 0.1 to 100 ml.
Including membrane filter for safe pipetting.
Suitable for steam Sterilization up to +121 °C.

Spare sparts:

- 2576/1** spare membrane filter
- 2576/2** silicone adapter
- 2576/3** suction bellow with screwing
- 2576/4** valve system
- 2576/5** spare adapter housing

2577 “Assistent” Accupipex, with rotating pipette nozzle

CE

serial pipetting without effort

- for all pipettes from 0,1 – 100 ml
- 8 hours pipetting without recharging
- integrated membrane-filter
- ergonomically perfected
- storage stand and wall support

Dispensing, liquid-flow speeds and „motorized“ or „gravity“ dispensing selectable.

NiMH-Accu battery and powerful pump motor for fast pipetting. LED indication.

Temperature for operation and recharging: +10 °C – +35 °C
Pipette-adapter und membrane-filter resistant to steam sterilization at 121 °C for 20 mins.

The housing is easy to clean and to disinfect.

Technical data:

Housing:	ABS	Filter	PP/PTFE
Adapter support	PP	Adapter:	Si

Ordering data:

- 2577/** **Accupipex**
with recharger, storage stand, wall support,
2 spare membrane-filters 0,45 µm
- 2577/1** **Recharger**, 230 V/50 Hz
- 2577/2** **Silicone adapter**
- 2577/4** **Spare membrane filter**
0,45 µm, non sterile, 5 pcs./pack

General laboratory apparatus



2578/... Pipetting aid „PIPUMP“

2578/02 suitable for measuring pipettes up to 0,2 ml

2578/2 suitable for measuring pipettes up to 2,0 ml

2578/10 suitable for measuring pipettes up to 10 ml

2578/25 suitable for measuring pipettes up to 25 ml



2578/...

“Assistent” Pipetting Aids

2580 “Assistent” Pipette fillers standard model



2580

The “Assistent” pipette fillers have 3 valves. They are seamless and therefore they can be cleaned with acetone or other solvents.

2581 “Assistent” Pipette fillers universal model, with extension, especially for large pipettes

2581/1 Pipette fillers “Flip”, with automatic valve
Easy operation



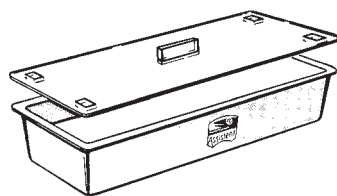
2581



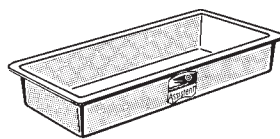
2581/1



General laboratory apparatus



2585 2586



1187

“Assistent” Accessories for Pipettes

2585 “Assistent” Pipette trays of Plexiglas® approx. 47 x 17 x 8 cm stackable

2586 Cover for above of transparent Plexiglas®

1187 Pipette trays of PVC without cover, approx. 38 x 17 x 8 cm, stackable, suitable for storing pipettes or as staining tray



2590/6

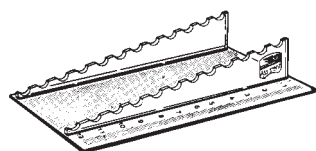


2590/12

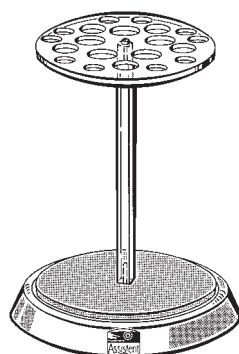
2590/... “Assistent” Pipette supports of Plexiglas® sloping, for measuring and volumetric pipettes

2590/6 for 6 pipettes

2590/12 for 12 pipettes



2583



2593

2583 “Assistent” Pipette holder of Plexiglas® with numbered positions for 12 pipettes, with field for inscriptions

2593 “Assistent” Pipette stand of Plexiglas®, circular, for 20 pipettes, with foam rubber plate to protect the pipette tips.

General laboratory apparatus



“Assistent” Cleaning Accessories

9060/... “Assistent” Jars of polyethylene, white, with wide base no damage of pipette tips owing to the elastic material.

9060/10 approx. 10 x 5 cm

9060/18 approx. 18 x 8 cm

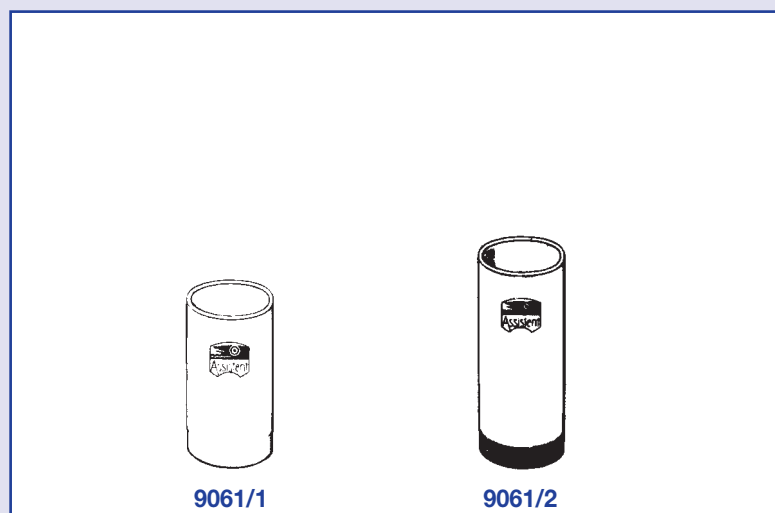
9060/40 approx. 40 x 8 cm



9061/... “Assistent” Extension top, (“DBGM”) of Plexiglas® transparent, for jar No. 9060/18

9061/1 for total height of 30 cm

9061/2 for total height of 40 cm



2596 “Assistent” Pipette baskets of stainless steel wire, diam. approx. 7 cm to immerse pipettes in cleaning/disinfecting liquid, suitable for plastic jar No. 9060/18 with extension top No. 9061/2, for plastic jar No. 9060/40

2597/1 Pipette washing set consisting of:

Plastic jar No. 9060/18

approx. 18 x 8 cm diam.

“Assistent” Extension top of Plexiglas®

No. 9061/2 for total height of 40 cm

“Assistent” Pipette basket of stainless steel wire

No. 2596 diam. approx. 7 cm

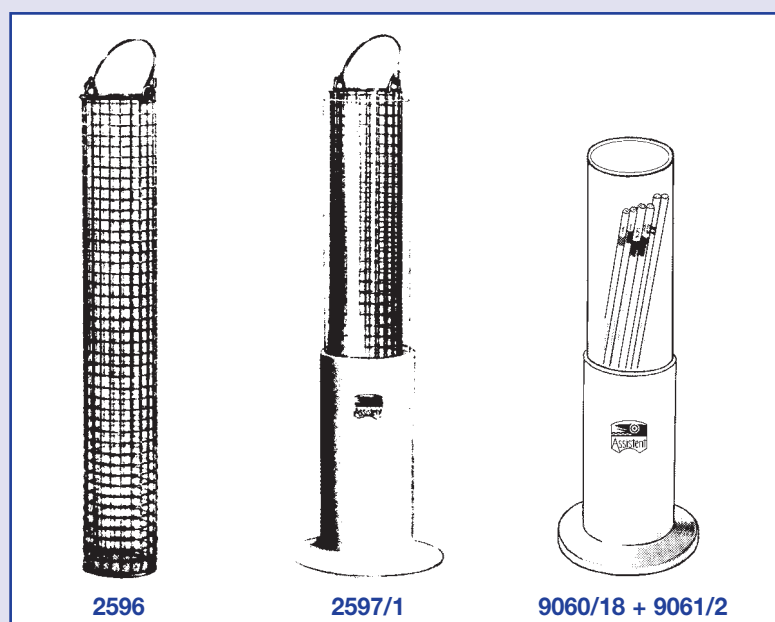
2597/3 Pipette washing set consisting of:

“Assistent” Plastic jar No. 9060/40

approx. 40 x 8 cm diam.

“Assistent” Pipette basket

of stainless steel wire No. 2596, diam. approx. 7 cm

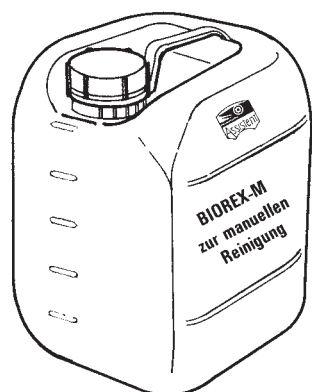




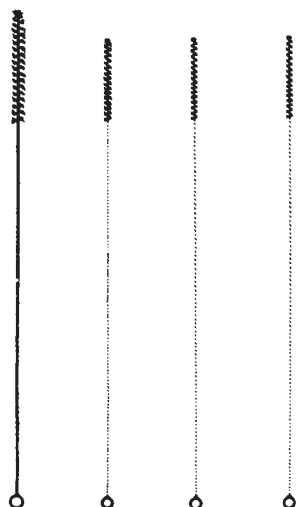
General laboratory apparatus



1398



1406



2588

“Assistent”-Detergents

1398 Glass detergent “Grotanat”

cleans and desinfects in a self-acting way, free of formaldehyde and phosphates. Biologically tested acc. to OECD standard 301 D.

With directions for use and measuring spoon.

Packages of 800 g

1406 “Assistent”-BIOREX-M

liquid, alkaline, phosphate-free detergent concentrate for manual cleaning of laboratory equipment, container of 5 l

Characteristics:

- contains no phosphates, alkaline, pH value of 5 % solution: approx. 12,5
- economical cleaning-activity at low concentration of 1 %.
- liquid, cleans without mechanical aid
- for use with glassware, porcelain, ceramics, plastics (polyethylene, polypropylene, silicone etc.), rubber, stainless steel (may attack non-ferrous metals – please test before use)
- free of solvents

Application:

Use solutions of 1–5 % in cold or hot tapwater. For heavy duty cleaning, solutions of up to 20 % can be used.

Hot solution and soft water improves and accelerates cleaning process.

Immerse the instruments completely, Rinse the instruments with tapwater (and distilled water – if necessary) and dry as usual.

Caution:

Solution contains sodium hydroxide.

Avoid contact with eyes and skin.

Rinse eyes with water and consult medical help after accidental contact.

2588 Cleaning brushes

Set of 4 pcs

for measuring pipettes 1–10 ml

2589/... Cleaning brushes single – for Measuring pipettes

	size	dimensions
2589/1	1 ml	410 x 70 x 4,0 mm ø
2589/2	2 ml	405 x 75 x 4,5 mm ø
2589/5	5 ml	400 x 75 x 8,0 mm ø
2589/10	10 ml	400 x 100 x 12,0 mm ø

General laboratory apparatus





General laboratory apparatus



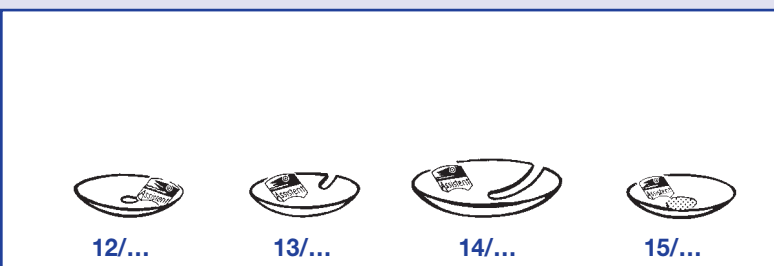
“Assistent”-Laboratory Equipment

10/... “Assistent” Watch glasses

diam. approx. cm							
3	4	5	6	7	8	9	10
10/3	10/4	10/5	10/6	10/7	10/8	10/9	10/10

diam. approx. cm						
11	12	14	15	16	18	20
10/11	10/12	10/14	10/15	10/16	10/18	10/20

- 11/...** ground, in pairs
12/... with hole in centre
13/... with notch
14/... with notch to centre
15/... with flat ground bottom



68/... Aquaria, spherical

Length approx.		
20	25	30 cm
68/20	68/25	68/30

“Assistent” Glass tanks, clear glass

Size outs.						
1	2	3	4	5	6	11
Length approx.						
15	18	20	25	30	36	30 cm
Width approx.						
10	13	15	18	22	23	22 cm
Height approx.						
15	18	20	22	24	26	15 cm

69/... rough-ground rim

69/1 69/2 69/3 69/4 69/5 69/6

70/... fine-ground rim

70/1 70/2 70/3 70/4 70/5 70/6 70/11

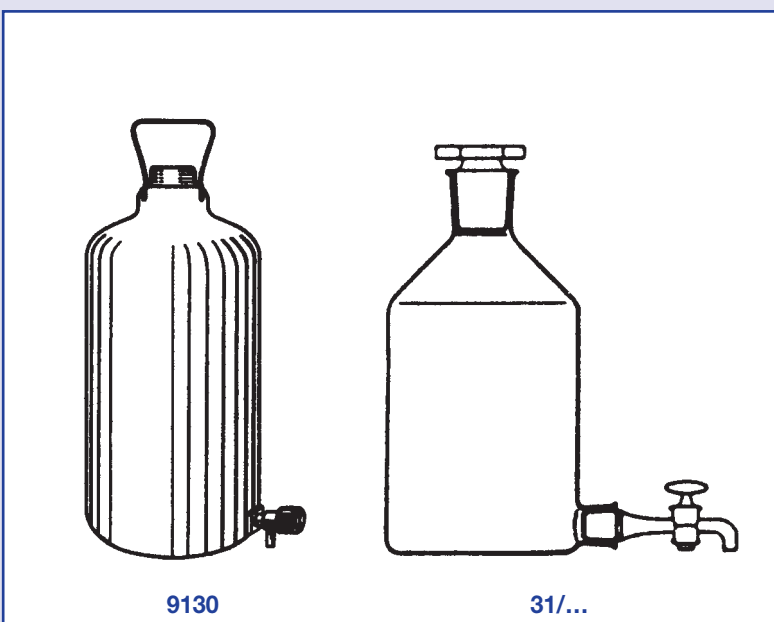
31/... “Assistent” Aspirator bottles of glass, with NS-stopcock and NS-stopper, approx.

Capacity approx.			
	5	10	20 ltrs.
stopcock NS	24/29	29/32	29/32
stopper NS	45/40	50/42	50/42
	31/5	31/10	31/20

9130/... “Assistent” Aspirator bottles of polyethylene, with stopcock, handle and screw cap

Capacity			
5	10	25	50 ltrs.
9130/5	9130/10	9130/25	9130/50

9131 Spare stopcock, for above, of polypropylene, 3/4" connection



General laboratory apparatus



“Assistent” Laboratory Equipment

“Assistent” ASTM-Centrifuge tubes, DURAN®/borosilicate glass 3.3, blue graduation “ASSISTENT-PERMANENT”, ASTM D 96, DIN 51 793

930 cylindrical with conical bottom,

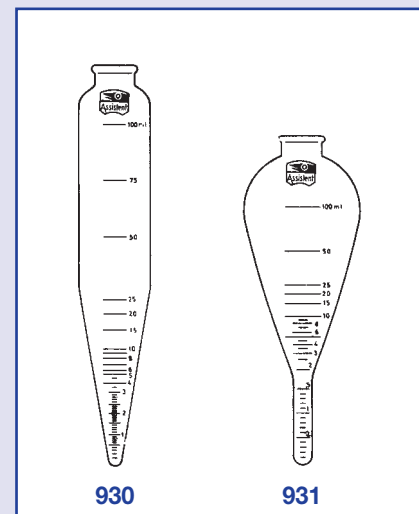
Graduation:

0 – 0,5 ml:	0,05 ml
0,5 – 2 ml:	0,1 ml
2 – 3 ml:	0,2 ml
3 – 5 ml:	0,5 ml
5 – 10 ml:	1,0 ml
10 – 25 ml:	5,0 ml
25 – 100 ml:	25,0 ml

931 pear shape with cylindrical bottom

Graduation:

0 – 1,5 ml:	0,1 ml
1,5 – 3 ml:	0,5 ml
3 – 5 ml:	0,5 ml
5 – 10 ml:	1,0 ml
10 – 25 ml:	5,0 ml
25 – 100 ml:	25,0 ml



2660/... “Assistent” Specimen boxes (museum jars), clear glass, with ground-on coverplate

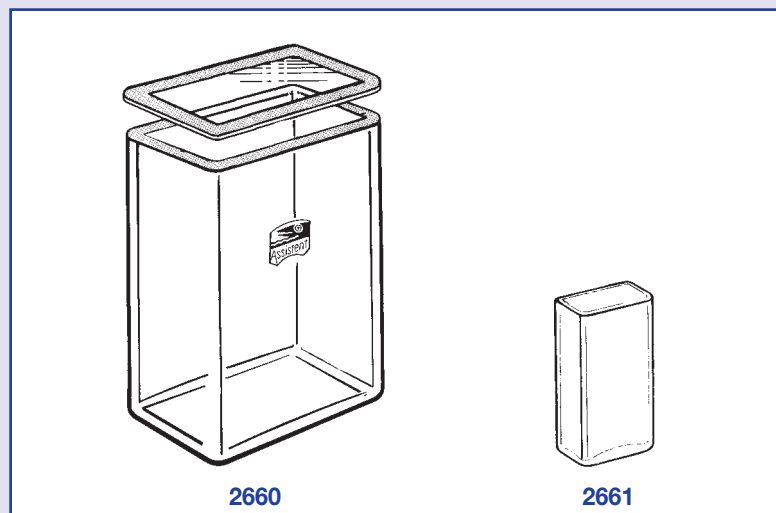
Outs. meas.

Height approx.	100	150	150	160	200 mm
Length approx.	50	80	105	100	130 mm
Width approx.	30	60	50	80	80

2660/2	2660/3	2660/4	2660/5	2660/6
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Height approx.	200	225 mm
Length approx.	130	180 mm
Width approx.	130	80 mm

2660/7	2660/8
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2661 “Assistent” Specimen boxes (museum jars), clear glass, without coverplate height approx. 120 mm, length approx. 105 mm, width approx. 50 mm

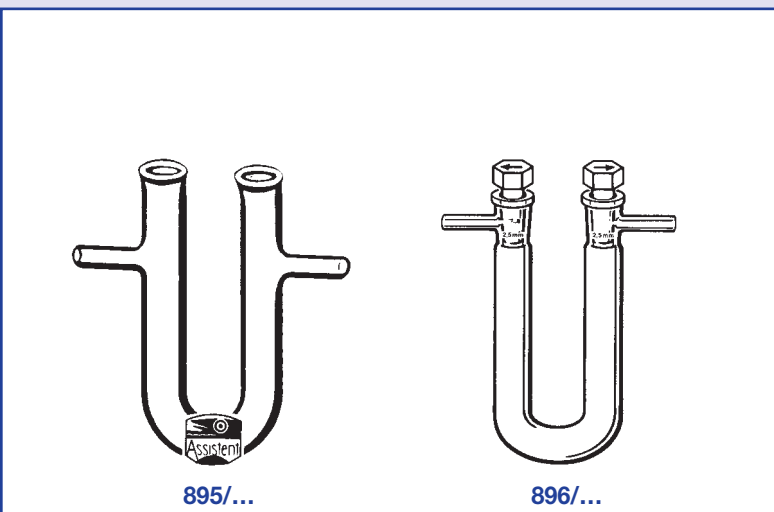
2757/2 “Assistent” Radiometers (light mills) on glass base, low form approx. 12,5 x 8 cm diam.



2757/2



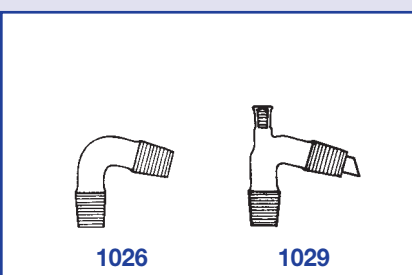
General laboratory apparatus



“Assistent” Laboratory Equipment

895/... “Assistent” Calcium chloride tubes U-shaped, with two side arms
height approx. 100 125 150 mm
 895/10 **895/12** **895/15**

896/... U-shaped, with two side arms and two interchangeable stopper-stopcocks
 896/10 **896/12** **896/15**

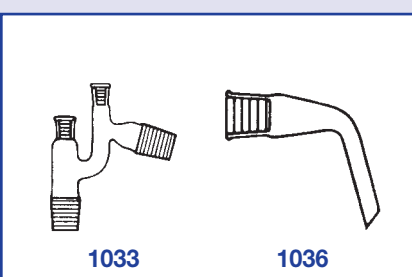


“Assistent” Glass Joints and Distillation Flasks

Recovery bends, DURAN®/borosilicate glass 3.3
distance between the cones: 300 mm

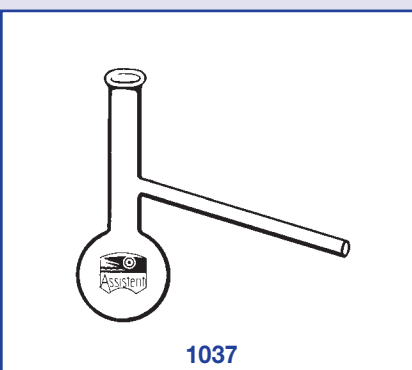
1026 **Bends, 75°** with two cones NS 29/32

Stillheads, DURAN®/borosilicate glass 3.3
1029 **with two cones** NS 29/32
 and socket NS 14/23



1033 **Claisen heads** with two cones NS 29/32
 and two thermometer sockets NS 14/23

1036 **Receiver adapters**, with socket NS 29/32



1037/... **Distilling flasks**, borosilicate glass 3.3, round bottom, with side tube
100 250 500 1000 ml
1037/100 **1037/250** **1037/500** **1037/1000**

General laboratory apparatus



“Assistent” Laboratory Equipment

1042/... Petri dishes of glass

diam. of cover approx.

4	6	8	10	12	15	20 cm
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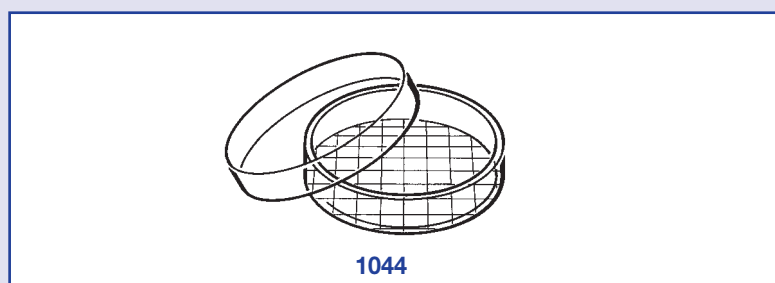
height of base approx.

1,2	1,5	1,5	2	2	2,5	5 cm
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1042/4	1042/6	1042/8	1042/10	1042/12	1042/15	1042/20
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1044 Petri dishes of glass, with grid of 10 mm squares on bottom, approx. 100x20 mm



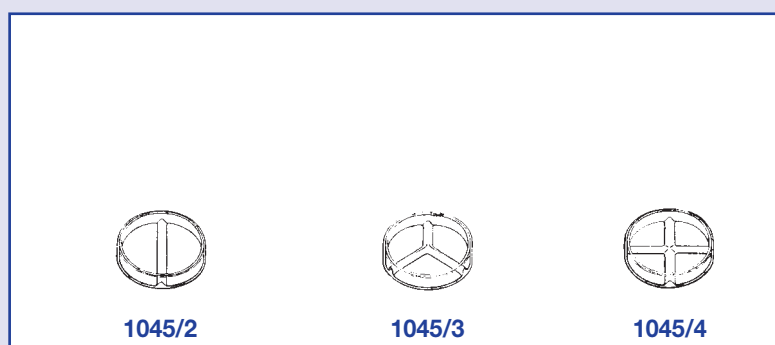
Petri dishes of glass, DURAN®

diam. of cover approx. 10 cm, height of base approx. 2 cm

1045/2 base with 2 equal compartments

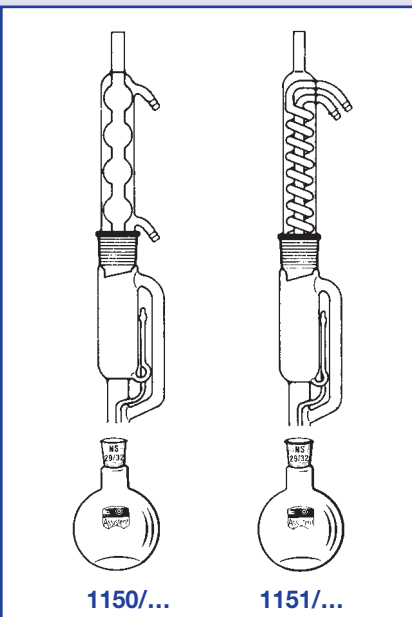
1045/3 base with 3 equal compartments

1045/4 base with 4 equal compartments





General laboratory apparatus



“Assistent” Laboratory Equipment

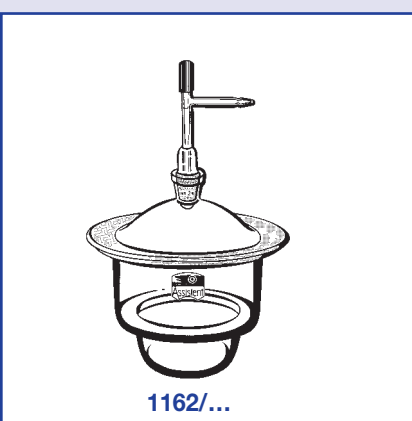
Extraction apparatus acc. to Soxhlet, DURAN®/borosilicate glass 3.3, size of ground and capacity of extractor durably marked

Capacity of extractor ml	30	70	100	150	200	250	300	500	1000
Standard ground of condenser NS	29/32	34/35	45/40	45/40	45/40	45/40	60/46	60/46	71/51
Standard ground of flask NS	29/32	29/32	29/32	29/32	29/32	29/32	29/32	29/32	29/32
Capacity of flask ml	100	100	250	500	500	500	500	1000	2000

1150/... with Allihn condenser	1150/30	1150/70	1150/100	1150/150	1150/200	1150/250	-	-	-
1151/... with Dimroth condenser	1151/30	1151/70	1151/100	1151/150	1151/200	1151/250	1151/300	1151/500	1151/1000

Spare sparts:

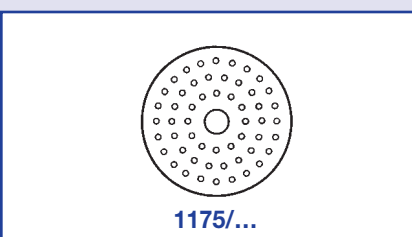
1153/... Allihn condenser	1153/29	1153/34	1153/45	1153/45	1153/45	1153/45	-	-	-
1154/... Dimroth condenser	1154/29	1154/34	1154/45	1154/45	1154/45	1154/45	1154/60	1154/60	1154/71
1155/... Extractors	1155/30	1155/70	1155/100	1155/150	1155/200	1155/250	1155/300	1155/500	1155/1000
1913/... Round bottom flasks	1913/100	1913/100	1913/250	1913/500	1913/500	1913/500	1913/500	1913/1000	1913/2000



Desiccators “Novus”

stress, vacuum density and pressure tested

	10	15	20	25	30 cm
1160/... with interchangeable cover with knob	1160/10	1160/15	1160/20	1160/25	1160/30
1161/... with interchangeable cover with tubulature	-	-	1161/20	1161/25	-
1162/... with standard ground stopcock in the interchangeable cover	-	1162/15	1162/20	1162/25	-
1163/... with interchangeable knob and side tubulature	-	1163/15	1163/20	1163/25	-
1164/... with interchangeable knob and side tubulature,	-	164/15	1164/20	1164/25	-
1175/... Porcelain plates for desiccators, with various small perforations and one large hole in centre	10	15	20	25	30 cm
	1175/10	1175/15	1175/20	1175/25	1175/30



1177/24	standard ground NS 24/29 Stopcocks, interchangeable, for tubulated cover of desiccators
1178/24	standard ground NS 24/29 Stopcocks, interchangeable, for side tubulature of desiccators

General laboratory apparatus



“Assistant” Laboratory Equipment

“Assistant” Filter paper, medium fast,
in boxes of 100 pieces

1250/... sheets

approx. 45x45 58x58 cm
1250/45 **1250/58**

1255/... circles

diam. approx. mm

55	70	90	110
1255/55	1255/7	1255/9	1255/11
125	150	180	
1255/12	1255/15	1255/18	

1260/... folded

diam. approx.

110	125	150	185
1260/11	1260/12	1260/15	1260/18
240	270	320	
1260/24	1260/27	1260/32	

1265/... Filtering flasks, Erlenmeyer shape,
with plastic hose connection and plastic tubulature
DURAN®/borosilicate glass 3.3

250	500	1000	2000 ml
1265/250	1265/500	1265/1000	1265/2000

1266 Assembling set for No. 1265

1270/... “Assistant” Filtering flasks, conical,
with glass hose connection

1270/250	1270/500	1270/1000	1270/2000
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1271/... “Assistant” Filtering jars cylindrical, with spout

capacity	50	100	250 ml
	1271/50	1271/100	1271/250

Filter funnels, DURAN®/borosilicate glass 3.3, porosity 4
volume for disc diam. stem diam.

1272/50	50 ml	35	10
1272/75	75 ml	45	10
1272/500	500 ml	95	22

Other sizes and porosities are also available
discs must be ordered separately.

Filter discs with glass rim, porosity 4

disc diam. mm

1273/924	24
1273/950	50
1273/990	90

Other sizes and porosities are also available
discs must be ordered separately.

Filter heads*, DURAN®/borosilicate glass 3.3,
with funnel and two seals

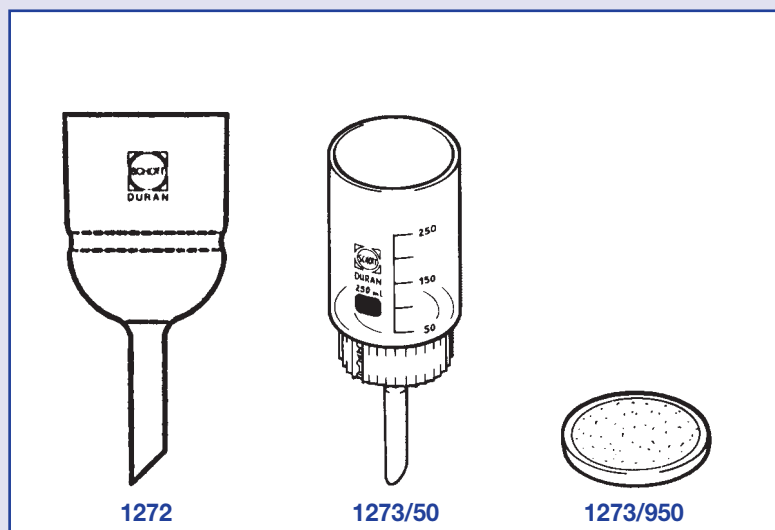
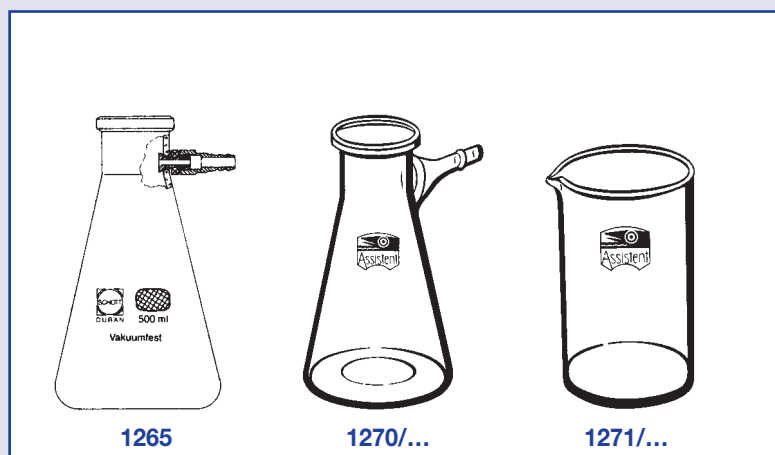
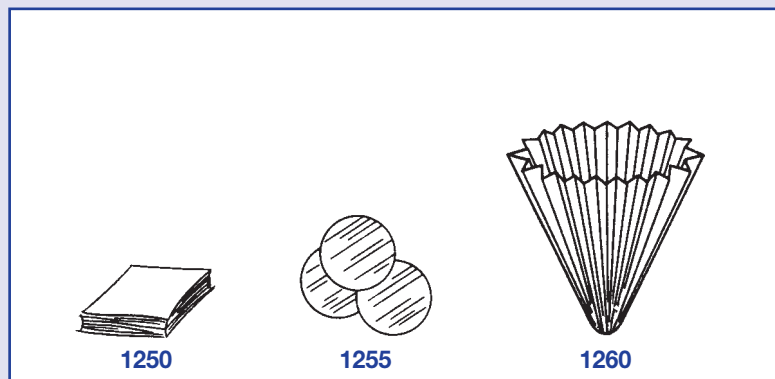
volume for disc diam. mm thread size mm

1273/24	30 ml	24	28
1273/50	250 ml	50	54
1273/90	1000 ml	90	95

* Filter discs must be ordered separately.

We recommend to use filtering flasks with plastic hose con-
nection as these comply with the regulations of the German
laws for security.

Spare parts, and filter discs with other porosities are also
available.





General laboratory apparatus



1278

“Assistent” Reagent Bottles and Accessories

1278/... Self-adhesive labels,
of plastic foil, plain, white, with black border, non-fade, resistant to chemicals

1278/1 for bottles up to approx. 250 ml (ca. 74x37 mm)

1278/2 for bottles up to approx. 500 ml (ca. 105x52 mm)

Protective coating

1278/91 for No. 1278/1

1278/92 for No. 1278/2

Self-adhesive labels with inscription are also available.



1280/... 1282/...



1284/... 1286/...



1290/... 1292/...

“Assistent”-Bottles with conical shoulder, standard ground and stopper

		capacity approx.	50	100	250	500	1000	2000 ml
narrow neck		NS	14,5	14,5	19	24	29	29
1280/...	clear glass, with NS stopper of polyethylene		1280/50	1280/100	1280/250	1280/500	1280/1000	1280/2000
1281/...	clear glass, with NS stopper of glass		1281/50	1281/100	1281/250	1281/500	1281/1000	1281/2000
1282/...	amber glass, with NS stopper of polyethylene		1282/50	1282/100	1282/250	1282/500	1282/1000	1282/2000
1283/...	amber glass, with NS stopper of glass		1283/50	1283/100	1283/250	1283/500	1283/1000	1283/2000
wide neck		NS	24	29	34,5	45	60	60
1284/...	clear glass, with NS stopper of polyethylene		1284/50	1284/100	1284/250	1284/500	1284/1000	1284/2000
1285/...	clear glass, with NS stopper of glass		1285/50	1285/100	1285/250	1285/500	1285/1000	1285/2000
1286/...	amber glass, with NS stopper of polyethylene		1286/50	1286/100	1286/250	1286/500	1286/1000	1286/2000
1287/...	amber glass, with NS stopper of glass		1287/50	1287/100	1287/250	1287/500	1287/1000	1287/2000
with white fired-in label, black inscription and black border								
narrow neck		NS	14,5	14,5	19	24	29	29
1290/...	clear glass, with NS stopper of polyethylene		1290/50	1290/100	1290/250	1290/500	1290/1000	1290/2000
1291/...	clear glass, with NS stopper of glass		1291/50	1291/100	1291/250	1291/500	1291/1000	1291/2000
1292/...	amber glass, with NS stopper of polyethylene		1292/50	1292/100	1292/250	1292/500	1292/1000	1292/2000
1293/...	amber glass, with NS stopper of glass		1293/50	1293/100	1293/250	1293/500	1293/1000	1293/2000

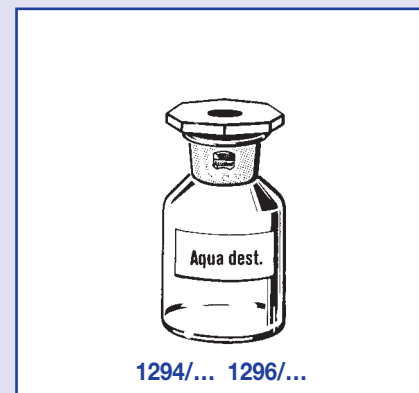
General laboratory apparatus



“Assistent” Reagent Bottles

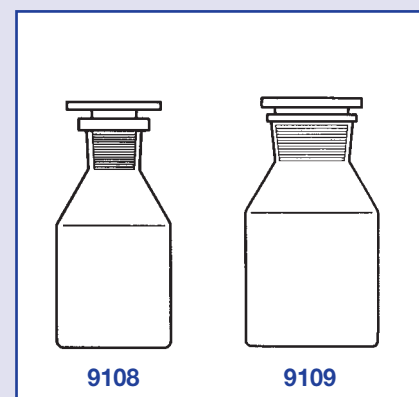
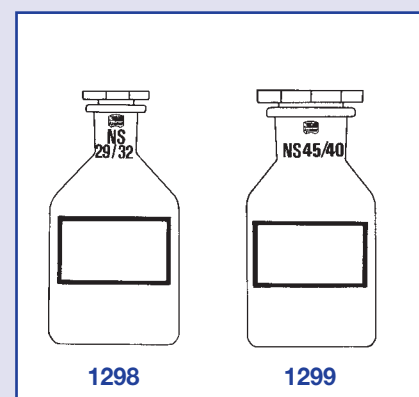
“Assistent” Bottles with conical shoulder, standard ground and stopper, with white fired-in label, black inscription and black border

	capacity approx.	50	100	250	500	1000	2000 ml
NS		24	29	34,5	45	60	60
wide neck							
1294/...	clear glass, with NS stopper of polyethylene						
		1294/50	1294/100	1294/250	1294/500	1294/1000	1294/2000
1295/...	clear glass, with NS stopper of glass						
		1295/50	1295/100	1295/250	1295/500	1295/1000	1295/2000
1296/...	amber glass, with NS stopper of polyethylene						
		1296/50	1296/100	1296/250	1296/500	1296/1000	1296/2000
1297/...	amber glass, with NS stopper of glass						
		1297/50	1297/100	1297/250	1297/500	1297/1000	1297/2000



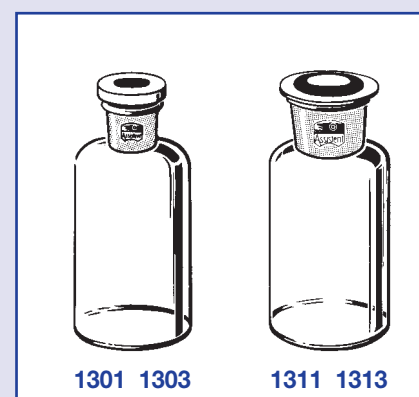
“Assistent” Bottles with conical shoulder, standard ground and stopper with white rectangular enamelled label, with black border, without inscription

	NS	14,5	19	24	29
narrow neck					
1298/...	clear glass, with NS stopper of polyethylene				
		1298/100	1298/250	1298/500	1298/1000
1298/9...	clear glass, with NS stopper of glass				
		1298/9100	1298/9250	1298/9500	1298/9999
	NS	29	34,5	45	60
wide neck					
1299/...	clear glass, with NS stopper of polyethylene				
		1299/100	1299/250	1299/500	1299/1000
1299/9...	clear glass, with NS stopper of glass				
		1299/9100	1299/9250	1299/9500	1299/9999
9108/...	“Assistent”Bottles with conical shoulder, polypropylene, with NS stopper				
	NS	14	19	24	29
	narrow neck	9108/100	9108/250	9108/500	9108/1000
	NS	29	34	45	60
9109/...	wide neck	9109/100	9109/250	9109/500	9109/1000



“Assistent” Bottles with ground-in flat glass stopper

	capacity approx.	50	100	250 ml
1301/...	narrow neck, clear glass	1301/50	1301/100	1301/250
1303/...	narrow neck, amber glass	1303/50	1303/100	1303/250
1311/...	wide neck, clear glass	1311/50	1311/100	1311/250
1313/...	wide neck, amber glass	1313/50	1313/100	1313/250
	capacity approx.	500	1000	2000
1301/...	narrow neck, clear glass	1301/500	1301/1000	–
1303/...	narrow neck, amber glass	1303/500	1303/1000	1303/2000
1311/...	wide neck, clear glass	1311/500	1311/1000	–
1313/...	wide neck, amber glass	1313/500	1313/1000	1313/2000





General laboratory apparatus



1314 1315 1316

“Assistent” Reagent Bottles

“Assistent” Bottles with ground-in flat glass stopper

Pipette-bottles and accessories

1314/... Dropping bottles, amber glass, thread DIN 18
 sizes 5 10 20 30 50 100 ml
 .../5 .../10 .../20 .../30 .../50 .../100

1315/... Pipette closures consisting of screw cap, suction bulb (blue or red colour) and glass pipette, for bottle

sizes 5 10 20 30 50 100 ml
 .../5 .../10 .../20 .../30 .../50 .../100

Dropping closures DIN 18

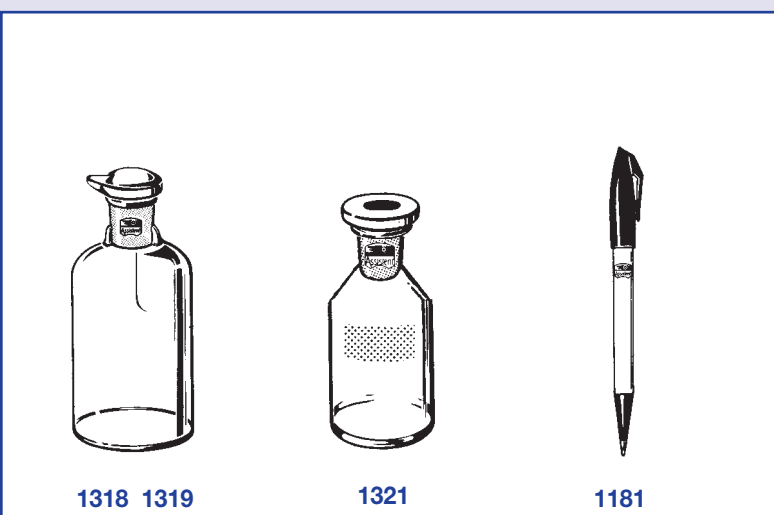
1316/1 UNI 1, fast dropping, 4 holes, white or red
1316/2 UNI 2, slow dropping, 2 holes, white or red
1316/3 Originally secured, white, red, yellow or black
1316/4 With children security, white

Dropping bottles TK, with ground-in flat stopper

	capacity approx.	50	100 ml
1318/...	clear glass	1318/50	1318/100
1319/...	amber glass	1319/50	1319/100

1321 Bottles, narrow neck, with conical shoulder and NS plastic stopper, clear glass, approx. 50 ml, with frosted label for inscription

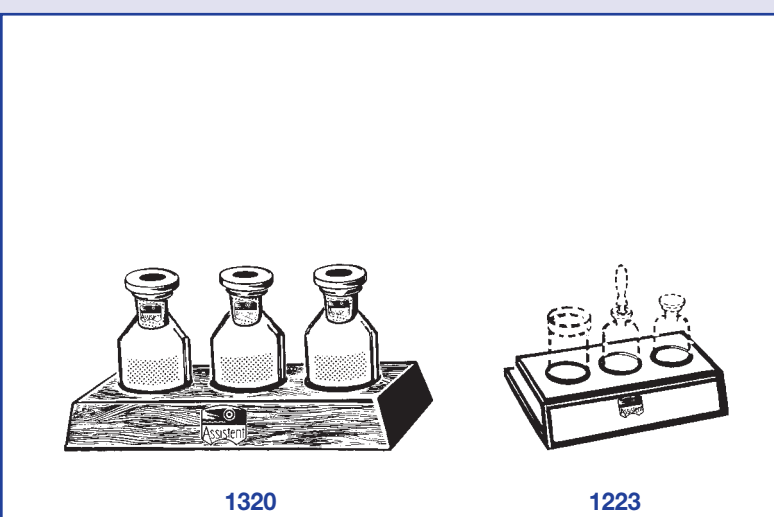
1181 “Assistent” Felt-tip pens, for marking glass, blue, red or black



1318 1319

1321

1181



1320

1223

1320 Wooden stands with 3 narrow neck bottles No. 1321

1223 Staining stands of Plexiglas®, for bottles 50 ml (without bottles)

General laboratory apparatus

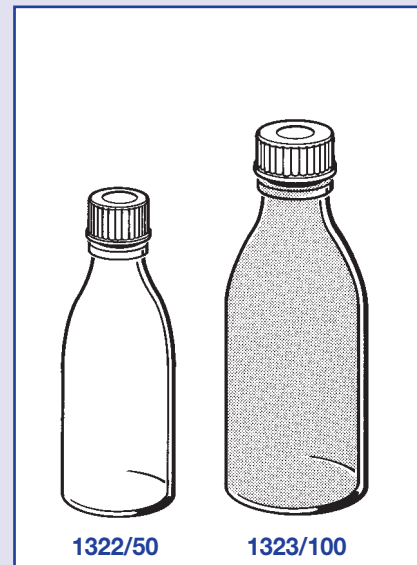


“Assistent” Screw Cap Bottles

“Assistent” Narrow neck bottles with thread and screw cap

1322/...	clear glass	capacity approx. ml/thread GL		
		30/18	50/18	100/22
		1322/30	1322/50	1322/100
		capacity approx. ml/thread GL		
		250/22	500/25	1000/28
		1322/250	1322/500	1322/1000

1323/...	amber glass	capacity approx. ml/thread GL			
		30/18	50/18	100/22	200/22
		1323/30	1323/50	1323/100	1323/200
		capacity approx. ml/thread GL			
		250/22	500/25	1000/28	
		1323/250	1323/500	1323/1000	



“Assistent” Wide neck bottles with thread and screw cap

1324/...	clear glass	capacity approx. ml/thread GL						
		25/28	30/32	50/32	75/40	100/40	125/40	150/45
		1324/25	1324/30	1324/50	1324/75	1324/100	1324/125	1324/150
1325/...	amber glass	capacity approx. ml/thread GL						
		25/28	30/32	50/32	75/40	100/40	125/40	150/45
		1325/25	1325/30	1325/50	1325/75	1325/100	1325/125	1325/150

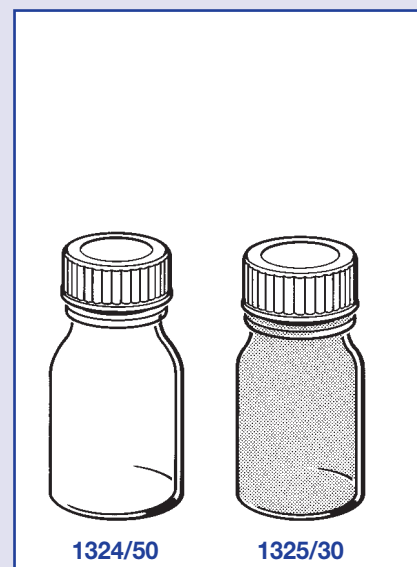
1324/...	clear glass	capacity approx. ml/thread GL				
		200/55	250/55	300/55	500/55	1000/68
		1324/200	1324/250	1324/300	1324/500	1324/1000
1325/...	amber glass	capacity approx. ml/thread GL				
		200/55	250/55	300/55	500/55	1000/68
		1325/200	1325/250	1325/300	1325/500	1325/1000

Screw-caps for no. 1322/...–1325/... are heat-resistant up to 110 °C.

1330/...	Reagent bottles, DURAN®/borosilicate glass 3.3 graduated with ISO thread GL 45, without screw cap	capacity approx.					
		50 (GL32)	100	250	500	1000	2000ml
		1330/50	1330/100	1330/250	1330/500	1330/1000	1330/2000

- 1335** Pouring rings of polypropylene, thread GL 45, resistant up to 135 °C for bottles as of 100 ml
- 1335/32** thread GL 32, for bottles of 50 ml
- 1336** Screw cap of polypropylene, thread GL 45, with seal, resistant up to 135 °C, white, for bottles as of 100 ml (also in red or blue available),
- 1336/32** thread GL 32, for bottles of 50 ml, also available in
red, PBT, resistant up to + 180 °C
blue, PP, resistant up to + 135 °C

11330/...	Reagent bottles, borosilicate glass 3.3 graduated, acc. to DIN with blue screw cap and pouring ring	capacity		
		100	250	500
		11330/100	11330/250	11330/500
		1000	2000	5000 ml
		11330/1000	11330/2000	11330/5000





General laboratory apparatus



1390/1 1390/2

1391/1 1391/2

1393/1 1393/2

“Assistent” Bunsen Burners and Accessories

Bunsen burners with air regulation

1390/1 for natural gas

1390/2 for propane/butane gas

Bunsen burners with stopcock and pilot flame

1391/1 for natural gas

1391/2 for propane/butane gas

Burners acc. to Teclu with stopcock and pilot flame

1393/1 for natural gas

1393/2 for propane/butane gas



1385



1395

1385 All-gas Bunsen burners

with air regulation – gas fine regulation for the used gas kind by turning the burner tube

1395 “LABOGAZ” burner, new model without cartridge

1395/1 Cartridge of butane gas for No. 1395, with safety valve (cartridge may be disconnected without security risk provided burner is not operating) capacity approx. 450 g (approx. 880 ml)



1396



1396/1

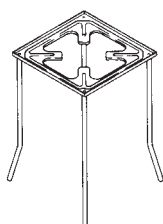
1396 LABOGAZ burner,

with new assembling-system for more security, without cartridge

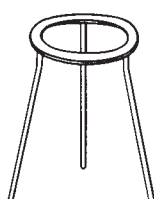
1396/1 Cartridge of butane gas for Nr. 1396, capacity approx 190 g



1066



1067



1090 1091

1066/... Laboratory protection plates of CERAN®

approx. 135 x 135 155 x 155 175 x 175 mm

1066/1 1066/2 1066/3

1067/ Quadrupods of chrome-nickel steel for above

1067/1 1067/2 1067/3

1090 Tripods of galvanized steel

height approx. 21 cm, diam. of ring approx. 14 cm

1091 height approx. 28 cm, diam. of ring approx. 17 cm (suitable for burners No. 1395 and 1396)

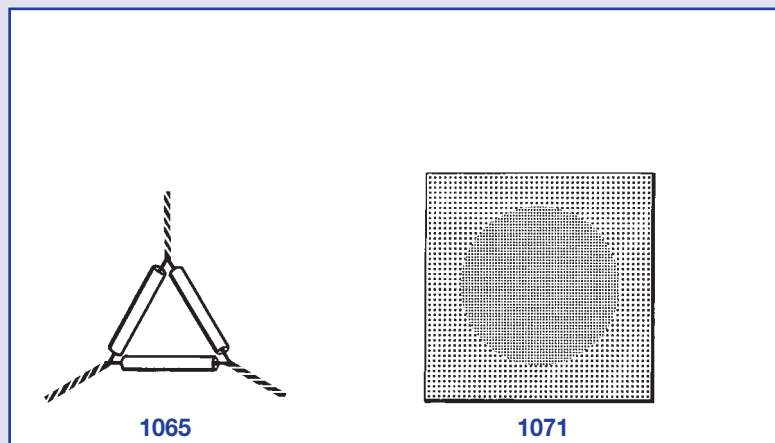
General laboratory apparatus



“Assistent” Laboratory Equipment

1065/... Triangles of iron wire with plain clay tubes
 Length approx. 4 6 8 10 cm
 .../4 .../6 .../8 .../10

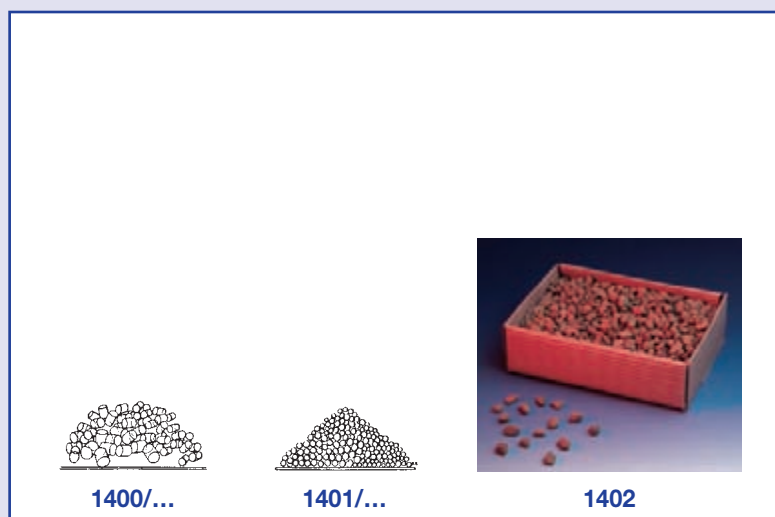
1071/... Iron wire gauzes with ceramic centre
 approx. 12x12 16x16 20x20 cm
 .../12 .../16 .../20



1400/... “Assistent” Raschig rings of clear glass,
 packs of 1 kg
 approx. mm
 3x3 4x4 5x5 6x6 7x7
1400/3 1400/4 1400/5 1400/6 1400/7
 8x8 10x10
1400/8 1400/10

1401/... “Assistent” Glass beads, solid, spherical,
 clear glass, packs of 1 kg
 diam. approx. mm
 1 2 3 4 5
1401/1 1401/2 1401/3 1401/4 1401/5
 6 7 8 10
1401/6 1401/7 1401/8 1401/10

1402 Boiling stones, grade A, especially for vacuum
 distillations, package of 250 grs.



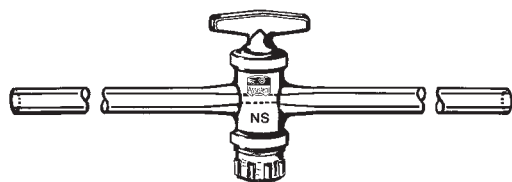
“Assistent” Glass wool, superfine (filter glass wool)

1408/1 cellophane bags, small package (approx. 10 g)
1408/2 cardboard boxes, normal package (approx. 30 g)
1408/3 cardboard boxes of 1 kg

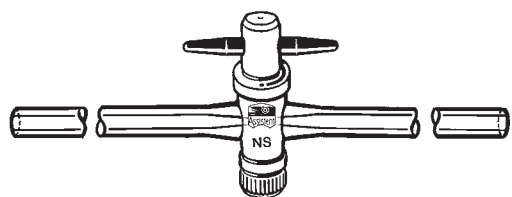




General laboratory apparatus



1503/...



1504/...



1517/...



1480/35

“Assistent” Glass Stopcocks

“Assistent”-Stopcocks, with interchangeable standard ground plugs, strong quality, reinforced sheils and side arms, with reliable retaining device (screw cap or rubber cap). The sizes 1,5 cap and 2,5 cap are with capillary side arms.

“Assistent” One-way stopcocks DIN 12541

DURAN®/borosilicate glass 3.3, with interchangeable safety plug

1503/... with NS glass plug

1504/... with NS plug of PTFE

NS plug	Plug mm Ø	NS-glass plug solid	NS of PTFE
12,5	1,5 cap.	1503/71	1504/71
14,5	2,5 cap.	1503/72	1504/72
12,5	1,5	1503/1	1504/1
14,5	2,5	1503/2	1504/2
18,8	4	1503/4	1504/4
21,5	6	1503/6	1504/6
24	8	1503/8	1504/8

1517/... “Assistent” Safety needle-valve stopcocks

DURAN®/borosilicate glass 3.3 with spindle of PTFE, precise control of liquid flow

1517/2 bore 2,5 mm,

1517/4 bore 4 mm

“Assistent” One-way stopcocks AR®/soda glass, NS 12,5 bore 1,5 mm

1510 with NS glass plug, solid

1511 with NS plug of PTFE

1480/35 silicone stopcock grease

medium viscosity, consistency is retained at temperatures of -50 +150 °C, tubes of 35 g

General laboratory apparatus

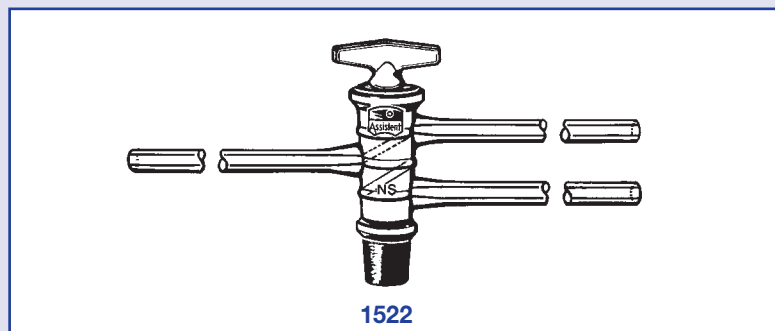


“Assistent” Glass Stopcocks with Interchangeable Plugs

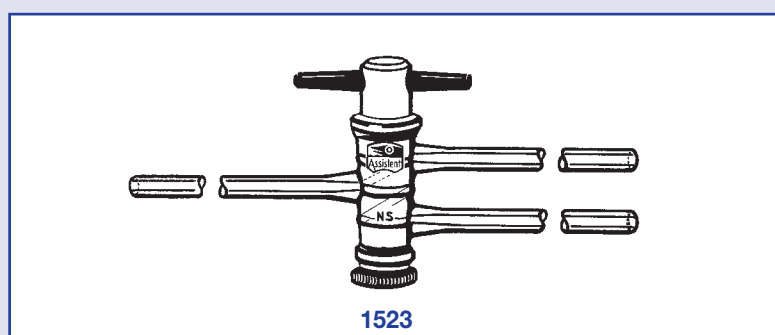
“Assistent” Two-way stopcocks (patent stopcocks)

with double oblique bore NS 14,5 mm, bore 2,5 mm

- 1522** DURAN®/borosilicate glass 3.3
with solid NS glass plug



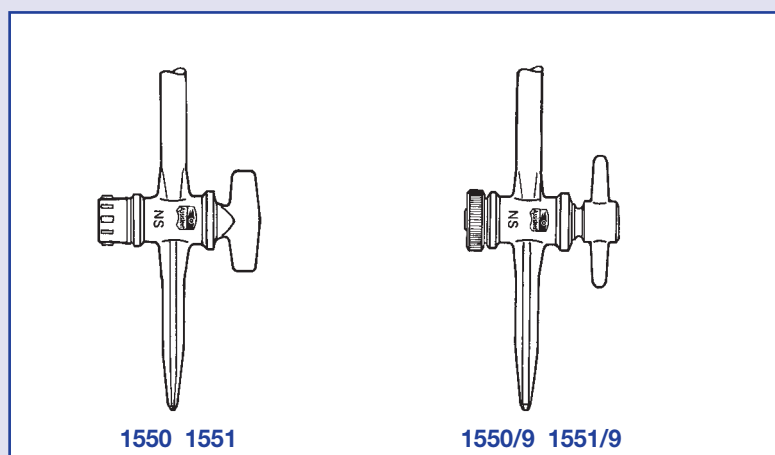
- 1523** DURAN®/borosilicate glass 3.3
with NS plug of PTFE



“Assistent” Burette stopcocks

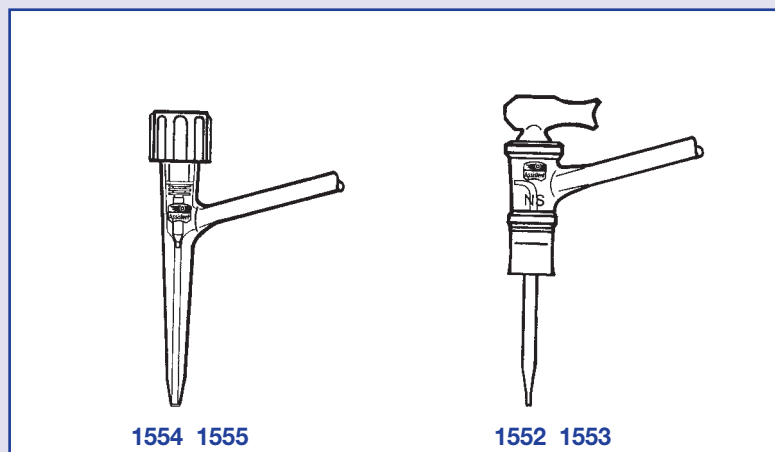
with interchangeable standard ground plugs
NS 12,5 mm, bore 1,5 mm

- 1550** straight, AR®-/soda glass, with NS glass plug
1550/9 straight, AR®-/soda glass, with NS plug of PTFE
1551 straight, DURAN®/borosilicate glass 3.3
with NS glass plug
1551/9 straight, DURAN®/borosilicate glass 3.3
with NS plug of PTFE
1552 lateral, AR®-/soda glass, with NS glass plug
1553 lateral, DURAN®/borosilicate glass 3.3
with NS glass plug



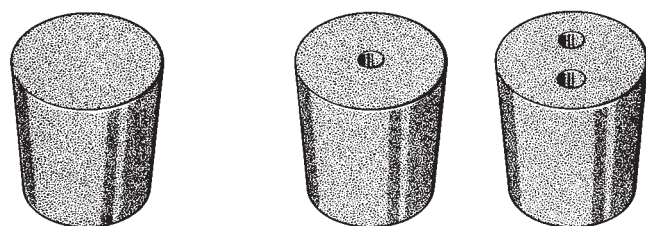
“Assistent” Safety needle-valve stopcock with spindle of PTFE, for burettes

- 1554** AR®-/soda glass
1555 DURAN®/borosilicate glass 3.3





General laboratory apparatus



1590

1591

“Assistent” Laboratory Equipment

1590/... Rubber stoppers, solid
1591/... with hole(s)

solid	top diam. mm	bottom diam. mm	height mm	with hole(s)	diam. of hole(s) mm	nombre
1590/8	8	4	20			
1590/9	9	5	20			
1590/128	12	8	20			
1590/129	12	9	19			
1590/15	14,5	10,5	20			
1590/17	17	12	25	1591/17	5	1
1590/18	18	14	20	1591/18	5	1
1590/22	22	17	25			
1590/24	24	18	30			
1590/27	27	21	30	1591/27	6	2
1590/32	32	26	30	1591/32	6	2
1590/35	35	29	30	1591/35	6	2
1590/38	38	31	35			
1590/41	41	34	35	1591/41	6	2
1590/44	44	36	40			
1590/49	49	41	40			
1590/55	55	47	40	1591/55	8	2
1590/60	59,5	50,5	45			
1590/65	65	56	45			
1590/75	75,5	64,5	55			
1590/83	83	71	60			
1590/92	92	79	65			

Rubber stoppers in all sizes are available with bore(s) as well.



1594/...

1594/... Cork stoppers, highest quality for medical purposes

Size	top diam. mm	bottom diam. mm	height mm
1594/9	9	6	17
1594/13	13	10	22
1594/14	14	11	22
1594/15	15	12	22
1594/16	16	13	22
1594/18	18	15	22
1594/19	19	16	23
1594/20	20	17	26
1594/22	22	18	26
1594/23	23	19	26
1594/30	30	26	27
1594/36	36	32	27
1594/40	40	36	27

General laboratory apparatus



“Assistent” Laboratory Equipment

956 Cellulose stoppers for test tubes and centrifuge tubes of 16–17 mm diam. (Other sizes of cellulose stoppers are also available.)

Laboratory tubing

1580/... red rubber

1581/... PVC, transparent, temperature resistant up to +60 °C

1582/... silicone, transparent, natural-coloured, temperature resistance from –60 °C up to +220 °C

	ins. diam.			(x wall) mm	
1580	4 (x1)	6 (x1,5)	8 (x2)	10 (x2)	12 (x2,5)
1581	4 (x1,5)	6 (x1,5)	8 (x1,5)	10 (x2)	12 (x2)
1582	4 (x1)	6 (x1,5)	8 (x2)	10 (x2)	12 (x2)



956



1580 1581 1582

1586/... Tubing clamps with thumb screw, stainless steel

	for tubing of		for tubing of
1586/10	10 mm	1586/21	21 mm
1586/12	12 mm	1586/22	22 mm
1586/14	14 mm	1586/25	25 mm
1586/17	17 mm	1586/27	27 mm
1586/19	19 mm	1586/30	30 mm

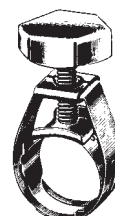
1593/... Cork borer set of nickel-plated brass, with handles.

1593/6 set of 6 borers, for holes of 5–11 mm diam.

1593/12 set of 12 borers, for holes of 5–19 mm diam.

1596 Rubber policeman, spade-shaped

2850/206 Glass rods for above approx. 200 mm x 6 mm diam.



1586



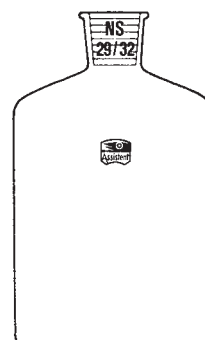
1596 2850/206



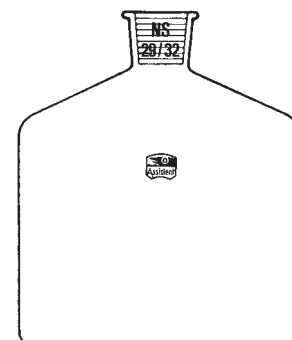
1593

Bottles with standard ground NS 29/32, uniform height: 200 mm

	capacity	1000	2000 ml
1916/...	clear glass	1916/1000	1916/2000
1917/...	amber glass	1917/1000	1917/2000



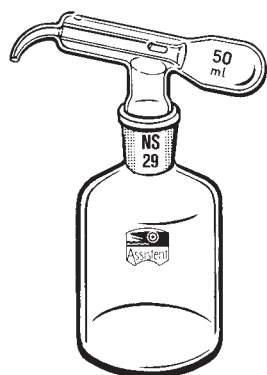
1916/1000 1917/1000



1916/2000 1917/2000



General laboratory apparatus



1875/50



1912

“Assistent” Automatic Pipettes

“Assistent” Automatic tilting pipettes

1875/... with bottle 1000 ml with standard ground NS 29/32

capacity ml
5 10 20 25 50 100

1875/5 1875/10 1875/20 1875/25 1875/50 1875/100

1877/... Spare pipetting heads, DURAN®/borosilicate glass 3.3, with standard ground NS 29/32

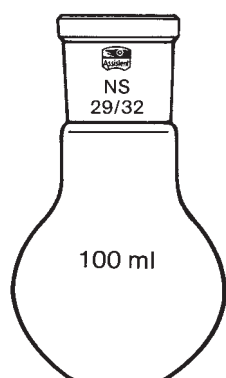
capacity ml
5 10 20 25 50 100

1877/5 1877/10 1877/20 1877/25 1877/50 1877/100

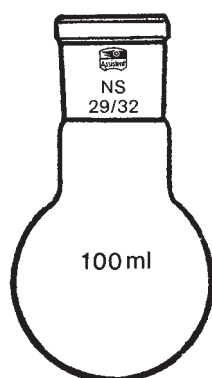
Intermediate sizes are also available.

1916/1000 Spare bottles, capacity 1000 ml, with standard ground NS 29

1912 Brushes, flexible, for flasks with standard ground as of NS 29/32



1911



1913

Flasks, DURAN®/borosilicate glass 3.3, with standard ground, reinforced ground neck marked with standard ground size, without stopper

1911/... flat bottom

capacity ml
50 100 100 250 500 1000 2000

NS
29/32 19/26 29/32 29/32 29/32 29/32 29/32

.../50 .../119 .../100 .../250 .../500 .../1000 .../2000

1913/... round bottom

capacity ml
50 50 50 100 100 100

NS
14/23 19/26 29/32 14/23 19/26 29/32

.../514 .../519 .../50 .../114 .../119 .../100

capacity ml
250 250 500 1000 2000 2000

NS
29/32 45/40 29/32 29/32 29/32 45/40

.../250 .../2545 .../500 .../1000 .../2000 .../2045

1910/... Blue glass plates

approx. 5x5 5x10 10x10 cm
1910/5 1910/510 1910/10

1914/... Cork rings

1914/1 for round bottom flasks of 10 to 100 ml

1914/2 for round bottom flasks of 250 to 500 ml

1914/3 for round bottom flasks of 500 to 1000 ml



1910/...



1914

General laboratory apparatus



Mixer

Magnetic stirrer

Handmixer

Rotating mixer

Test tube shaker

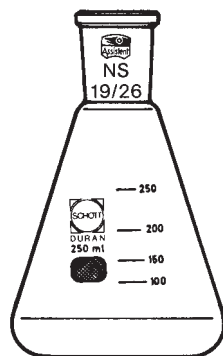




General laboratory apparatus

“Assistent” Erlenmeyer Flasks and Bottles with Standard Ground

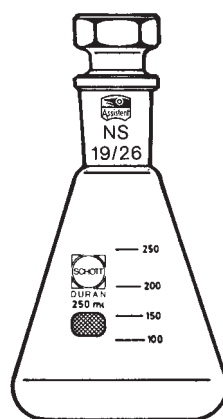
1915/... Erlenmeyer flasks DURAN®/borosilicate glass 3.3, graduated with standard ground, reinforced ground neck marked with standard ground size, without stopper.



1915

capacity	25	50	50	100	100	200 ml
NS	14/23	19/26	29/32	19/26	29/32	29/32
	.../25	.../519	.../50	.../119	.../100	.../200

capacity	250	250	300	500	500	1000	1000	2000 ml
NS	29/32	45/40	29/32	29/32	45/40	29/32	45/40	29/32
	.../250	.../2545	.../300	.../500	.../5045	.../1000	.../1045	.../2000



1918

1918/... with hollow NS glass stopper

capacity	25	50	100	100	200 ml
NS	14/23	29/32	19/26	29/32	29/32
	.../25	.../50	.../119	.../100	.../200

capacity	250	300	500	1000 ml
NS	29/32	29/32	29/32	29/32
	.../250	.../300	.../500	.../1000

1920/... Flasks, of Borosilicate glass 3.3, pear shape round bottom, standard ground (NS), volume indication and label

/5	5 ml	NS 14,5/23
/1014	10 ml	NS 14,5/23
/1019	10 ml	NS 19/26
/12	12 ml	NS 14,5/23
/2514	25 ml	NS 14,5/23
/2519	25 ml	NS 19/26
/514	50 ml	NS 14,5/23
/519	50 ml	NS 19/26
/50	50 ml	NS 29/32
/119	100 ml	NS 19/26
/100	100 ml	NS 29/32
/250	250 ml	NS 29/32
/500	500 ml	NS 29/32
/1000	1000 ml	NS 29/32
/2000	2000 ml	NS 29/32
/3000	3000 ml	NS 29/32

1921/... Flasks, of Borosilicate glass 3.3, pointed shape

/5	5 ml	NS 14,5/23
/10	10 ml	NS 14,5/23
/25	25 ml	NS 14,5/23
/50	50 ml	NS 14,5/23



1920



1921

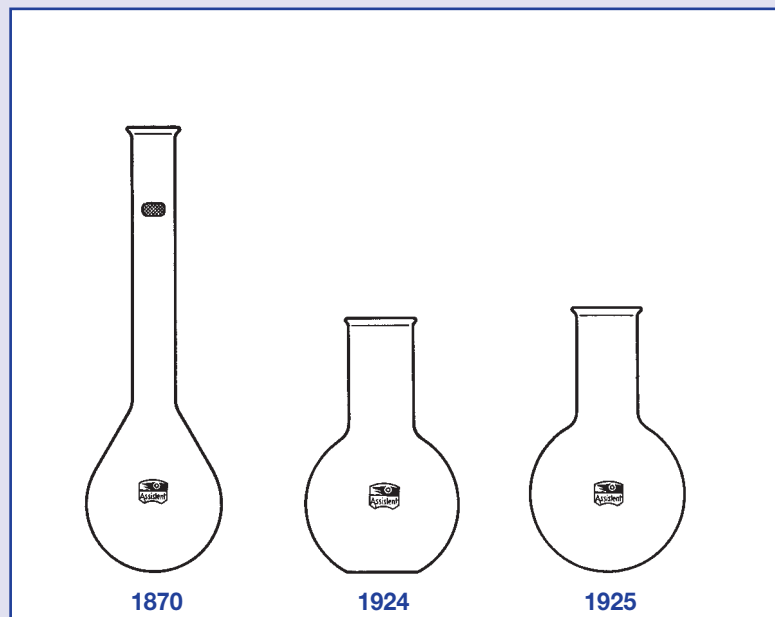
General laboratory apparatus



“Assistent” Beakers and Flasks

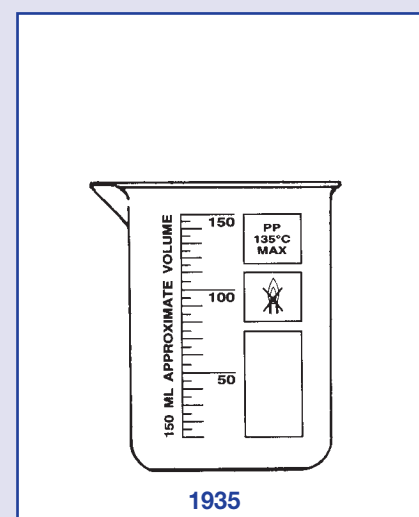
Flasks, with rim, DURAN®/borosilicate glass 3.3,
without standard ground
capacity 50 100 250 500 1000 2000 ml

1870/...	Kjeldahl flasks DIN 12 360					
-	-	.../250	.../500	-	-	
1924/...	Flat bottom flasks DIN ISO 1773					
	narrow neck	.../50	.../100	.../250	.../500	.../1000 .../2000
1925/...	Round bottom flasks DIN ISO 1773					
	narrow neck	.../50	.../100	.../250	.../500	.../1000 .../2000



1935/... **Beakers of polypropylene** (Griffin beakers),
for the daily use in the laboratory, low form, high
transparency, antistatic material, with rim and spout,
printed blue scale, ISO 7056 and DIN 12 331 (glass).
Max. temperature for use: + 135 °C,
suitable for steam-sterilization + 121 °C

Volume approx. ml	division ml	Height approx. mm	diam. approx. mm	No.
10	2	35	25	1935/10
25	1	47	31	1935/25
50	5	60	40	1935/50
100	5	70	49	1935/100
150	5	80	56	1935/150
250	5	94	68	1935/250
400	10	109	77	1935/400
600	25	125	91	1935/600
800	100	136	98	1935/800
1000	50	149	102	1935/1000
2000	100	183	133	1935/2000
3000	200	217	174	1935/3000
5000	500	248	185	1935/5000

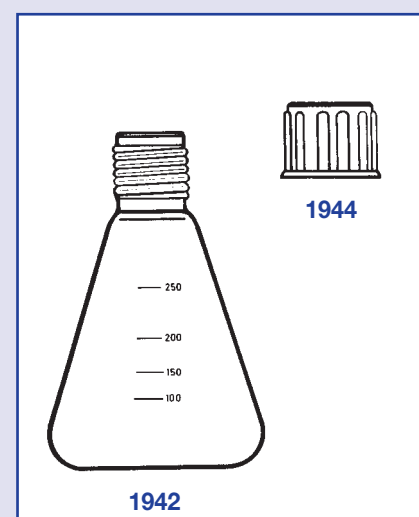


1942/... **Erlenmeyer flasks**, narrow neck
DURAN®-/borosilicate glass 3.3,
graduated, with thread, without screw cap
capacity 100 250 500 1000 ml
1942/100 1942/250 1942/500 1942/1000

1944/... **Plastic screw caps**
with PTFE-coated liner

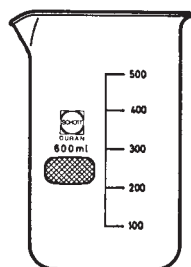
1944/2 **thread GL 25** for Erlenmeyer flasks of 100 ml

1944/3 **thread GL 25** for Erlenmeyer flasks of 250,
500 and 1000 ml

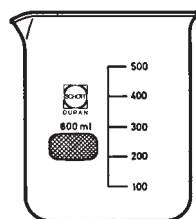




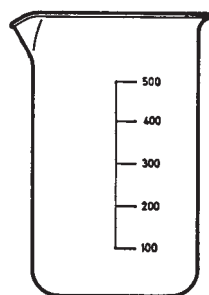
General laboratory apparatus



1929



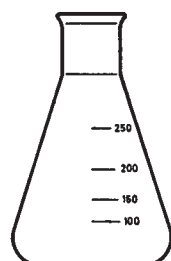
1930



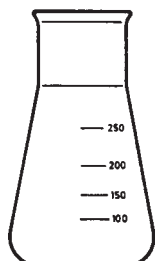
11929/...



11930/...



1940/... 11940/...



1941/... 11941/...

Beakers, graduated, tall form, DIN 12331

Duran®	Boro 3.3	ml	d	h mm
–	11929/25	25		
1929/50	11929/50	50	38	70
1929/100	11929/100	100	48	80
1929/150	11929/150	150	54	95
1929/250	11929/250	250	60	120
1929/400	11929/400	400	70	130
1929/600	11929/600	600	80	150
1929/800	11929/800	800	90	175
1929/1000	11929/1000	1000	95	180
1929/2000	11929/2000	2000	120	240

Beakers, graduated, low form, DIN 12331

Duran®	Boro 3.3	ml	d	h mm
1930/25	11930/25	25	34	50
1930/50	11930/50	50	42	60
1930/100	11930/100	100	50	70
1930/150	11930/150	150	60	80
1930/250	11930/250	250	70	95
1930/400	11930/400	400	80	110
1930/600	11930/600	600	90	125
1930/800	11930/800	800	100	135
1930/1000	11930/1000	1000	105	145
1930/2000	11930/2000	2000	132	185
1930/3000	11930/3000	3000	152	210
1930/5000	11930/5000	5000	170	270

Erlenmeyer flasks, graduated, narrow neck DIN ISO 1773

Duran®	Boro 3.3	ml	d	d ₁	h mm
1940/25	11940/25	25	42	22	75
1940/50	11940/50	50	51	22	90
1940/100	11940/100	100	64	22	105
1940/200	11940/200	200	79	34	131
1940/250	11940/250	250	85	34	145
1940/300	11940/300	300	87	34	156
1940/500	11940/500	500	105	34	180
1940/1000	11940/1000	1000	131	42	220
1940/2000	11940/2000	2000	166	50	280
1940/3000	11940/3000	3000	187	51	310
1940/5000	11940/5000	5000	220	51	365

Erlenmeyer flasks, graduated, wide neck DIN 12385

Duran®	Boro 3.3	ml	d	d ₁	h mm
1941/25	11941/25	25	43	31	70
1941/50	11941/50	50	51	34	85
1941/100	11941/100	100	64	34	105
1941/200	11941/200	200	79	50	131
1941/250	11941/250	250	85	50	140
1941/300	11941/300	300	87	50	156
1941/500	11941/500	500	105	50	175
1941/1000	11941/1000	1000	131	50	220
1941/2000	11941/2000	2000	153	72	276

d = diameter, d₁ = neck diameter, h = height

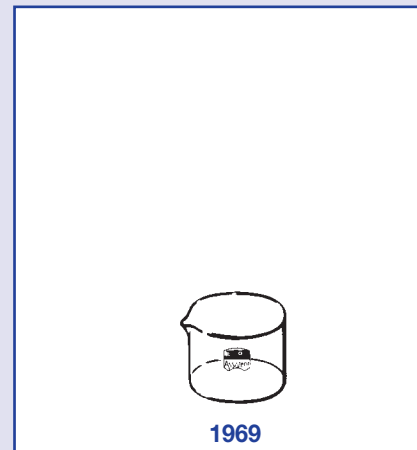
General laboratory apparatus



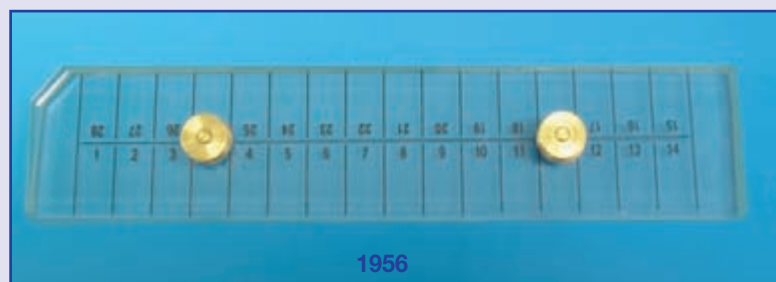
«Assistent» Laboratory Equipment

1969/... «Assistent» Crystallizing dishes cylindrical, flat bottom, with spout

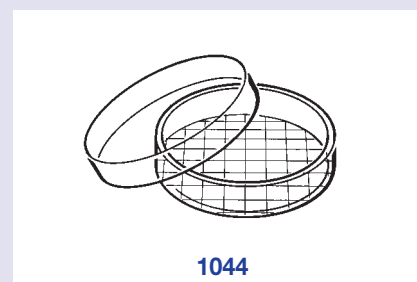
diam. outs.	40	50	60 mm
height	25	30	35 mm
	1969/40	1969/50	1969/60
diam. outs.	70	80	95 mm
height	40	45	55 mm
	1969/70	1969/80	1969/95



1956/28 «Assistent» Glass plates for meat inspection (to check for trichinae, with 28 fields)



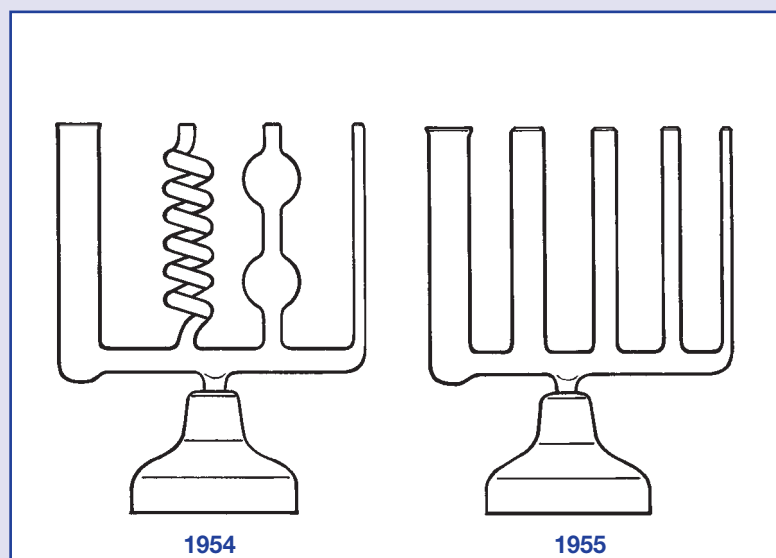
1044 Petri dishes of glass, with grid of 10 mm squares on bottom, approx. 10x2 cm



«Assistent» Communicating tubes on wooden base (teaching aid)

1954 with 4 different tubes

1955 with 5 different tubes





General laboratory apparatus



1974

“Assistent” Timers and Stopwatches

1974 Interval timer
with alarm, for hanging, standing or lying, available in different colours, up to 60 minutes

1974/1 Interval timer
with alarm, for hanging, standing or lying, colours white, up to 120 minutes, white



1977

1977 Digital interval timer, CE
quartz-controlled, up to 99 minutes 59 seconds, with alarm, magnet and battery, white and silver



1977/1



1977/2

1977/1 Digital interval timer, CE
table model, quartz-controlled, up to 99 minutes 59 seconds, with alarm, magnet and battery, silver

1977/2 Quartz multi-function, CE
6-digit LCD display, with clip, stand, magnetic attachment and battery 1,5 V
– clock function for time of day
– stopwatch function 23 h 59 min 59 sec
– interval timer covering a period of up to 23 h 59 min 59 sec, with alarm



1977/3

1977/3 Quartz interval timer, CE
standard time, digital stop watch for counting upwards, two different timer channels, programmable for 99h, 59 min, 59 sec.

General laboratory apparatus



- 1977/4 Digital Interval timer,**
count down with acoustic signal
(99 min., 59 sec.), memory



1977/4

- 1978 Stopwatch**
7 jewels, metal case main dial 0–60 sec:
1/5 and 1/100 min subsidiary dial 0–30 min start,
stop and reset by crown



1978

- 1979 Stopclock,** CE
quarz controlled, electronic analogous table/wall
model, clear dial, with luminous minute-hand and
pointers
outer scale: 0–60 sec. + 0–60 min.
inner scale: 0–100/100 min.



1979

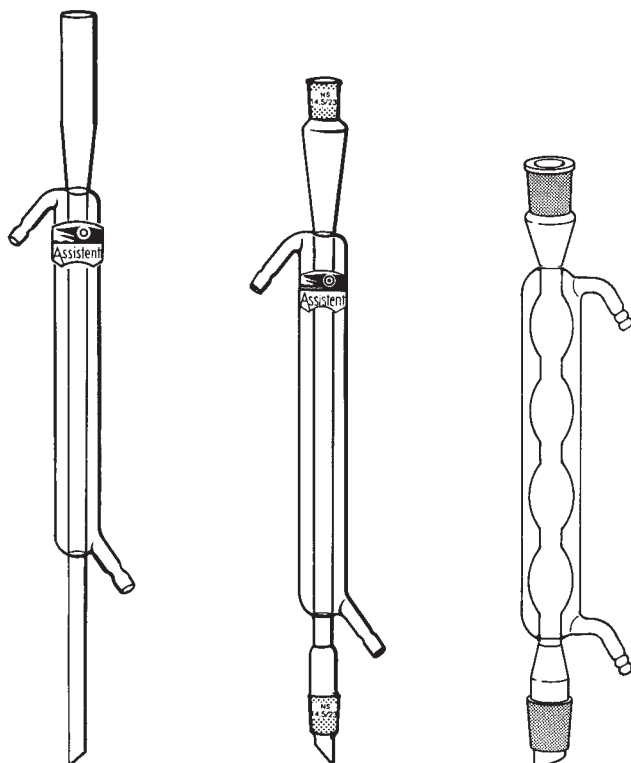
- 1980 Digital stopwatch, electronic,** CE
Multi-Function stop watch
Features:
Chronograph (1/100S)
Split-Function/Intermediate time (LAP)
In normal time (month, date, day, hr, min, sec)
Measuring range: 59 min., 59 sec., 99/100 sec.



1980



General laboratory apparatus



1981/...

1982/...

1987/2529

“Assistent” Condensers

“Assistent” Condensers, DURAN®/borosilicate glass 3.3, without standard ground

length of jacket approx.	20	30	40 cm
acc. to Liebig,	1981/20	1981/30	1981/40
spiral condensers	1990/20	1990/30	1990/40

“Assistent” Condensers, DURAN®/borosilicate glass 3.3, with cone and socket ground

length to jacket approx.	16	16	25	25	25	40	40 cm
cone and socket NS	14/23	19/26	19/26	24/29	29/32	24/29	29/32

acc. to Liebig

1982/1614 /1619 /2519 /2524 /2529 /4024 /4029
DIN 12576

acc. to Allihn

1987/1614 /1619 /2519 /2524 /2529 /4024 /4029
DIN 12581

spiral condensers

1990/1614 /1619 /2519 /2524 /2529 /4024 /4029

acc. to Dimroth

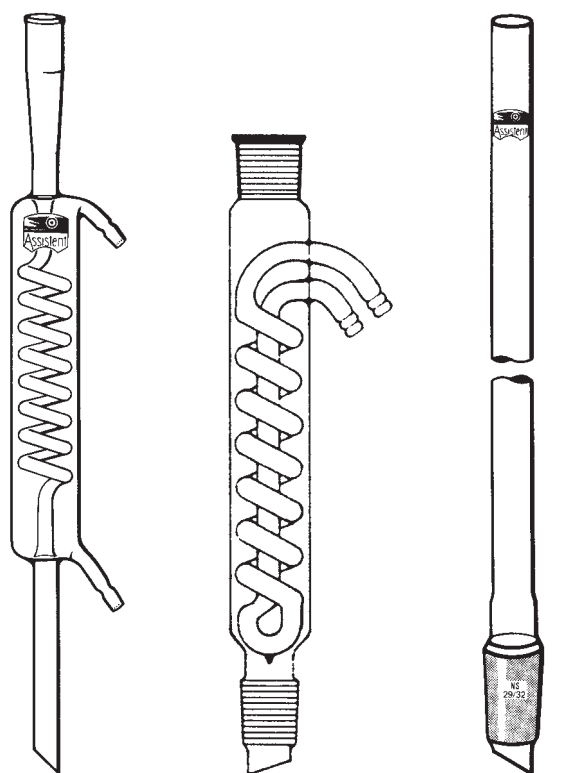
1996/1614 /1619 /2519 /2524 /2529 /4024 /4029
DIN 12591

1998/... Condenser tubes (air condensers)
DURAN®/borosilicate glass 3.3

1998/7 length 70 cm, with cone NS 14/23

1998/10 length 100 cm, with cone NS 29/32

Condensers with other lengths of jacket and other standard ground are available on request.



1990/...

1996/2529

1998/10

General laboratory apparatus



“Assistent” Glass Joints

Glass joints with standard ground, DIN 12 249, DURAN®/borosilicate glass 3.3, reinforced solid finish, marked with size of standard ground

NS (ST-RIN):

5 7 10 12 14 19 24 29 34 45

length of ground mm:

13 16 19 21 23 26 29 32 35 40

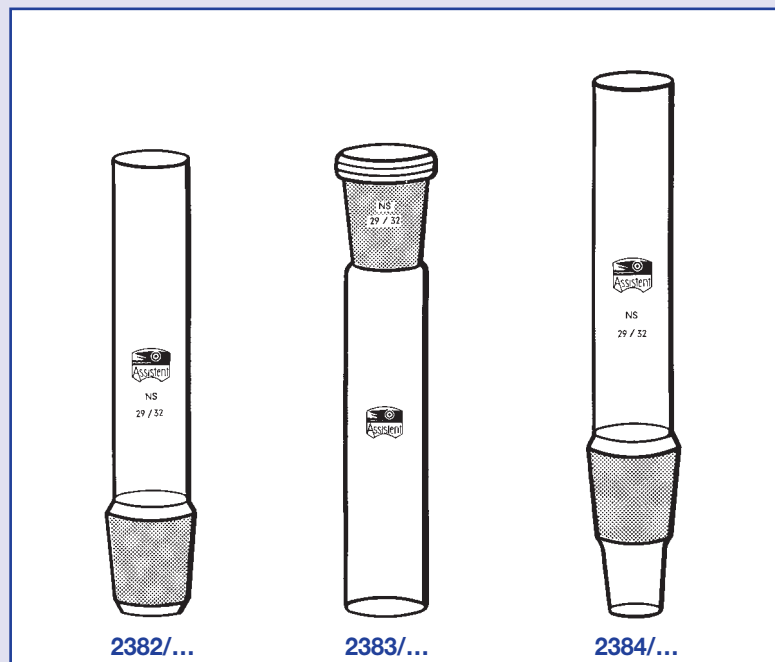
2382/... cones, (form B)*

2383/... sockets, (form E)*

2384/... cones, (form G)*

NS 14 24 29 45

* On request available of quartz glass



2386/... “Assistent” Clips of plastic, POM for conical joints, resistant to temperature up to +150 °C

2386/10 NS 10 **2386/29** NS 29,2

2386/12 NS 12,5 **2386/34** NS 34,5

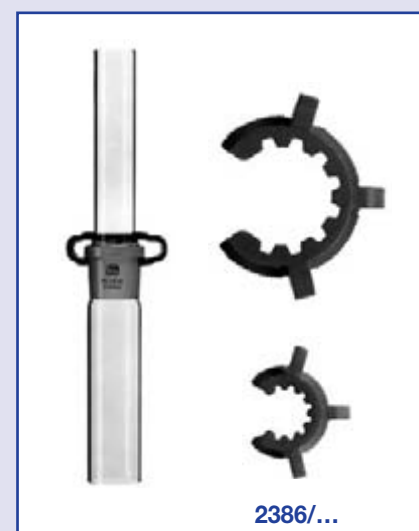
2386/14 NS 14,5 **2386/40** NS 40

2386/19 NS 18,8 **2386/45** NS 45

2386/24 NS 24

2387/... Reduction adapters, DURAN®/borosilicate glass 3.3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
socket NS	14	14	14	19	19	29	24	19	24	29	24	29	29	45
cone NS	19	24	29	24	29	45	34	14	14	14	19	19	24	29



2388/... Sleeves of PTFE, disposable, for ground joints and stoppers, thickness approx. 0,05 mm, self-lubricating, prevent glass joints from sticking together, outstanding resistance to chemicals, operating temperature –200 +260 °C, in packs of 10

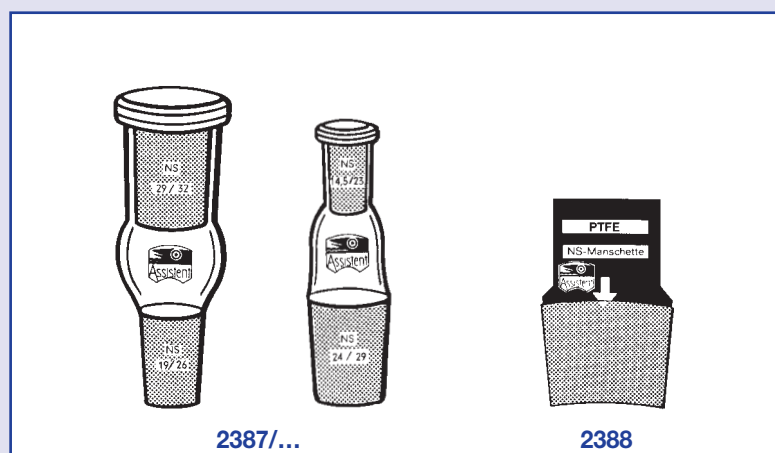
2388/14 NS 14/23

2388/19 NS 19/26

2388/24 NS 24/29

2388/29 NS 29/32

2388/45 NS 45/40





General laboratory apparatus

“Assistent” Laboratory Equipment

2005 Litmus paper, blue, in books of 100 strips
pH 8.0 – 5.0

2006 Litmus paper, red, in books of 100 strips
pH 5.0 – 8.0

2007 Universal indicator paper pH 1–14
5 m x 7 mm roll in plastic dispenser

2008 3 replacement rolls for 2007

2009 pH test sticks, colour-fixed pH 0–14 for rapid indication of pH value of water. Colours do not fade or fuse even in alkaline solutions. Distinct colour change facilitates comparison with colour chart. In plastic boxes of 100 sticks

2085/... Vacuum manometers acc. to Bennert 0–90 torr, on wooden back and base, with movable scale of mirror glass

2085/1 mercury-filled
2085/2 without mercury-filling

PARAFILM® „M“, waterproof, flexible, gas-permeable sealing film for the laboratory. For tightly sealing test tubes, cylinders, flasks, Petri dishes etc.

2510/1 rolls of 50 cm x 15 m (20" x 50")

2511 rolls of 10 cm x 38 m (4" x 125")
in dispenser carton

2511/1 rolls of 10 cm x 75 m (4" x 246")
in dispenser carton

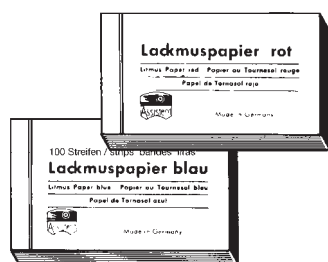
2512 rolls of 5 cm x 75 m (2" x 246")
in dispenser carton

Dimensions given are approx. width x length

2065 Magnesia grooves
length approx. 100 mm

2066 Magnesia rods
approx. 140 x 1,8 mm

2515 Deflagrating spoons,
length approx. 45 cm

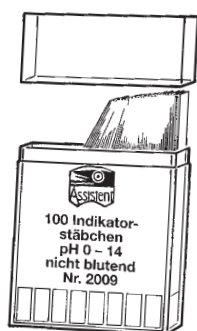


2005

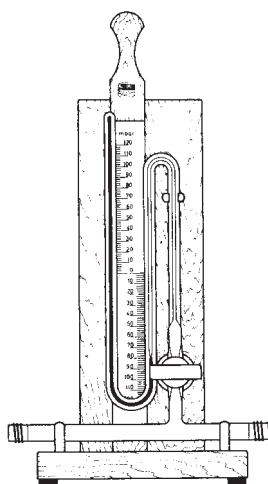
2006



2007



2009



2085



2510/1



2512

2511

2511/1



2065

2066



2515

General Laboratory Apparatus



“Assistent” Stirrers

2067 “Assistent” Hand stirrer R 1, CE

Handy, battery-powered mini stirrer for mixing light liquids in cuvettes, test tubes and other small vessels up to approx. 1000 ml. Needs only one 1,5 volts battery. Smoothly running motor. Easily operated by pressing the button at top. Casing is detachable for battery change. Anodized, acid-resistant surface.

Including battery and plastic stirring rod.

Weight without battery: pprox. 70 g

Length (without rod): 135 mm

Diam. : 20 mm

Number of revolutions: approx. 3000 rpm

Three different stirring-elements are available:

2067/1 Spare stirring rods of plastic diam. 3 mm, in bags of 500

2067/2 Stirring rods of stainless steel plain end

2067/3 Stirring rods of stainless steel wing type

2068 “Assistent” Mini stirrer, CE

Multi-purpose stirrer, compact, trouble-free. Suitable for serial and permanent tests and for educational laboratories as well. Can be attached to support stands by means of a clamp. Suitable for continuous stirring. Fixed speed of 750 r. p. m. The housing is fully isolated and is made of acid-proof polypropylene.

Support arm, chuck and stirring rod are of stainless steel.

Including stirring bar, without stand and clamp.

power: 220 volts, 50 Hz

Dimensions: approx. 85x60 mm diam.

Support arm: approx. 135x 8 mm diam.

Weight: approx. 0,260 kg

2068/17 “Assistent” Variable speed stirrer R17, CE

meets a wide range of mixing requirements in the laboratory. Stepless electronic speed control. Constant torque throughout range of 1 00 to 2000 r.p.m. with its 10 mm support arm it can be attached to stands by means of a clamp.

For stirring up to 5 ltr. of low viscosity liquids such as water, aqueous solutions etc.

Including stainless steel stirring rod with wing end, without stand and clamp.

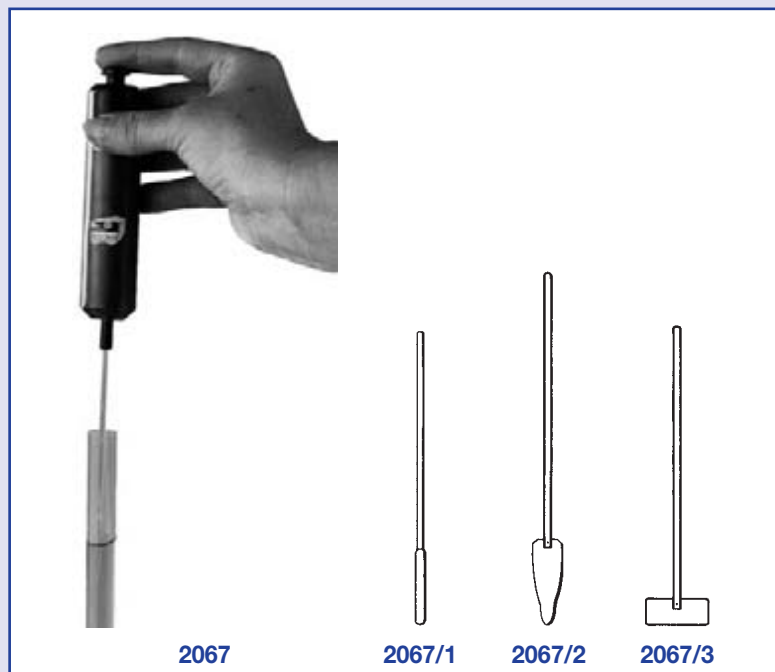
power: 220/230 volts, 50/60 Hz

Power consumption: approx. 40 watts

Power output: approx. 17 watts

Dimensions: approx. 62 x 62 mm

Weight : approx. 1200 g





General Laboratory Apparatus



2068/18

2068/18 Stirrer with electronic feedback speed control

The sturdy laboratory stirrer is directly driven and particularly suitable for stirring volumes up to 50 ltrs. H₂O, e.g. in schools and laboratories.

Small dimensions, large range of capacity.

Also suitable for liquids of high viscosity e.g. 80 % glycerine or honey.

The apparatus is suitable for using stirring rods and stirring elements of 6, 8 and 10 mm shaft diameter.

Technical data:

Steplessly adjustable speed from 100 – 2000 r.p.m.

230 Volt, 50 Hz, 85 Watt

electric connecting cable of 1.5 m

dimensions: approx. 65 x 100 x 108 mm (w x d x h)

weight: approx. 2.1 kg

Delivery excluding stand, clamp and stirring blade

Accessories:

861 metal stand

(rod 750 x 12 dia., plate approx 210 x 130 mm)

862 clamp

2067/4 stirring blade of stainless steel

with transverse stirring area

(when ordering required diam. of shaft has to be indicated).



2073/E6

2070/E5

“Assistent” Mini-magnetic stirrers

economy equipment. Speed and temperature stepless adjustable

2070/E5 Mini magnetic stirrer without heating

€€

Technical data:

power: 230 V, 50 Hz, 45 Watt (110 V also available)

electric connecting cable: 1,5 m

motor: stepmotor 6 Watt

speed: stepless 10–1200 r.p.m

dimensions: 110 x 100 x 55 mm (w x d x h)

weight: ca. 0,9 kg

2073/E6 Mini magnetic stirrer with heating

€€

Eloxalheizplatte 90 x 90 mm, Aluminium eloxiert

Technische Daten

power: 230 V, 50 Hz, 45 Watt (110 V also available)

electric connecting cable: 1,5 m

motor: stepmotor 6 Watt

speed: stepless 10–1200 r.p.m.

heating: 160 Watt

temperature: stepless from Roomtemp. to + 250 °C

dimensions: 110 x 100 x 80 mm (w x d x h)

weight: ca. 1,2 kg

General Laboratory Apparatus



“Assistent” magnetic Stirrers “Assistent” Sand Bath

- 2069 “Assistent” Mini-Magnetmix,** CE
Mini-size magnetic stirrer in flat housing of polypropylene. The synchronous motor is rated for continuous operation at 500 r.p.m.
For light mixing jobs up to approx. 1000 ml (aqueous solutions etc.). The housing is fully isolated, construction acc. to VDE.
For 230 volts/50 Hz, 4 watts, with 1,5 m cable and “Europe plug”
Dimensions: approx. 147 x 77 x 49 mm.
Weight: approx. 350 g



- 2070 “Assistent” Magnetmix,** CE
magnetic stirrer without heating. Powerful, quiet-running split terminal motor with electronic speed control from 80 to 1600 r.p.m.
Modern design, acid-resistant base, top plate of stainless steel. Construction acc. to VDE
Power consumption: 40 watts. With power switch, control lamp and button for exact speed adjustment
1,5 m 3-wire connecting cable with safety plug.
Dimensions: approx. 160x160x100 mm.
Weight: approx. 2,1 kg



- 2070/1 “Assistent” Magnetmix**
magnetic stirrer without heating,
feedback control, system maintains speed despite viscosity or frequency changes

- 2070/50 Magnetic stirrer,** CE
for volumes up to 50 ltrs. H₂O
Technical data:
Steplessly adjustable speed
from 100 – 1100 r.p.m.
no deviations in speed or in frequency in case of variation of viscosity,
230 V, 50 Hz, 40 Watt
electric connecting cable of 1.5 m
dimensions: approx. 210 x 245 x 100 mm
(w x d x h)
weight: approx. 4.5 kg

- 2070/100 Magnetic stirrer,** CE
for volumes up to 100 ltrs. H₂O
Technical data:
Steplessly adjustable speed from 100 – 1100 r.p.m.
230 V, 50 Hz, 40 Watt
electric connecting cable of 1.5 m
dimensions: approx. 300 x 310 x 100 mm
(w x d x h)





General Laboratory Apparatus



2071

2072

“Assistent” Magnetic Stirrers

2071 “Assistent” Magnetmix TMA, CE

magnetic stirrer with circular heating plate of stainless steel.

Powerful, quiet-running split terminal motor with electronic speed control from 80 to 1600 r.p.m. Precise temperature control. Functional design, acid-resistant base, top plate of stainless steel. Construction acc. to VDE for 230 volts/50 Hz (others available).

Power consumption: 500 watts.

Temperature range: room temperature up to +300 °C.

With power switch control lamp and separate buttons for exact speed control and heating 1,5 m 3-wire connecting cable with safety plug. dimensions: approx. 156 x 150 x 100 mm.

Diam. of heating plate: approx. 130,mm.

Weight: approx. 2,5 kg

2071/1 “Assistent” Magnetmix, CE

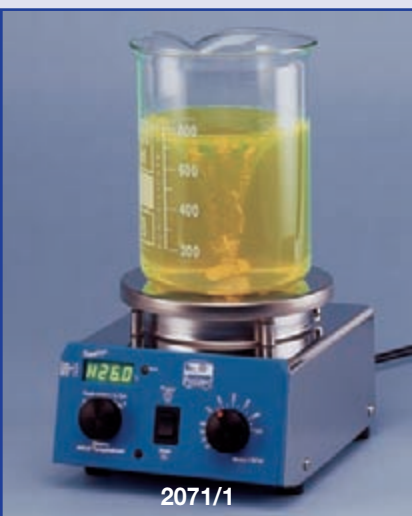
with digital display, magnetic stirrer with heating plate of stainless steel, feedback control system maintains speed and temperature despite viscosity or frequency changes. With connection for safety contact thermometer.

2072 “Assistent” Magnetmix TMC, CE

magnetic stirrer with heating plate of CERAN® of approx. 135 x 135 mm, heating: 600 watts construction and technical data: see No. 2071

2072/1 “Assistent” Magnetmix, CE

with digital display, magnetic stirrer with heating plate of CERAN® feedback control system maintains speed and temperature despite viscosity or frequency changes. With connection for safety contact thermometer.



2071/1



2081

2081 “Assistent” Sand bath TS, CE

with bath top heater for sand and all kinds of liquids.

Bath top of stainless steel, dimensions: approx. 140 x 140 x 55 mm, capacity approx. 1000 ml. Temperature control by thermo sensor at bottom of bath top.

Construction acc. to VDE. For 230 volts (others available). Power consumption: 600 watts.

Temperature range: room temperature up to +250 °C.

1,5 m 3-wire connecting cable with safety plug.

Dimensions: approx. 156 x 150 x 145 mm.

Weight: approx. 1,3 kg.

General Laboratory Apparatus



“Assistent” Laboratory Equipment

2075/... “Assistent” Magnetic stirring bars

PTFE-coated, magnetized stirring core

approx.

approx.

2075/1	12x4,5 mm	2075/6	40x 8,0 mm
2075/2	15x4,5 mm	2075/7	50x 8,0 mm
2075/3	20x6,0 mm	2075/8	60x10,0 mm
2075/4	25x6,0 mm	2075/9	70x10,0 mm
2075/5	30x6,0 mm		

2076 Retrievers of PTFE for insertion or removal of magnetic stirring bars, approx. 350x8 mm

2077/... Magnetic stirring bars, PTFE-coated, octagonal with central ring

Ø mm

Ø mm

2077/1	ca. 13x 8	2077/7	ca. 38x13
2077/2	ca. 15x 8	2077/8	ca. 51x 8
2077/3	ca. 25x 8	2077/9	ca. 51x10
2077/4	ca. 25x10	2077/10	ca. 64x10
2077/5	ca. 38x 8	2077/11	ca. 75x12
2077/6	ca. 38x10		

2078/... Magnetic stirring bars, PTFE-coated, triangular

Ø mm

Ø mm

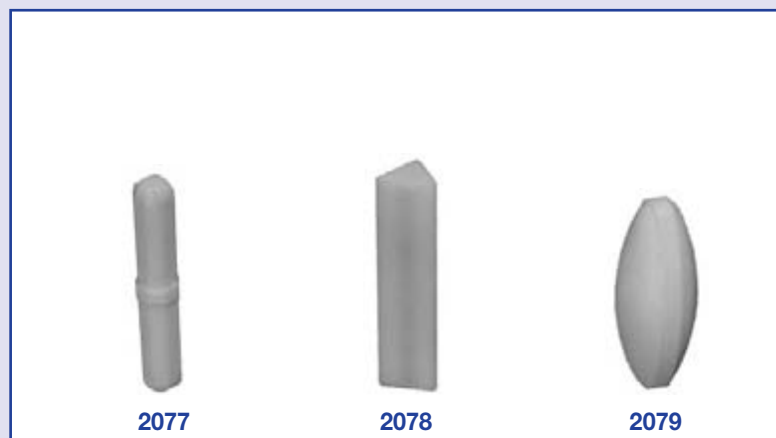
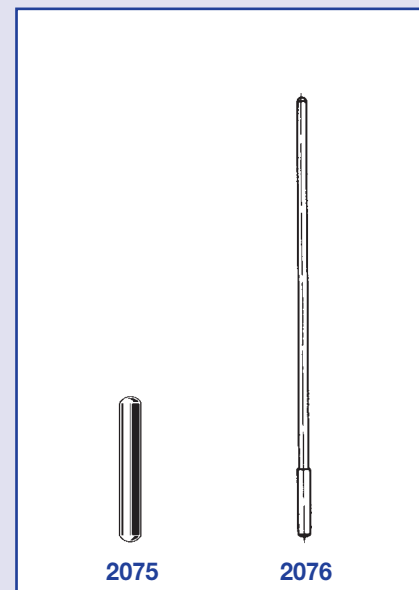
2078/1	ca. 12x 6	2078/6	ca. 40x 14
2078/2	ca. 20x 8	2078/7	ca. 50x12
2078/3	ca. 25x 8	2078/8	ca. 55x14
2078/4	ca. 25x14	2078/9	ca. 80x16
2078/5	ca. 35x10		

2079/... Magnetic stirring bars, PTFE-coated, oval

Ø mm

Ø mm

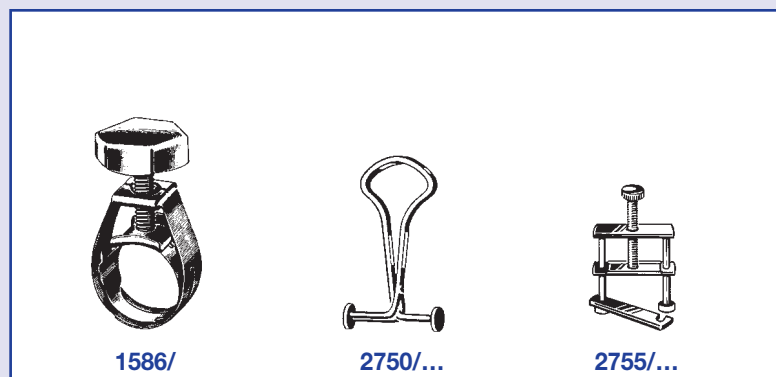
2079/1	ca. 20x10	2079/5	ca. 50x20
2079/2	ca. 25x12	2079/6	ca. 65x20
2079/3	ca. 35x16	2079/7	ca. 70x20
2079/4	ca. 40x20		



1586 Tubing clamps with thumb screw, stainless steel (see page 143)

2750/... Pinchcocks acc. to Mohr of nickelplated brass, sterilisable
Length approx. 50 60 mm
2750/50 **2750/60**

2755/... Clamps acc. to Hoffmann of nickelplated brass, with swinging jaw, sterilisable
Distance between bars approx. 20 25 30 mm
2755/20 **2755/25** **2755/30**





General Laboratory Apparatus



2789

„Assistent“-Reamix

2789 “Assistent” Reamix, €€

test tube shaker with dual function switch, for easy and rapid mixing of liquids in test tubes up to 30 mm diam., in flasks or other small vessels. With cup of acid-resistant polypropylene. Construction acc. to VDE for 230 volts/50 Hz (other available) Attendant-free split terminal motor with electronic speed control from 0 to 2800 r.p.m.

Stepless adjustable shaking frequency from 0 to 45 Hz

With 1,5 m cable with plug

Dimensions: approx. 156 x 150 x 110 mm

Weight: approx. 1,7 kg



2789/2

2789/2 Assistent Reamix, €€

test tube shaker with dual function switch, operation by pressure on the receiving cup or continuous run. The strong split pole motor with precise center balanced drive unit provides quiet and trouble-free operation. The shaking frequency is steplessly adjustable from 0 to 45 Hz and 0 to 2800 r.p.m.

technical data:

power supply: 230 volts, 50 Hz., 45 watts
also available in 110 v/60 Hz.

cable: approx. 1,5 mtr. with plug
motor: electronically regulated, split pole
motor 0–2800 rpm

shaking frequency: 0–45 Hz., steplessly adjustable

receiving cup: PP, acid proof

Length: 110 mm,

width: 100 mm,

height: 90 mm,

weight: approx. 1,1 kg

General Laboratory Apparatus



2789/3 Assistent Reamix,

CC

Universal small lab. shaker for test tubes, small flasks and beakers, reaction tubes, micro test plates etc.

- single hand operation
- universal attachment for small vials
- holds 1 microtiter plate

Opto-electronically controlled small shaker with a wide speed range from 100 – 2800 r.p.m. Orbital shaking motion with soft-start. Continuous operation controlled by a built-in timer to be set between 1 and 60 minutes. Second operation mode for single-hand touch down operation to shake test tubes or small Erlenmeyer beakers.

One universal attachment for test tubes up to 30 mm in the center and foam bore holes 16 x 8 mm, 6 x 10 and 4 x 15 diameter for centrifuge tubes and other small vessels.

The same universal platform will also hold one microtiter plate. This avoids the use of different attachments which are never there when you need them.

At low speed the foam platform can hold small beakers or dishes for soft shaking motions.

technical data:

power supply:	230 volts, 50 Hz, 35 watts
speed range:	100 – 2800 r.p.m.
speed display:	scale
timer:	0 – 60 min
shaking motion:	orbital
dimensions:	150 x 160 x 103 mm (w x d x h)
weight:	approx. 1,9 kg

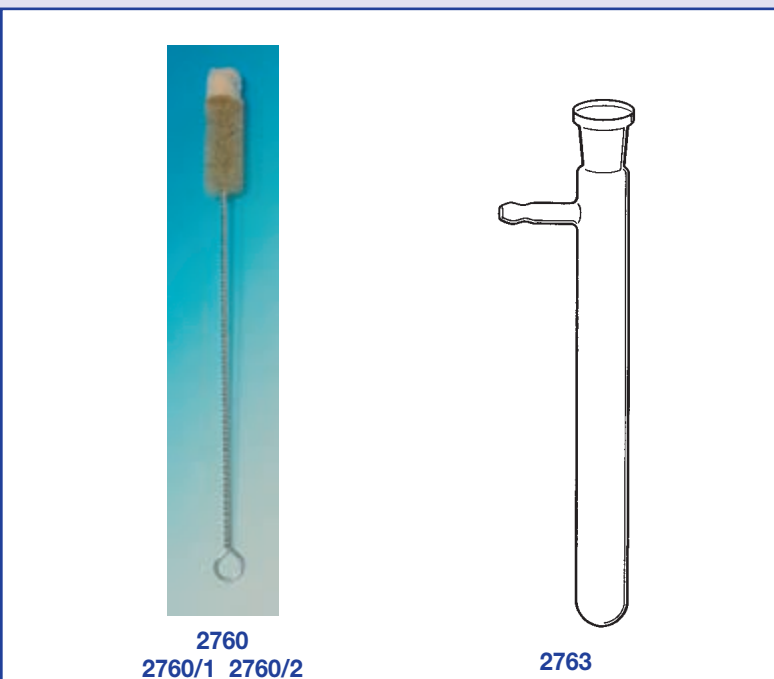


- 2011** “Assistent” Laboratory lifter (labjack) of steel, dim. of platform approx. 160 x 135 mm, adjustable in height from 6 to 27 cm capacity: 7 kgs





General Laboratory Apparatus



2760
2760/1 2760/2

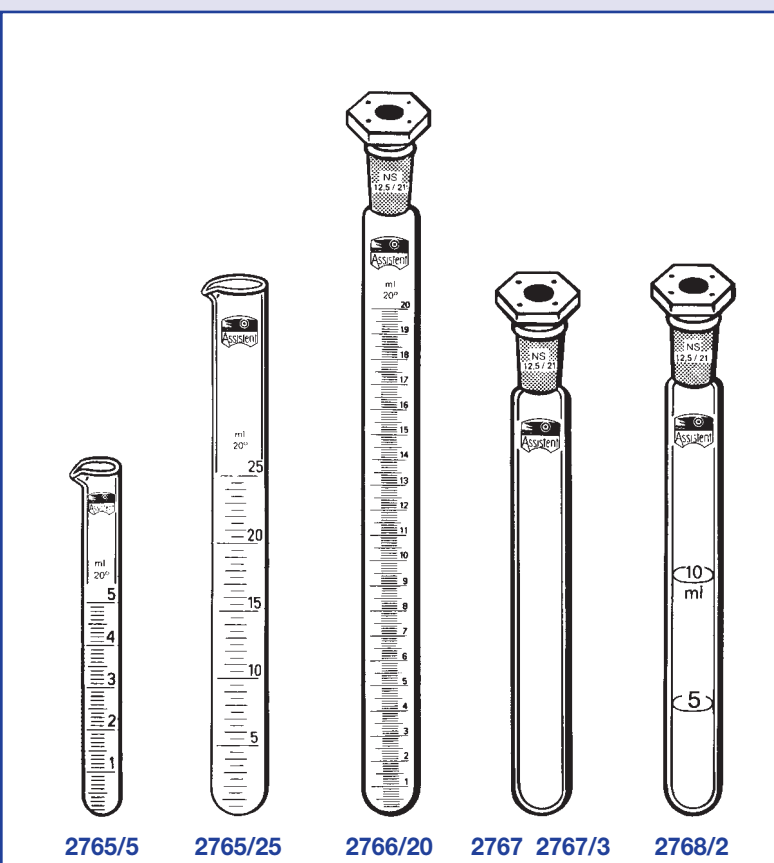
2763

“Assistent” Test tubes and brushes

“Assistent” Test tube brushes with cotton-tip

- 2760** for tubes of 16–20 mm diam.
300 x 80 x 20 mm
- 2760/1** for tubes of 10–12 mm diam.
160 x 50 x 11 mm
- 2760/2** for tubes of approx. 25 mm diam.
330 x 210 x 26 mm

- 2763** “Assistent” Test tubes with moulded socket, unground, with side tube, ca. 180 x 20 mm diam.



2765/5

2765/25

2766/20

2767 2767/3

2768/2

- 2765/...** “Assistent” Test tubes graduated round bottom, with spout, fused white graduation “ASSISTENT-PERMANENT” (also available with blue graduation), clearly legible scale and numbers, usual graduation marks, precisely adjusted
Packing: 10 in a plastic bag

	Capacity ml	Graduation ml	Number of marks	Size approx. mm
2765/5	5	0,1=1/10	50	110x12
2765/10	10	0,1=1/10	100	160x13
2765/20	20	0,1=1/10	200	200x15
2765/25	25	0,5=1/2	50	180x18
2765/30	30	0,5=1/2	60	180x19

- 2766/...** “Assistent” Test tubes, AR®/soda glass, graduated, with standard ground NS 12/21 and plastic stopper, round bottom, 5 in a plastic bag

2766/10	10 ml	1/10 ml
2766/20	20 ml	1/10 ml

- 2767** “Assistent” Test tubes, AR®/soda glass, with standard ground NS 12/21 and plastic stopper, not graduated, approx. 160x16 mm diam.

- 2767/3** DURAN®/borosilicate glass 3.3

- 2768/2** “Assistent” Test tubes, AR®/soda glass, with standard ground NS 12/21 and plastic stopper, approx. 160x16 mm diam. with ring mark and numbers at 5 and 10 ml

Above test tubes are also available with glass stopper instead of plastic stopper.

General Laboratory Apparatus



“Assistent” Test Tubes

2769/... “Assistent” Test tubes, disposable, soda glass, round bottom, rimless, may be used in centrifuges at up to 4000 r.p.m. (tests have been performed with water)

2769/14 approx. 98/100 x 16 mm (in boxes of 200), outs. diam. 15,5 mm, wall 0,5 mm
2769/16 approx. 160 x 16 mm (in boxes of 100), outs. diam. 15,5 mm, wall 0,5 mm

2770/... “Assistent” Test tubes “ELKA”, AR®/soda glass, round bottom, with rim

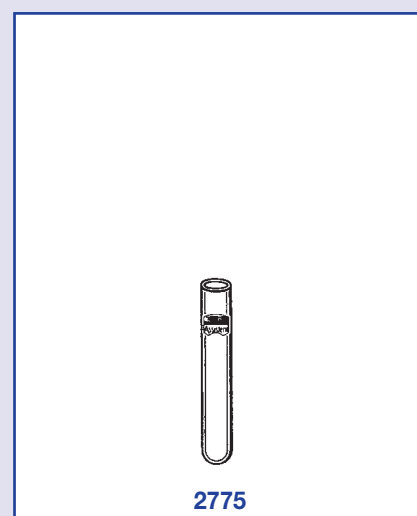
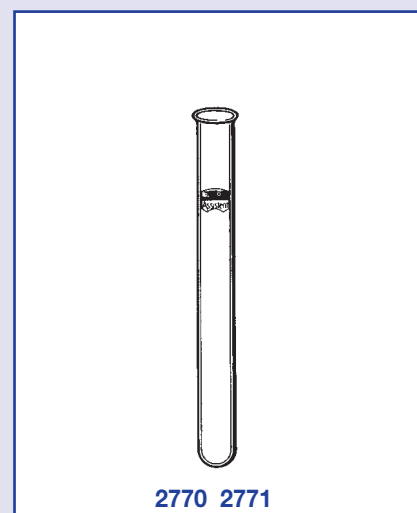
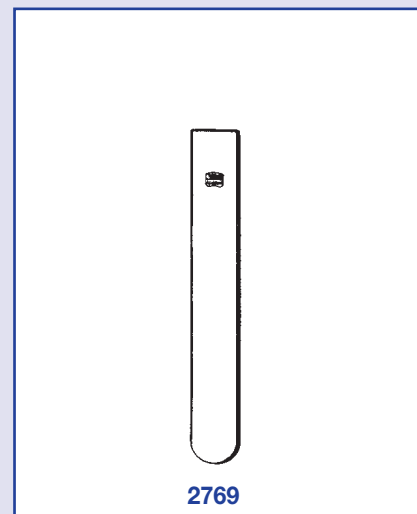
	length	out. diam.	wall mm	box
.../5	100	9,5	0,5	100
.../7	100	11,5	0,5	100
.../9	130	14,0	0,6	100
.../14	100	15,5	0,5	100
.../15	120	15,5	0,5	100
.../216	160	15,5	0,5	200
.../16	160	15,5	0,5	100
.../18	160	17,25	0,5	100
.../19	180	17,25	0,5	100
.../20	180	19,5	0,5	100
.../25	160	24,0	0,8	50
.../27	200	24,0	0,8	50
.../30	200	29,0	0,8	50

2771/... “Assistent” Test tubes, FIOLEX® (borosilicate glass), round bottom, with rim

	length	out. diam.	wall mm	box
.../3	70	7,75	0,45	100
.../5	100	9,75	0,45	100
.../7	100	11,25	0,45	100
.../28	120	19,75	0,55	100
.../9	130	13,25	0,45	100
.../14	100	15,0	0,6	100
.../216	160	15,0	0,6	200
.../16	160	15,0	0,6	100
.../19	180	17,5	0,55	100
.../20	180	19,75	0,55	100

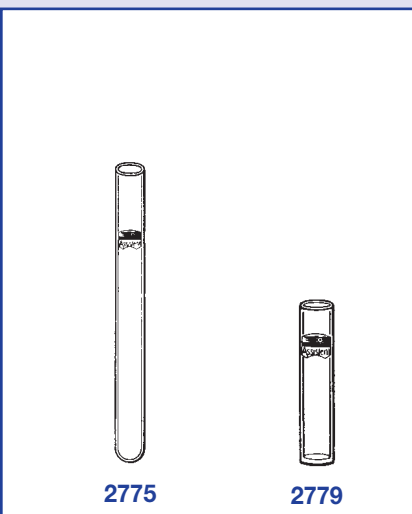
2775/.... “Assistent” Test tubes, AR®/soda glass, round bottom, rimless, heavy wall, approx. 1 mm thick

	length	out. diam.	wall mm	box
.../0	50	6,35	0,65	500
.../01	27	7,0	0,7	2000
.../1	35	6,35	0,65	100
.../2	40	8,0	0,7	100
.../3	80	10,5	0,9	100
.../4	70	10,5	0,9	100
.../5	100	9,5	0,9	100
.../6	75	11,6	0,7	200
.../7	100	11,6	0,7	100
.../8	100	13,25	0,9	100
.../9	130	13,25	0,9	100
.../10	75	14,5	0,9	100
.../11	85	14,5	0,9	100
.../12	135	14,5	0,9	100
.../14	100	15,25	0,8	100
.../216	160	15,25	0,8	200
.../16	160	15,25	0,8	100
.../17	100	17,5	1,0	100
.../19	180	17,5	1,0	100





General Laboratory Apparatus



“Assistent” Test Tubes

2775/1 Durham tubes

2775/6 Kahn tubes, Urastrat tubes, tubes for combs test

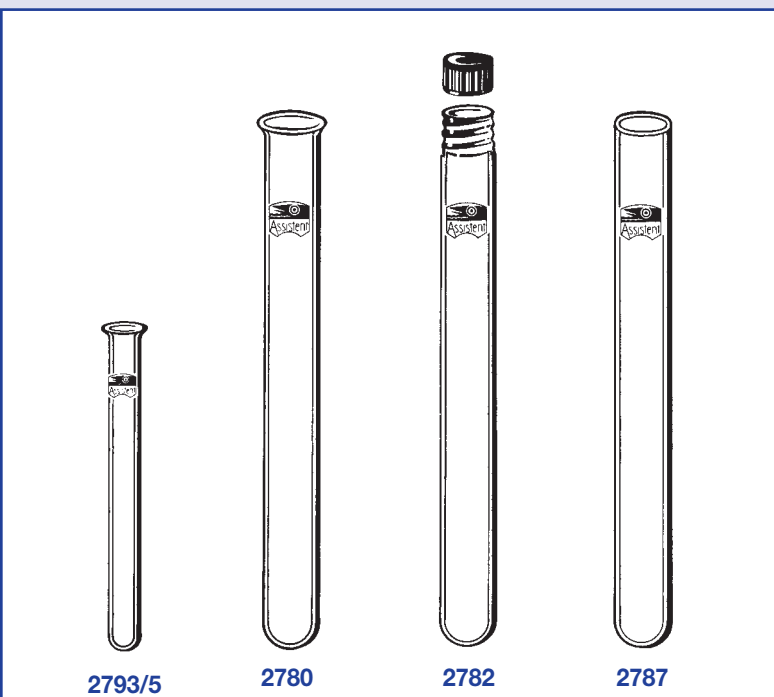
2775/7 Centrifuge tubes for examination of mastix and for blood typing

2779/... “Assistent” Glass tubes, AR[®]-/soda-glass flat bottom, rimless, heavy wall, approx. 1 mm thick approx. length x outs. diam.

Length approx. 65 70 mm

outs. diam. approx. 15 22 mm

2779/65 **2779/70**



2780 “Assistent” Test tubes, AR[®]/soda glass round bottom, with rim, heavy wall, approx. 1 mm, approx. 160 x 16 mm diam., in boxes of 100 pieces

“Assistent” Test tubes, AR[®]/soda glass heavy wall, round bottom, with thread GL 18 and screw cap, sterilizable up to approx. +121 °C, in boxes of 100 pieces

2782/14 approx. 100 x 16 mm diam.

2782/16 approx. 160 x 16 mm diam.

2793/5 Test tubes acc. to Uhlenhut with flared rim, for bacteriological and serological work, approx. 100 x 10 mm diam., in boxes of 100 pieces

“Assistent” Test tubes, DURAN[®]/borosilicate glass 3.3, round bottom, heavy wall

Length	100	75	100	130	150	160	150	180	180	200	200	200 mm
outs. diam.	10	12	12	14	16	16	19	18	20	24	30	38 mm
wall thickness	1	1	1	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,4	1,4 mm
2787/... rimless	/5	/6	/7	/9	/15	/16	/17	/19				
2788/... with rim	/5	/6	/7	/9	/15	/16	/17	/19	/20/	24	/30	/38

Special production of test tubes also in other sizes available.

General Laboratory Apparatus



“Assistent” Glass vials, rolled rim, with plastic snap-cap

	cont. ca.	L x Ø mm	pack
2783/05	2 ml	36 x 11,5	690
2783/1	5 ml	24 x 24	154
2783/2	8 ml	34 x 24	154
2783/3	10 ml	41 x 24	154
2783/4	15 ml	48 x 25	130
2783/6	20 ml	60 x 26	130
2783/8	30 ml	72 x 28	108
2783/16	60 ml	106 x 32	84
2785/3	3 ml	30 x 19	200
2785/5	5 ml	40 x 19	200
2785/10	10 ml	45 x 22	200
2785/25	25 ml	50 x 30	200
2785/30	30 ml	75 x 28	200
2785/40	40 ml	80 x 30	200
2785/50	50 ml	100 x 30	200
2785/100	100 ml	145 x 34	100



2783

2784 Test glasses clear glass, flat bottom with white grip stopper, for globuli, 300 pieces per box ca. 52,5 x 8 mm Ø



2784

2776/... Kapsenberg caps, anodized aluminium, silver-coloured, with handle

2776/16 for tubes of 16 mm diam.

2776/18 for tubes of 18 mm diam.

2777/... Test tube caps “Labocap” anodized aluminium, silver, red, blue, with handle

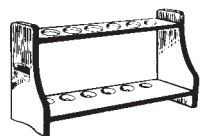
2777/16 for tubes of 16 mm Glas diam.

2777/18 for tubes of 18 mm Glas diam.

2776
27772776
2777



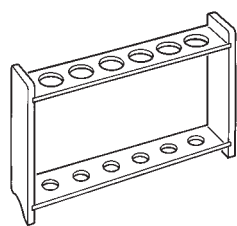
General Laboratory Apparatus



2794/1 2795



2794/2 2801



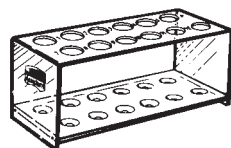
2794/13



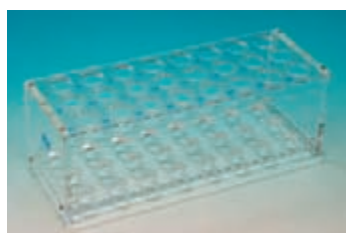
2796



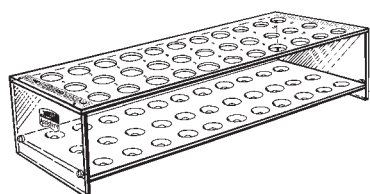
2802



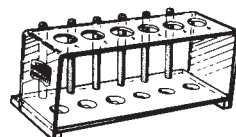
2808/12



2808/24



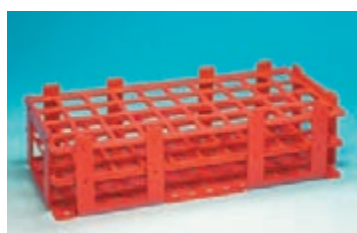
2808/33



2809/6



2809/12



2813

“Assistent” Test Tube Racks

wooden, for tubes up to approx. 22 mm diam.

2794/1 for 6 tubes without pins

2794/2 for 12 tubes, with 6 pins, double deck

wooden, for tubes up to approx. 30 mm diam.

2794/13 for 6 tubes, without pins

wooden, for tubes up to approx. 18 diam.

2795 for 6 tubes, without pins

2796 for 12 tubes, without pins, double deck

2797 for 18 tubes, without pins, double deck

2800 for 6 tubes, with 6 pins

2801 for 12 tubes, with 6 pins, double deck

2802 for 18 tubes, with 9 pins, double deck

2803 for 24 tubes, with 12 pins, double deck

2804 for 24 tubes, without pins, double deck

of Plexiglas® numbered holes

2807 for 12 tubes up to approx. 13 mm diam., without pins

for tubes up to approx. 18 mm diam. without pins

2808/6 for 6 tubes

2808/12 for 12 tubes

2808/24 for 24 tubes

2808/33 for 33 tubes

for tubes up to approx. 18 mm diam. with pins

2809/6 for 6 tubes

2809/12 for 12 tubes

of polypropylen (PP), stackable, alphanumerically marked, autoclavable at 121 °C, operating temperature –20 to 90 °C, ideal for use in waterbath, white (standard), blue, red, yellow. The racks are supplied in three pieces and can be assembled easily packing-unit 5 pcs.

Cat.-No.	for Ø up to	for... test-tubes	L x W x H mm
2813/13	13 mm	6 x 14	265 x 126 x 75
2813/18	18 mm	5 x 11	265 x 126 x 75
2813/20	20 mm	4 x 10	265 x 126 x 75
2813/25	25 mm	4 x 8	265 x 126 x 88
2813/30	30 mm	3 x 7	265 x 126 x 88

General Laboratory Apparatus



“Assistent” Test tube racks

of polystyrene

2814 for 12 tubes up to approx. 20 mm diam., without pins

of plastic-coated wire, white,

for tubes up to approx. 17 mm diam., without pins

2815/... height approx. 8 cm,

2815/12 for 12 tubes (3x4)

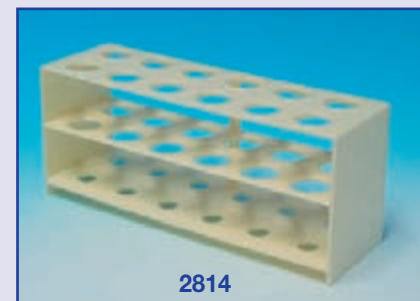
2815/24 for 24 tubes (4x6)

2815/36 for 36 tubes (3x12)

2815/48 for 48 tubes (4x12)

for tubes up to approx. 13 mm diam. (e.g. coagulometer tubes No. 514/55), without pins, height approx. 4 cm

2815/1248 for 48 tubes (4 x 12)

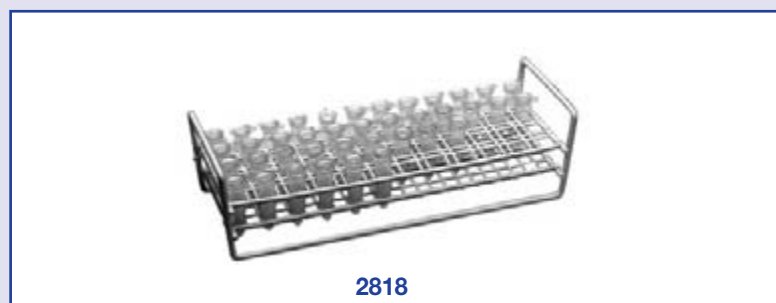


2814



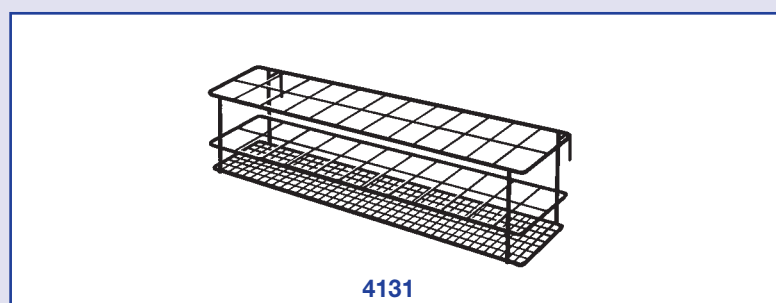
2815/24

2818 height approx 4 cm, with handles, for 48 reaction tubes (4x12)



2818

4131 for tubes up to approx. 17 mm diam., height approx. 7 cm, without pins, for 24 tubes (2x12)



4131

2810 **Test tubes holders**, wooden, with spring, for tubes up to approx. 20 mm diam. packing: 10 pieces

2811 **Test tubes holders**, wooden, with spring, for tubes up to approx. 30 mm diam. packing: 10 pieces



2810

2811



General Laboratory Apparatus



**Precision-
Glass instruments**



**electrical and
electronical apparatus**

General Laboratory Apparatus



“Assistent” Glass Tubing and Rods

2830/... “Assistent” Glass tubing, DURAN®/borosilicate glass 3.3, in factory lengths of approx. 1,5 m

2830/1 4 and 5 mm outs. diam., 0,8 mm wall thickness

2830/2 6, 7 and 8 mm outs. diam., 1 mm wall thickness

2830/3 9 10 11 12 13 14 mm outs. diam.,
15 16 17 18 19 20 22 24 mm diam.,
1,2 mm wall thickness
26 30 mm outs. diam., 1,4 mm wall thickness

2830/4 32 34 36 38 mm outs. diam.,
1,4 mm wall thickness
40 42 44 mm outs. diam., 1,6 mm wall thickness
50 mm outs. diam., 1,8 mm wall thickness

2833 „Assistent“-Capillary tubing DURAN®/borosilicate glass 3.3, in factory lengths of approx. 1,50 m
outs. diam. 6 mm, ins. diam. 0,4 and 1,2 mm
outs. diam. 7 mm ins diam. 1,2 1,7 2,7 und 3 mm
outs. diam. 8 mm ins diam. 1,7 and 2,7 mm

2840/... “Assistent” Glass tubing, AR®/soda glass,
in factory lengths of approx. 1,50 m

2840/1 outs. diam. 4 and 5 mm

2840/2 outs. diam.
6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 26 28 30 mm

2840/3 outs. diam. 32 and 34 mm

2840/4 outs. diam. 36 38 40 mm

Wall thickness of tubing of 6–25 mm
outs. diam.: approx. 1–1,25 mm.

2843 “Assistent” Capillary tubing, AR®/soda glass,
in factory lengths of approx. 1,50 m
outs. diam. 5–7 mm
ins diam. 1–3 mm

2835/... “Assistent” Glass rods,
Duran®/borosilicate glass 3.3,
in factory lengths of approx 1,50 m

2835/1 4, 5 and 6 mm Ø

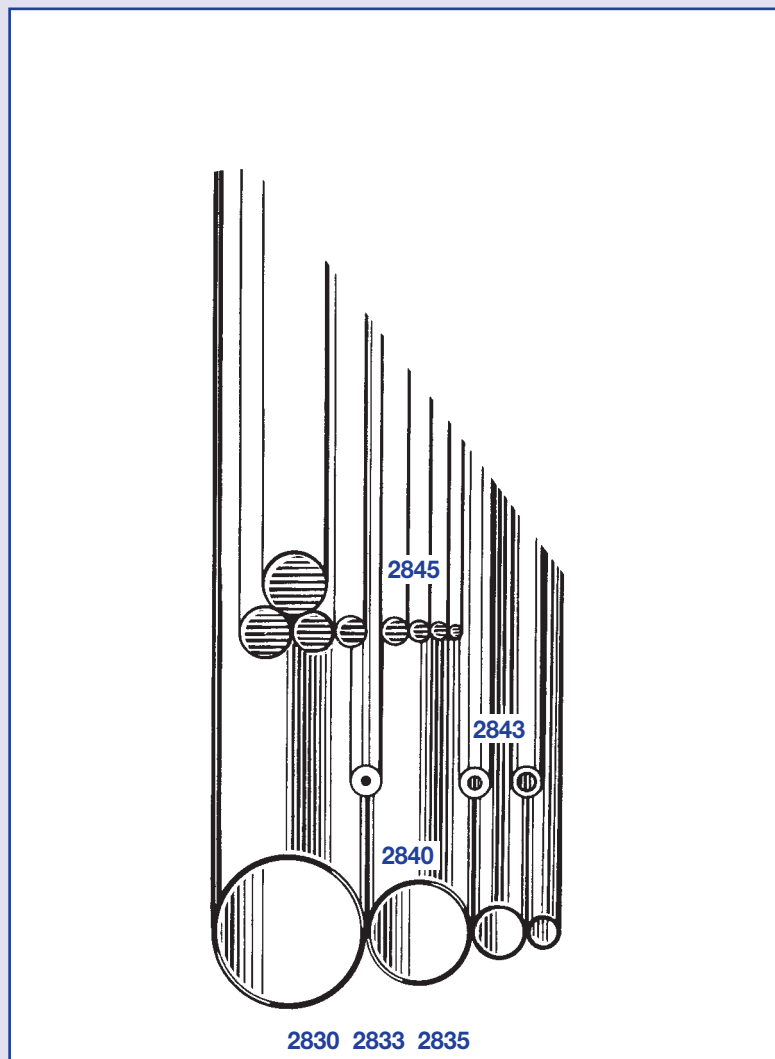
2835/2 8 mm Ø

2845/... “Assistent” Glass rods, AR®-/soda-glass,
in factory lengths of approx. 1,50 m

2845/2 diam. 4 and 5 mm

2845/3 diam. 6 7 8 9 10 12 mm

Please indicate diameter when ordering.



2830 2833 2835



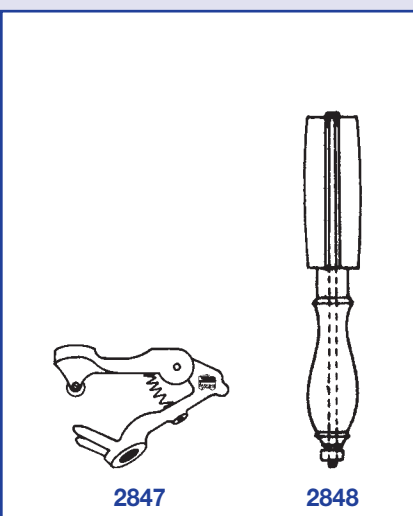
General Laboratory Apparatus



“Assistent” Glass Rods

2850/... “Assistent” Stirring rods of glass, fused ends

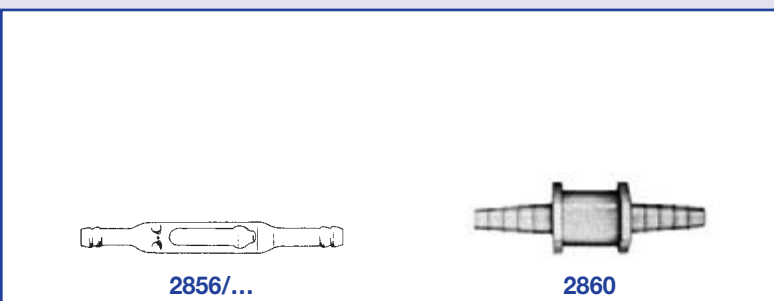
	Length mm	Diam.mm (approx.)
2850/203	200	3
2850/154	150	4
2850/204	200	4
2850/155	150	5
2850/205	200	5
2850/156	150	6
2850/206	200	6
2850/254	250	4
2850/256	250	6
2850/257	250	7
2850/307	300	7
2850/308	300	8
2850/309	300	9
2850/512	500	12



2847 “Assistent” Glass tubing cutters with cutting wheel for tubes up to approx. 30 mm diam.

2847/1 Spare wheels

2848 “Assistent” Glass cutting knives quality steel, with wooden handle



2856 “Assistent” Non-return valves (safety valves) DURAN®/borosilicate glass 3.3 for tube inside diam. 8–9 mm

2860 “Assistent” Non-return valves (safety valves) of polyethylene for tube inside diam. 6–9 mm

General Laboratory Apparatus



“Assistent” Separatory Funnels

“Assistent” Separatory funnels DURAN®, with NS stopcock, interchangeable plug and reliable retaining device, with NS plastic stopper (high-density polyethylene, acid and alkali resistant); socket and neck are reinforced; marked with capacity and NS size; in cardboard boxes of 2 pieces

Capacity ml					
50	100	250	500	1000	2000
Stopper NS					
19	19	29	29	29	29
Stopcock bore mm					
2,5	2,5	4	4	6	6
Order size					
.../50	.../100	.../250	.../500	.../1	.../2

conical, DIN ISO 4800, DURAN®

- 2950/...** with interchangeable NS plug of glass, solid
- 2951/...** with interchangeable NS plug of PTFE

cylindrical, DURAN®

- 2956/...*** with interchangeable NS plug of glass, solid
- 2957/...*** with interchangeable NS plug of PTFE

cylindrical, graduated, DURAN®

(for reading the approximate volume)

- 2960/...*** with interchangeable NS plug of glass, solid
- 2961/...*** with interchangeable NS plug of PTFE

“Assistent” Separatory funnels, borosilicate glass 3.3 details and sizes as above

pear-shape (spherical),

- 2970/...*** with interchangeable NS plug of glass, solid
- 2971/...*** with interchangeable NS plug of PTFE

acc. to Gilson,

- 2972/...*** with interchangeable NS plug of glass, solid
- 2973/...*** with interchangeable NS plug of PTFE

acc. to Walter, with dropping tip

- 2974/...** with interchangeable NS plug of glass, solid
- 2975/...** with interchangeable NS plug of PTFE

cylindrical,

- 2976/...** with interchangeable NS plug of glass, solid
- 2977/...** with interchangeable NS plug of PTFE

cylindrical graduated, (for reading the approximate volume)

- 2980/...** with interchangeable NS plug of glass, solid
- 2981/...** with interchangeable NS plug of PTFE

acc. to Squibb,

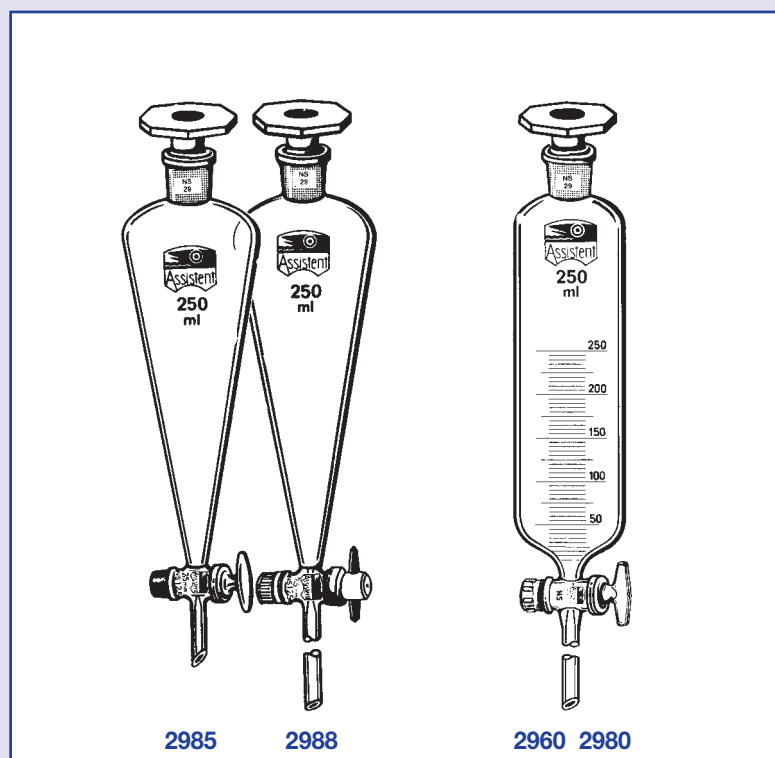
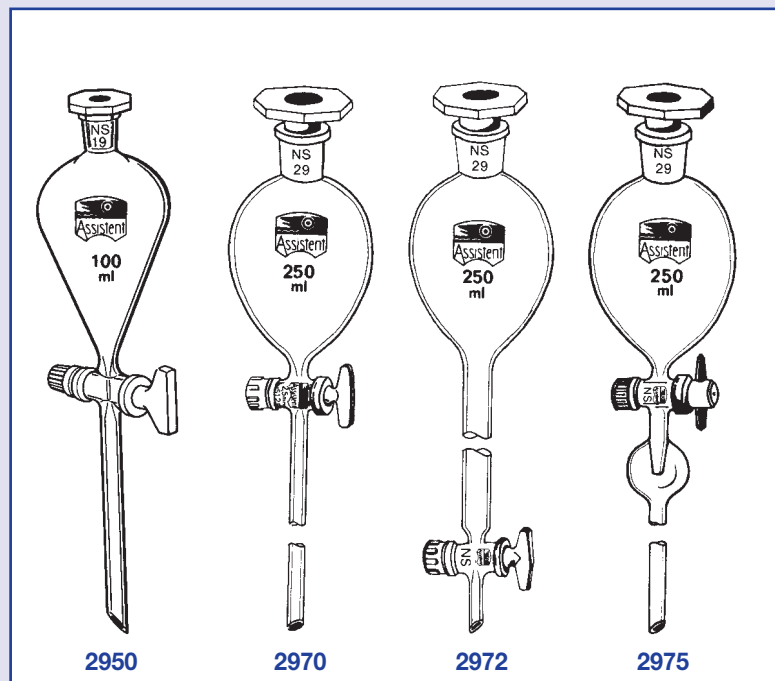
- 2985/...** with interchangeable NS plug of glass, solid
- 2986/...** with interchangeable NS plug of PTFE

conical, with long stem

- 2987/...** with interchangeable NS plug of glass, solid
- 2988/...** with interchangeable NS plug of PTFE

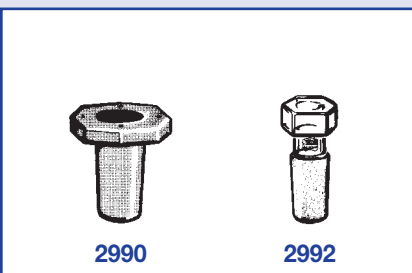
*size 2000 ml not available

(NS = interchangeable standard ground)





General Laboratory Apparatus



“Assistent” Laboratory Equipment

2990/... “Assistent” NS plastic stoppers

(high-density polyethylene, acid and alkali resistant), octagonal
(NS = interchangeable standard ground)

NS	7	10	12	14	19
	2990/7	2990/10	2990/12	2990/14	2990/19
NS	24	29	34	45	60
	2990/24	2990/29	2990/34	2990/45	2990/60

2992/... “Assistent” NS glass stoppers, DURAN®/ borosilicate glass 3.3, hexagonal

NS	7	10	12	14	19
	2992/7	2992/10	2992/12	2992/14	2992/19
NS	24	29	34	45	
	2992/24	2992/29	2992/34	2992/45	

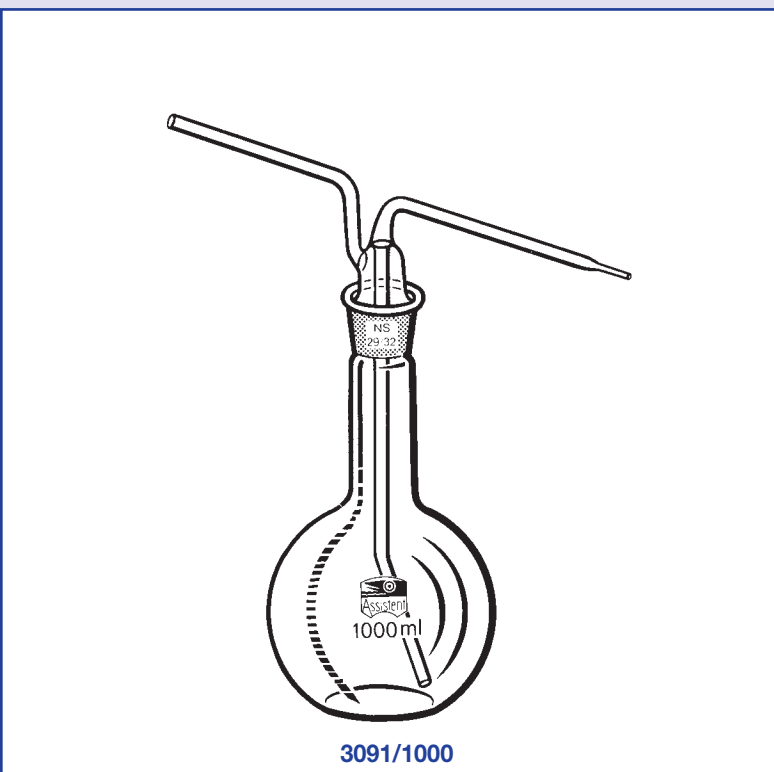
2993/... “Assistent” NS cover stoppers of PTFE on request

3091/... “Assistent” Washing bottles (spray bottles)

DURAN®/borosilicate glass 3.3
with interchangeable spray tube NS 29/32
Capacity 250 500 1000 ml
[3091/250](#) [3091/500](#) [3091/1000](#)

3092/... “Assistent” Spare spray tubes DURAN®/ borosilicate glass 3.3, with standard ground NS 29/32

[3092/250](#) [3092/500](#) [3092/1000](#)



[3091/1000](#)

General Laboratory Apparatus



9102/... "Assistent" Washing bottles (spray bottles) of polyethylene, flexible, with spray tube

100	250	500	1000 ml
9102/100	9102/250	9102/500	9102/1000

9104/... "Assistent" spray bottles of polyethylene, yellow colored (laboratory safety-bottles) with German security-inscriptions acc. to DIN

250	500	1000 ml
9104/250	9104/500	9104/1000

Isopropanol	Hexan
Ethanol	Petrolether
Essigsäure-ethylester (Ethylacetat)	Benzin
Wasser dest.	Toluol
Dimethylformamid	Xylol
Aceton	Acetonitril
Methanol	Essigsäure
Methylethylketon (MEK)	Heptan



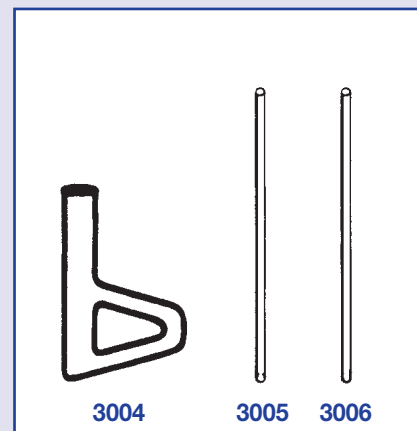
9102

9104

3004 Melting point determination tubes acc. to Thiele, DURAN®/borosilicate glass 3.3 approx. 120x20 mm

"Assistent" Melting point determination tubes, approx. 90 x 1,5 mm outs. diam., 100 in a glass vial

3005 open ends
3006 one end closed

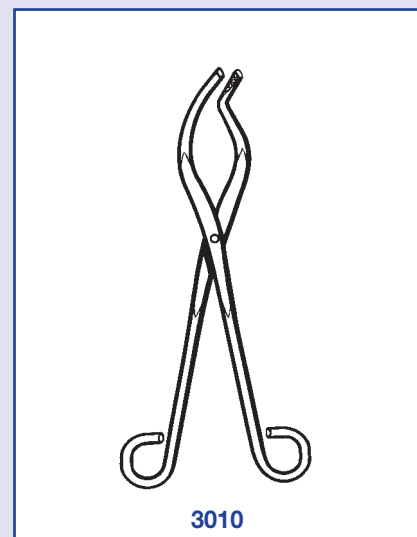


3004

3005

3006

3010 "Assistent" Crucible tongs, stainless steel double bent, length approx. 22 cm



3010



Liebig-Laboratory - Gießen - Germany



General Laboratory Apparatus



“Assistent” Funnels

3990/... “Assistent” Funnels, DURAN®/borosilicate glass 3.3 angle approx. 60°, sloping stem
top diam. approx.

3	3,5	4	4,5	5 cm
3990/3	3990/35	3990/4	3990/45	3990/5
5,5	6	7	8	10 cm
3990/55	3990/6	3990/7	3990/8	3990/10

3991/... Analytical Funnels, borosilicate glass 3.3, ripped, for rapid filtration, long stem, angle of 60°

65	80	110 mm Ø
.../65	.../80	.../110

4000/... “Assistent” Funnels, AR®/soda glass angle approx. 60°, sloping stem**
top diam. approx.

3	3,5	4	4,5	5 cm
4000/3	4000/35	4000/4	4000/45	4000/5
5,5	6	7 cm		
4000/55	4000/6	4000/7		
8	10	12	15	18 cm
4000/8	4000/10	4000/12	4000/15	4000/18
20	25	30 cm		
4000/20	4000/25*	4000/30*		

* borosilicate glass 3.3

4001/... “Assistent” powder funnels, AR®-/soda glass short, wide stem
top diam. approx..

4	5	6	8 cm
4001/4	4001/5	4001/6	4001/8
10	12	16 cm	
4001/10	4001/12	4001/16	

4002/... Powder funnels, polypropylene, transparent
outs.diam.

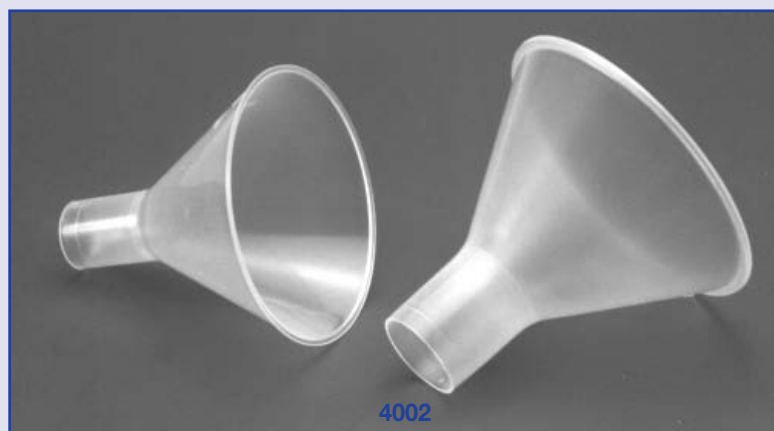
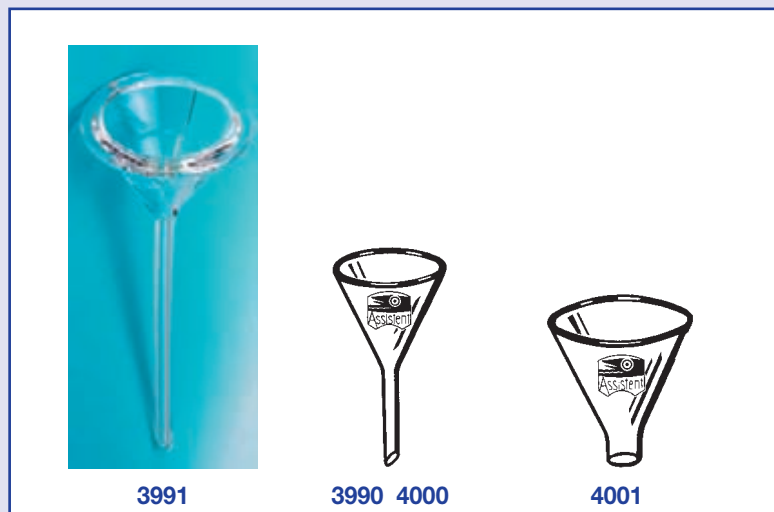
65	80	100	120	150 mm
.../65	.../80	.../100	.../120	.../150

9050/... “Assistent” funnels of polyethylene
top diam. approx.

6	8	10	12 cm
9050/6	9050/8	9050/10	9050/12
14	16	20 cm	
9050/14	9050/16	9050/20	

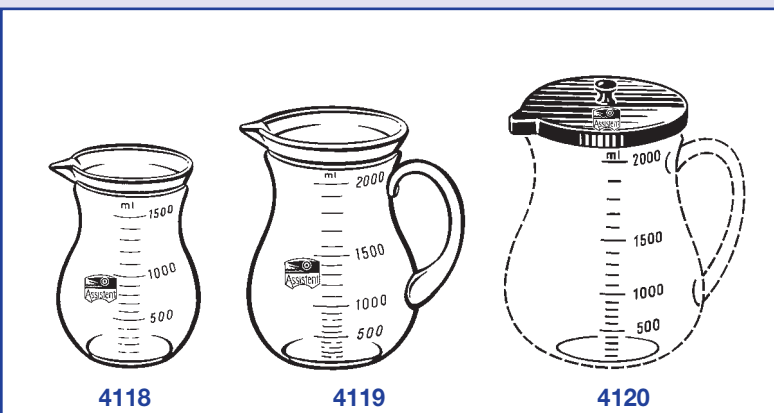
9051/... “Assistent” funnels of polypropylene (analytical funnels), fluted inside surface, useful for quick filtration
diam.

25	35	45	65	80 mm
9051/25	9051/35	9051/45	9051/65	9051/80
100	120	150	180 mm	
9051/100	9051/120	9051/150	9051/180	





General Laboratory Apparatus



“Assistent” Urine Specimen Containers

“Assistent” Urine specimen jars, curved shape, with moulded scale, with spout

4118/... without handle

4119/... with handle

capacity	without handle	with handle
250 ml	4118/250	4119/250
500 ml	4118/500	4119/500
1000 ml	4118/1000	4119/1000
1500 ml	4118/1500	4119/1500
2000 ml	4118/2000	4119/2000

4120 Covers of stainless steel
for urine specimen jars of 1,5 and 2 l



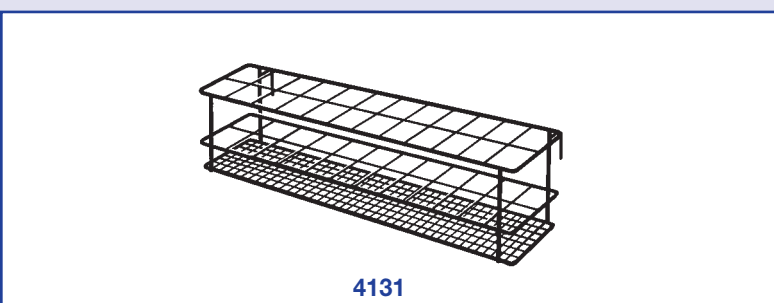
9117 “Assistent” Urine collecting bottles
of polyethylene, square, with screw cap and scale up to 2000 ml, total capacity 2500 ml

9117/1 “Assistent” Urine collecting containers, CE
SAN-plastic, with cover, with double approximate scale, capacity 2000 ml

9118 “Assistent” Urine collecting bottles
of polyethylene, brown, square, with screw cap and scale up to 2000 ml



4130 “Assistent” Trays of wire, white plastic-coated, with carrying handle, for 12 urine specimen jars No. 4125 or 4118/250, with compartment for ward records and interchangeable plain label for ward name; with adaptable rack for 24 test tubes or centrifuge tubes, for transporting blood specimens without jars and tubes.



4131 Spare wire racks, plastic-coated, white, for 24 tubes up to 17 mm diam.

General Laboratory Apparatus



“Assistent” Urine Specimen Containers

- 4115/1** Urine specimen containers, disposable, polypropylene, with red snap-cover and lateral nipple, 125 ml
- 4115/2** Urine specimen containers, polypropylene, graduated, 125 ml, with green screw cover and marking area



4115/1

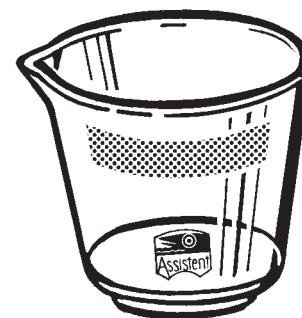


4115/2

- 4122** “Assistent” Urine specimen jars, curved shape, with spout, without handle, without scale, height approx. 70 mm, max. outs. diam. approx. 60 mm, capacity approx. 75 ml
- 4125** “Assistent” Urine specimen cups, with spout and frosted label for inscription, without handle, stackable, capacity approx. 150 ml



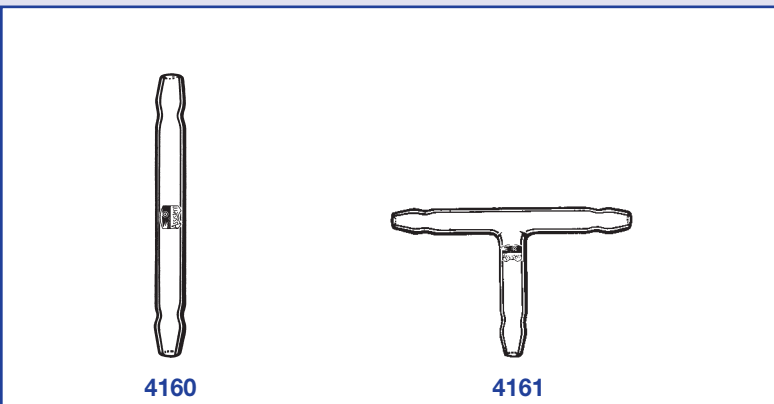
4122



4125



General Laboratory Apparatus



4160

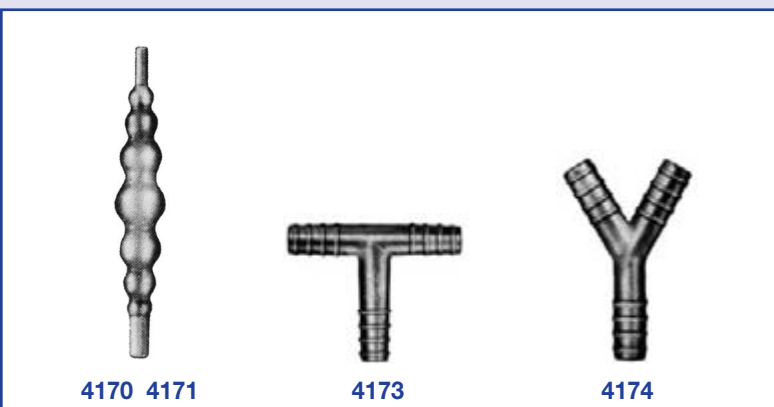
4161

“Assistent” Connectors and Weighing Bottles

4160/... “Assistent” Tubing connectors of glass
 approx. 80x8 100x10 120x12 mm
4160/8 4160/10 4160/12

“Assistent” Tubing connectors of glass with tubeolive
 Length of arms 40 45 50 mm
 outs. diam. approx. 6 8 10 mm

4161/... T-shape **4161/6 4161/8 4161/10**



4170 4171

4173

4174

“Assistent” Tubing connectors universel, for tubing
 ins. diam. approx. 5–17 mm

4170 of glass

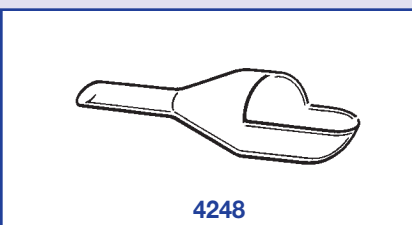
4171 of polypropylene

“Assistent” Tubing connectors of polypropylene for tubing
 ins. diam.

approx. mm 3–4 4–5 6–7 8–9 10–11

4173/... T-shape **.../4 .../6 .../8 .../10 .../12**

4174/... Y-shape **.../4 .../6 .../8 .../10 .../12**



4248

“Assistent” Weighing funnels, DURAN®/borosilicate
 glass 3.3

4248/3 capacity approx. 3 ml, length approx. 70 mm

4248/6 capacity approx. 6 ml, length approx. 80 mm

4248/10 capacity approx. 10 ml, length approx. 105 mm



4250

4251

4250/... “Assistent” Weighing bottles, tall form,
 DURAN®/borosilicate glass 3.3, with interchangeable
 NS-cover and frosted label

Height approx. 40 50 50 70 80 80 mm

Outs. diam. approx. 25 30 40 35 40 50 mm

Capacity approx. 10 20 40 45 70 110 ml

.../1 .../2 .../3 .../4 .../5 .../6

4251/... “Assistent” Weighing bottles, low form, bottom of
 DURAN®/borosilicate glass 3.3, with interchangeable
 NS-cover and frosted label

Height approx. 30 30 30 30 30 30 mm

Outs. diam. approx. 30 35 40 50 60 80 mm

Capacity approx. 10 15 20 30 45 80 ml

.../10 .../11 .../12 .../13 .../14 .../16

General Laboratory Apparatus



“Assistent” Equipment for Water Determination

Sediment cones acc. to Imhoff 1000 ml

4274 Sediment cones acc. to Imhoff, plastic, SAN, graduated, without stopcock

- 0– 2 ml in 1/10 ml
- 2– 10 ml in 1/2 ml
- 10– 40 ml in 1/1 ml
- 40– 100 ml in 2/1 ml
- 100–1000 ml in 50/1 ml

4274/1 Sediment cones acc. to Imhoff, plastic, SAN, graduated, with screw cap at the outlet

4275 of glass, graduation as above, without stopcock, borosilicate glass 3.3

4276 of glass, without stopcock, borosilicate glass 3.3 graduated

- 0– 2 ml in 1/10 ml
 - 2– 10 ml in 1/2 ml
 - 10– 40 ml in 1/1 ml
 - 40–100 ml in 2/1 ml
- with ring mark at 1000 ml

4276/1 with stopcock, graduation as above

4277 “Assistent” Wooden racks for 4 sediments cones

4277/2 for 2 sediments cones

4279 Brushes for sediment cones, with wooden handle

- Total length: 700 mm
- Brush length: 430 mm
- Upper brush diam. 130 mm
- Lower brush diam. 30 mm

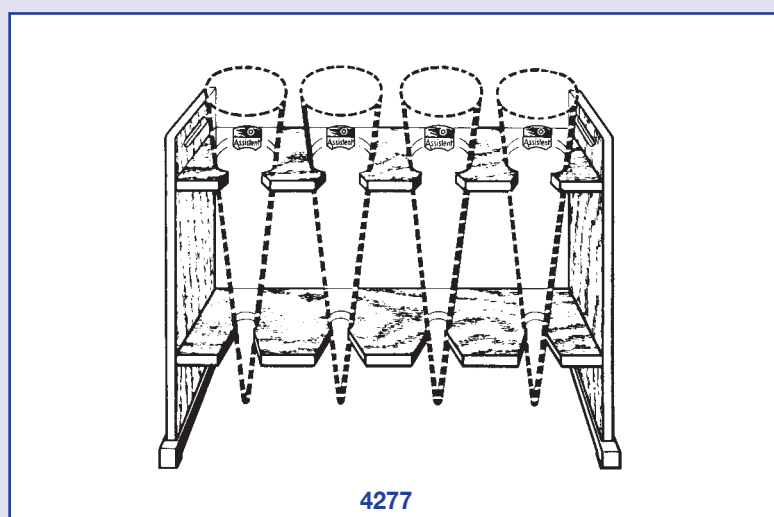


4274 4275

4274/1

4276

4276/1



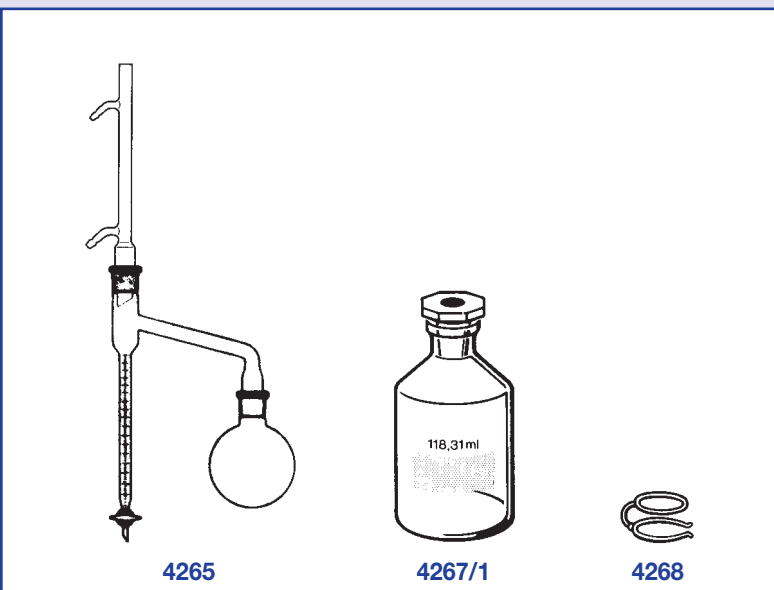
4277



4279



General Laboratory Apparatus



“Assistent” Equipment for Water Determination

Water determination apparatus acc. to Dean-Stark
(xylene method), DURAN®/borosilicate glass 3.3

4265 complete apparatus

Spare parts:

4265/1 Measuring tubes with stopcock, fused graduation
“ASSISTENT-PERMANENT” 10 ml: 1/10

Flasks, DURAN®/borosilicate glass 3.3,
with standard ground, reinforced ground neck marked
with standard ground size, without stopper

1913/500 round bottom
capacity 500 ml, NS 29/32

“Assistent” Condensers, DURAN®/borosilicate glass 3.3,
with cone and socket ground

1982/4029 acc. to Liebig
length to jacket approx. 40 cm
cone and socket NS 29/32

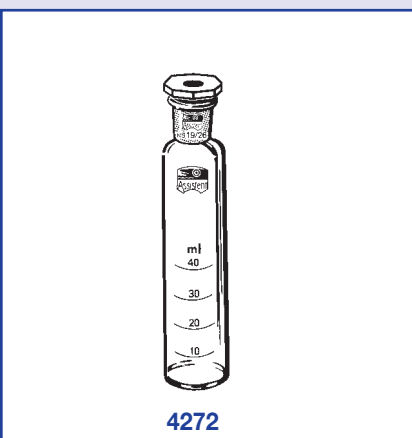
4267/... Oxygen bottles acc. to Winkler
for the determination of oxygen dissolved in water
with interchangeable plastic stopper and frosted
label, capacity precisely adjusted

4267/1 for bottles 100–150 ml, NS 14,5

4267/2 for bottles 250–300 ml, NS 19

4268 Stopper holders for No.4267

4272 “Assistent” Shaking bottles
with 4 marks at: 10, 20, 30 and 40 ml,
with polyethylene stopper NS 19126



1469/... Gas washing bottles acc. to Drechsel with head,
DIN 12 596, with standard ground NS 29/32, size of
ground indicated on bottle and head with stopcock,
safety funnel and two rubber stoppers, with stable
base and stoppered tubulature at bottom.

100 250 500 1000 ml

1469/100 1469/250 1469/500 1469/1000

1469/1 “Assistent” Spare washing bottle heads,
DURAN®/borosilicate glass 3.3, with standard
ground NS 29/32

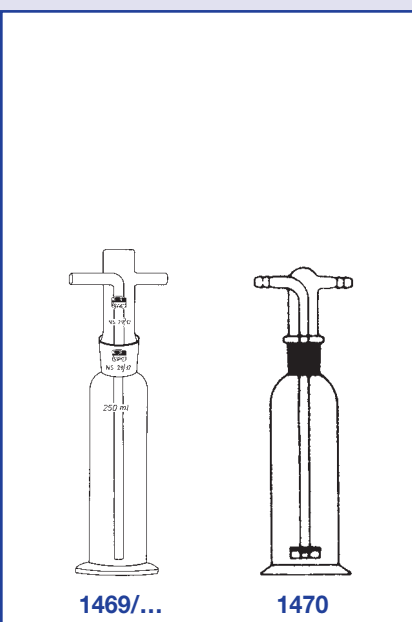
1470/... “Assistent” Gas washing bottles with filter disc,
diam. 22 mm, porosity 1

100 250 500 1000 ml

1470/100 1470/250 1470/500 1470/1000

1470/1 “Assistent” Spare washing bottle heads
DURAN®/borosilicate glass 3.3, with filter disc and
standard ground NS 29/32

washing bottle heads with filter disc with other porosities are
also available.



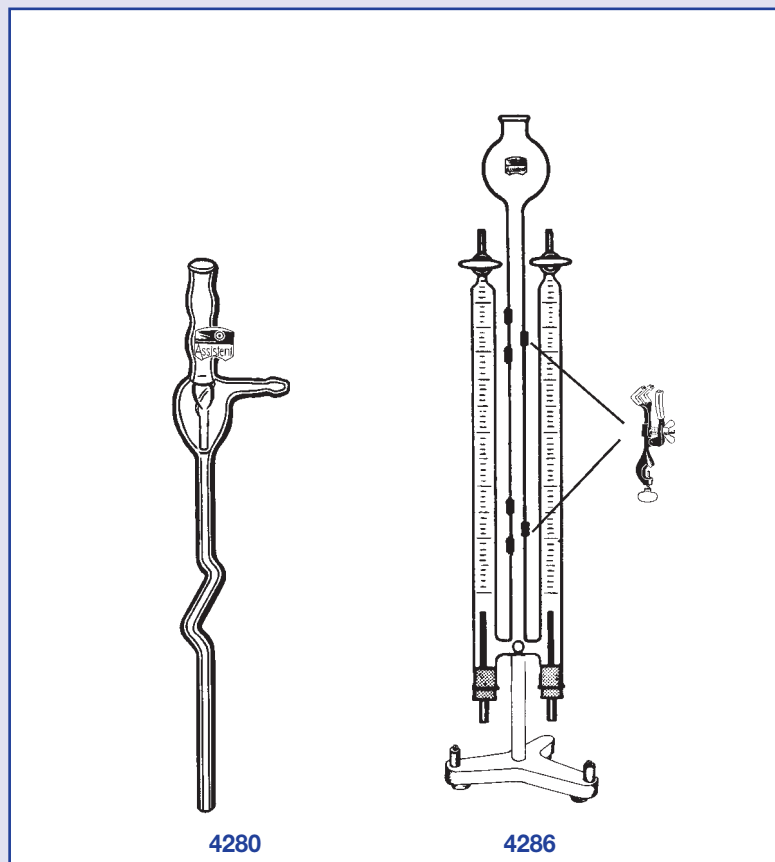
General Laboratory Apparatus



“Assistent” Laboratory Equipment

Water decomposition apparatus (voltmeter) acc. to Hofmann 0–60:1/5 with metal stand, teaching aid

- 4285** with platinum electrodes
- 4286** with carbon electrodes
- 4287** Glass part
- 4288** Platinum électrodes
- 4289** Carbon électrodes



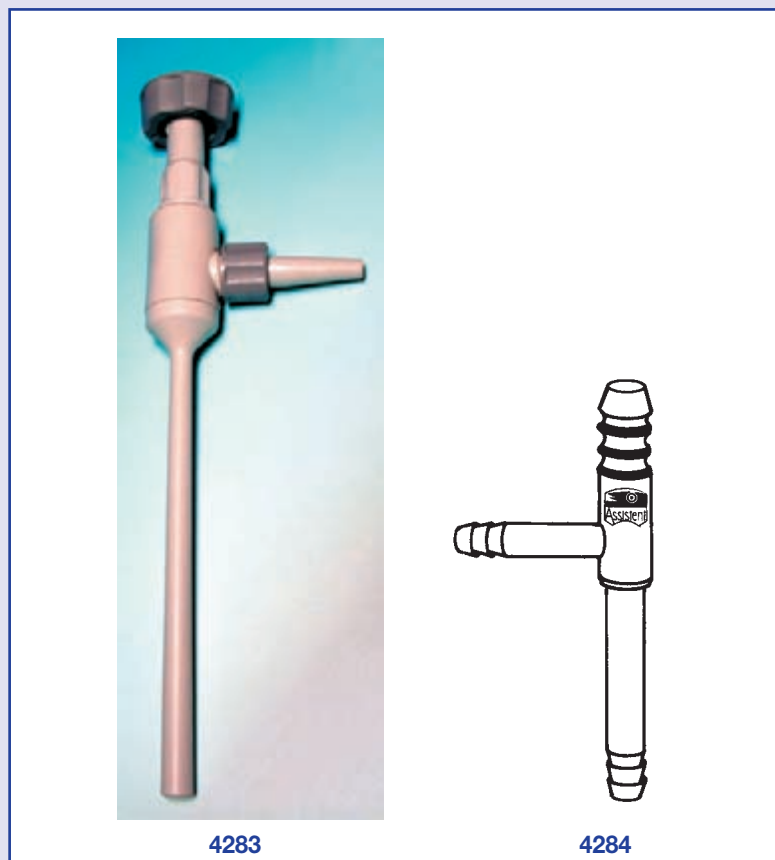
4280 **Water jet pumps** acc. to Geissler, of glass

4283 “Assistent” **Water jet pumps** of polypropylene with sleeve nut R 3/4", thread adapter R 1/2", water inlet nozzle (hose nipple 10-12 mm diam.) and vacuum connection (hose nipple 6–10 mm diam.), with non-return valve, resistant to Spare parts: temperatures up to +80 °C (permanent use)

4283/4 **Thread adapters** R 3/8"

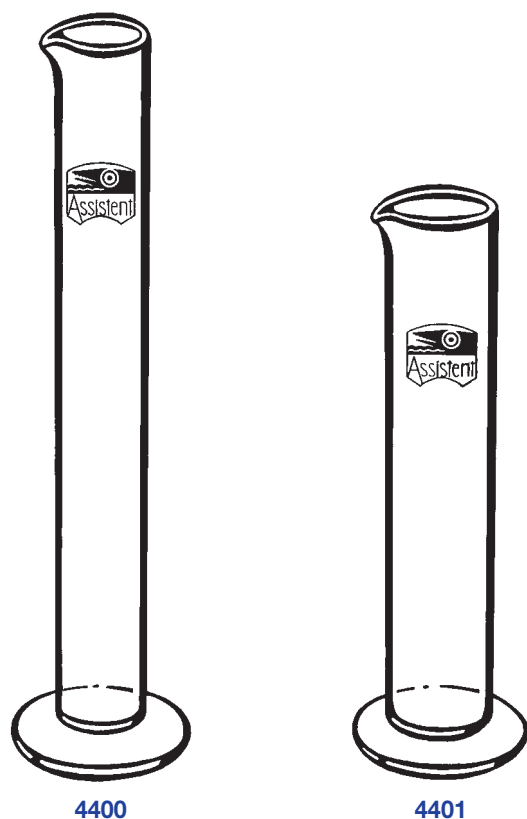
4283/5 **Thread adapters** M 22 x 1 Carbon électrodes

4284 **Water jet pumps** of metal





General Laboratory Apparatus



“Assistent” Laboratory Equipment

4400/... “Assistent” **Cylinders**, clear glass, tall form, with circular base and spout, without graduation, for hydrometers, alcoholometers etc.

	Height approx. mm	Outs. diam. approx.	Capacity approx. ml
4400/1	110	14	5
4400/2	140	14	10
4400/3	110	19	15
4400/4	170	19	25
4400/5	195	24	50
4400/6	175	28	60
4400/7	250	29	100
4400/8	210	39	150
4400/9	265	39	200
4400/10	325	39	250
4400/11*	400	48	500
4400/12*	440	65	1000
4400/13*	490	85	2000

* hexagonal base

4401/... “Assistent” **Cylinders**, clear glass, low form, with circular base and spout, without graduation

	Height approx. mm	Outs. diam. approx.	Capacity approx. ml
4401/1	80	17	5
4401/2	90	20	10
4401/3	130	24	25
4401/4	140	29	50
4401/5	155	34	75
4401/6	170	39	100
4401/7	170	48	150
4401/8	195	48	200
4401/9	240	48	250
4401/10	290	48	300
4401/11	260	65	500
4401/12	295	80	1000
4401/13	345	105	2000

General Laboratory Apparatus



“Assistent” Plastic Bottles

“Assistent” Bottles of polyethylene, flexible, with screw cap

9100/...	narrow neck	capacity ml
	9100/30	30
	9100/50	50
	9100/100	100
	9100/250	250
	9100/500	500
	9100/1000	1000
	9100/2000	2000
	9100/5000	5000 with handle
9101/...	wide neck	capacity ml
	9101/50	50
	9101/100	100
	9101/250	250
	9101/500	500
	9101/1000	1000
	9101/2000	2000



9100



9101

9103/... “Assistent” Dropping bottles of polyethylene, with dropping tip and attached cap

	9103/10	10
	9103/30	30
	9103/50	50
	9103/100	100
	9103/250	250
	9103/500	500



9103



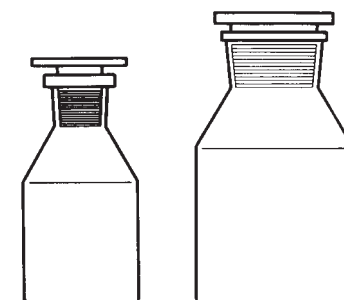
9105

9105/... “Assistent” Bottles of polyethylene, narrow neck, high shoulder, with screw cap

	narrow neck	capacity ml
	9105/50	50
	9105/100	100
	9105/250	250
	9105/500	500
	9105/1000	1000

“Assistent” Bottles of polypropylene, conical shoulder, with NS stopper of polyethylene

9108/...	narrow neck	capacity ml	NS
	9108/100	100	14
	9108/250	250	19
	9108/500	500	24
	9108/1000	1000	29
9109/...	wide neck	capacity ml	NS
	9109/100	100	29
	9109/250	250	34
	9109/500	500	45
	9109/1000	1000	60



9108

9109



General Laboratory Apparatus



9112



9115

“Assistent” Plastic bottles

9112/... “Assistent” Plastic bottles, PE-LD, brown, narrow neck

UV-beams protected, for light sensitive liquids

	capacity ml
9112/100	100
9112/250	250
9112/500	500
9112/1000	1000

9115/... “Assistent” Plastic bottles, PP, natural color, with Scale, wide neck autoclavable up to max.121° C

	capacity ml
9115/50	50
9115/100	100
9115/250	250
9115/500	500
9115/1000	1000



9116

9116/... “Assistent” Square bottles of polyethylene, with screw cap

narrow neck	capacity ml
9116/20	20
9116/50	50
9116/100	100
9116/250	250
9116/500	500
9116/1000	1000

9116/9.. wide neck

	capacity ml
9116/9250	250
9116/9500	500
9116/91000	1000



9119

9130

9119 “Assistent” Spray bottles of polyethylene, adjustable jet, approx. 1000 ml

9130/... “Assistent” Aspirator bottles of polyethylene, narrow neck, with stopcock, with handle and screw cap

	capacity l
9130/5	5
9130/10	10
9130/25	25
9130/50	50

9131 Spare stopcock for above, polypropylene, 3/4" connection, alone

General Laboratory Apparatus



“Assistent” Plastic Jars and Dishes

9060/... “Assistent” Jars of polyethylene white, with wide base suitable for storing and cleaning of pipettes: no damage of pipette tips owing to the elastic material

9060/10 approx. 10 x 5 cm diam.

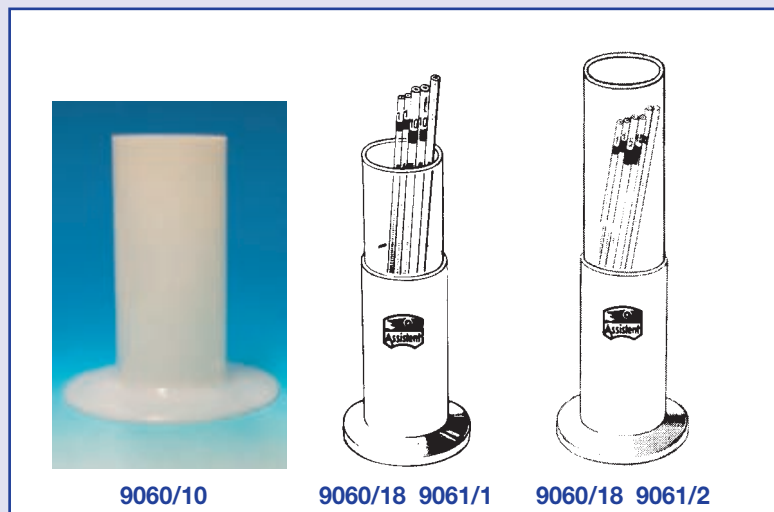
9060/18 approx. 18 x 8 cm diam.

9060/40 approx. 40 x 8 cm diam.

9061/... “Assistent” Extension top (“DBGM”) of Plexiglas® – transparent, for jar No. 9060/18

9061/1 for total height of 30 cm

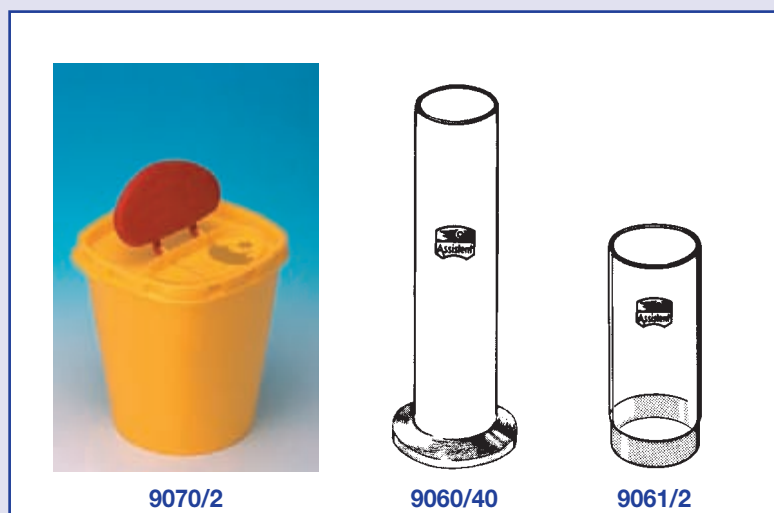
9061/2 for total height of 40 cm



9070/2 Disposal-Box of 2 l of polypropylene (according to UN-regulations)

The UN-examination is consisting of:

- emission test
- “GS” test
- UN test, licensed for the transport of infectious waste
- filling mark
- cover with incorporated closure



“Assistent” Trays of PVXC, stackable

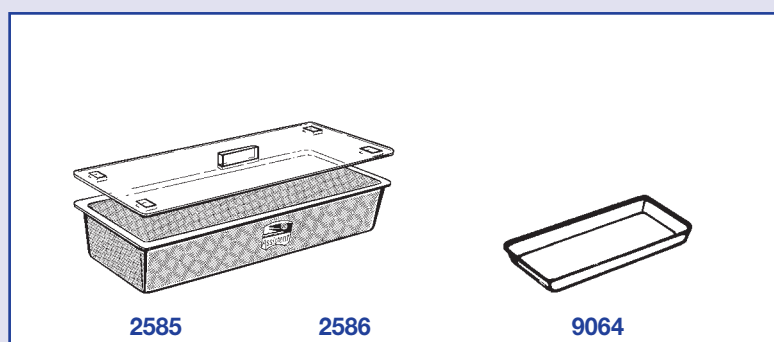
2585 approx. 47 x 17x8 cm

2586 Cover of Plexiglas®, transparent, for No. 2585

9064/... “Assistent” Dishes of melamine, white, stackable

9064/1 approx. 35 x 25 x 4 cm outs.

9064/2 approx. 29 x 16 x 3,5 cm outs

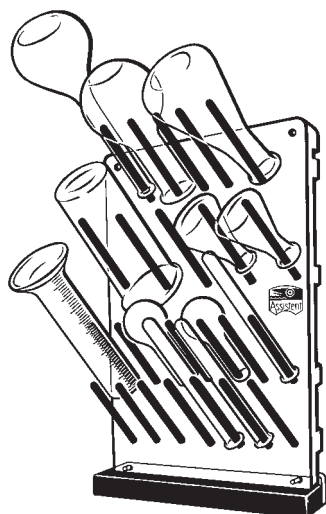




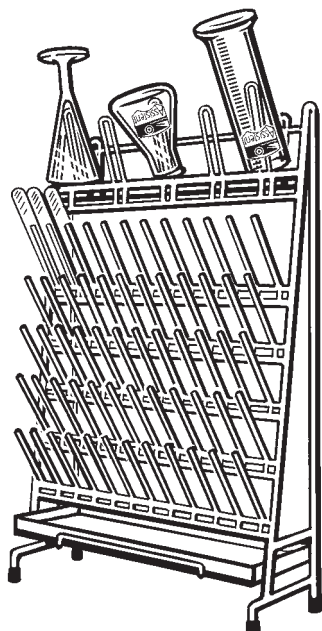
General Laboratory Apparatus

“Assistent” Plastic Jars and Dishes

9025 “Assistent” Draining boards of Plexiglas®
approx. 35x30 cm, white, with blue pegs and trough



9025

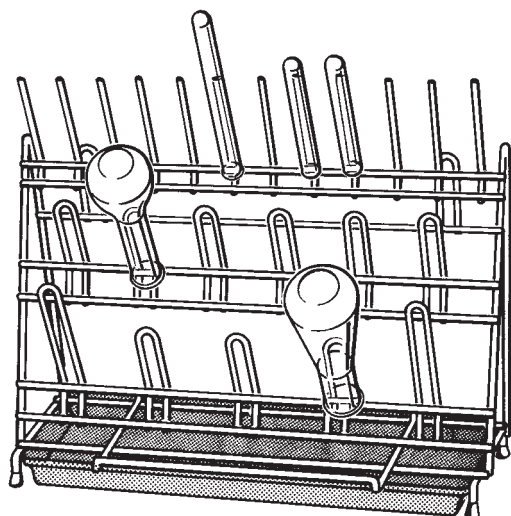


9027

“Assistent” Draining racks of wire, plastic-coated, white,
with plastic trough, for wall mounting or standing

9027 approx. 42 x 15 x 61 cm,
for 60 test tubes and 5 flasks

9028 approx. 42 x 17 x 30 cm,
for 12 test tubes and 11 flasks



9028

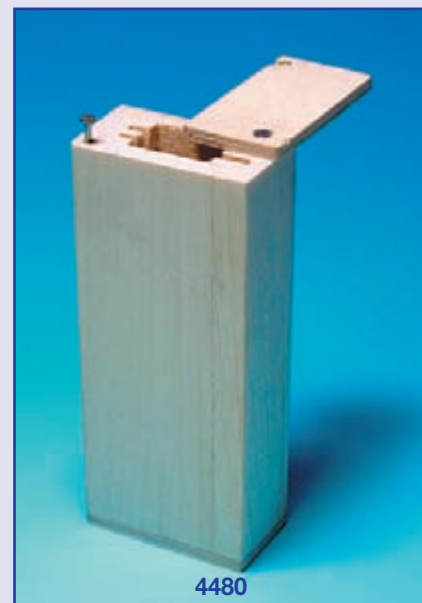
General Laboratory Apparatus



“Assistent” Mailing containers

“Assistent” Mailing containers for infectious material

4480 Micro slide mailers, wooden, for 2 micro sliders (without sliders)



4509 Mailing containers for faeces complete, mounted, consisting of:

4509/1 glass tube, flat bottom, approx. 70 x 22 mm

1594/22 cork for above

4509/3 metal spoon

4509/4 aluminium tube with screw cap, well sealed, rust-proof

4509/5 wooden box with cover

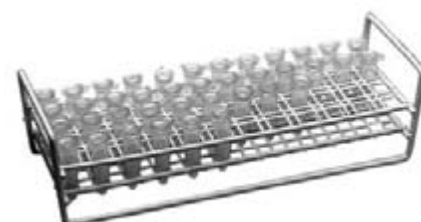


9040 “Assistent” Reaction tubes of polypropylene with cover, approx. 1,5 ml

2818 Rack for 48 reaction tubes (4 x 12) height approx. 4 cm, with handles



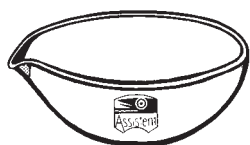
9040



2818



General Laboratory Apparatus



7000



7002

“Assistent” Articles of Porcelain

7000/... “Assistent” Evaporating dishes of porcelain,
halfround, with spout, glazed inside and outside

Diam. approx. mm

63	70	80	100	125	150
.../6	.../7	.../8	.../10	.../12	.../15

7002/... “Assistent” Evaporating dishes of porcelain,
flat type, glazed, with spout

80 100 mm diam. approx.

.../8	.../10
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7005/... “Assistent” Buechner funnels of porcelain,
for filter paper of

40 55 70 90 mm diam.

.../40	.../55	.../70	.../90
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7015/... “Assistent” Casseroles of porcelain,
glazed, with spout and handle

100 125 mm diam. approx.

.../100	.../125
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7020/... “Assistent” Measuring jugs of porcelain,
with spout and handle, with scale

Capacity ml

50	100	250	500	1000
.../50	.../100	.../250	.../500	.../1000

7030/... “Assistent” Mortars of porcelain,
with spout, glazed outside, rough inside

diam. approx. mm

60	80	100	130	150
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height approx. mm

32	40	50	63	65
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capacity approx. ml

20	70	160	250	400
.../6	.../8	.../10	.../13	.../15

dish-washer proof up to + 65 °C

7031/... “Assistent” Pestles of porcelain
with rough grinding surface, for above mortars

.../6	.../8	.../10	.../13	.../15
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dish-washer proof up to + 65 °C

7035 “Assistent” Boats of porcelain
(combustion boats), total length approx. 90 mm.

7040/... “Assistent” Crucibles of porcelain,
medium high form, glazed, without cover

diam. approx. mm

25	30	35	40	45	50
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height approx. mm

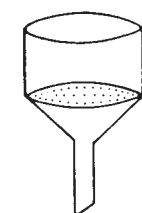
20	25	28	32	36	40
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Capacity ml

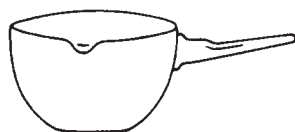
5	10	15	20	38	49
.../25	.../30	.../35	.../40	.../45	.../50

7041/... “Assistent” Covers of porcelain
for above crucibles

.../30	.../35	.../40	.../45	.../50
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7005



7015



7020



7030

7031



7035



7040

7041

Hydrometers and Thermometers





Hydrometers and Thermometers



3232



3235

“Assistent” Digital Thermometers and Accessories

- 3232** “Assistent” Digital thermometer, electronic, CE
multi-purpose thermometer with probe of stainless steel and extension cord.
- length of cable: approx. 100 cms
 - length of metal probe: approx. 10 cms
 - length of metal probe with handle: approx. 19 cms
 - temperature measuring range:
 - 50 °C up to +260 °C
 - temperature display resolution: 0.1 °C up to 0.5 °C
 - LCD-display
 - Selectable for Celsius and Fahrenheit
 - Adjustable measuring cycles “long” or “short”
 - Maximum-minimum display with temperature, programmable
 - Low battery signal indication
 - Count down timer 99 h, 59 min
 - Complete with battery and directions for use

- 3235** “Assistent” Digital thermometers “mini”
electronic, with memory, stainless steel probe and battery.
Range: -50 + 150 °C.
Resolution: 0,1 °C for -20 + 150 °C
Accuracy: better than 1 °C at -20 + 100 °C.
Battery life: approx. 5000 hours.
Ambient temperature for plastic casing: -10 + 40 °C.
Immersion: approx. 60 mm
- Operating instructions:
Right switch “ON”
Left switch “TEST” = normal temperature
Left switch “HOLD” = instantaneous display is retained, °C flashes.

- 3252** “Assistent pocket pH-meter, CE
practical, battery operated instrument, for measuring range pH 0.0 ... 14.0:0.1, with interchangeable electrode, calibration set, substances for standard solution pH 4.0/6.86 and 9.18, bottle of approx. 50 ml of KCL-solution for storing electrode, diam. of electrode approx. 1.2 cm, length of electrode approx. 8 cm, detailed operating instructions enclosed.

spare parts:

- 3252/1** **elektrode** alone with substances for standard solution
- 3252/2** **substances** alone for standard solutions
- 3252/3** **bottle** of approx. 50 ml KCL-solution storing the electrode



3252

Hydrometers and Thermometers



“Assistent” Thermometers

Thermometers based on the principle of Galileo Galilei.

The temperature is indicated by colored spheres. Brilliant long lasting colors. The production of these thermometers is extremely intricate and they are almost entirely hand-made. The liquid is ozonefriendly and not highly inflammable and no toxic fumes are emitted.

Colors of spheres: red, cognac, blue, green or multi-colored.

3510/028 range +18 up to +26 °C : 2 °C (5 spheres)
height approx. 28 cm (not available in green)

3510/1 range +18 up to +26 °C : 2 °C (5 spheres)
height approx. 33 cm

3510/2 range +18 up to +24 °C : 1 °C (7 spheres)
height approx. 44 cm

3510/3 range +17 up to +27 °C : 1 °C (11 spheres)
height approx. 64 cm

- Brilliant colours for years
- No cloudiness of the liquid
- No corrosion of the lead discs
- Highest accuracy of indication
- Three years' guarantee

3513 beech wood, varnished natural, coloured filling
length approx. -30 +50 °C, ca. 20 cm

3516 walnut finish, gold-coloured scale, coloured filling,
length approx. 12,5 cm, -10 +50 °C,

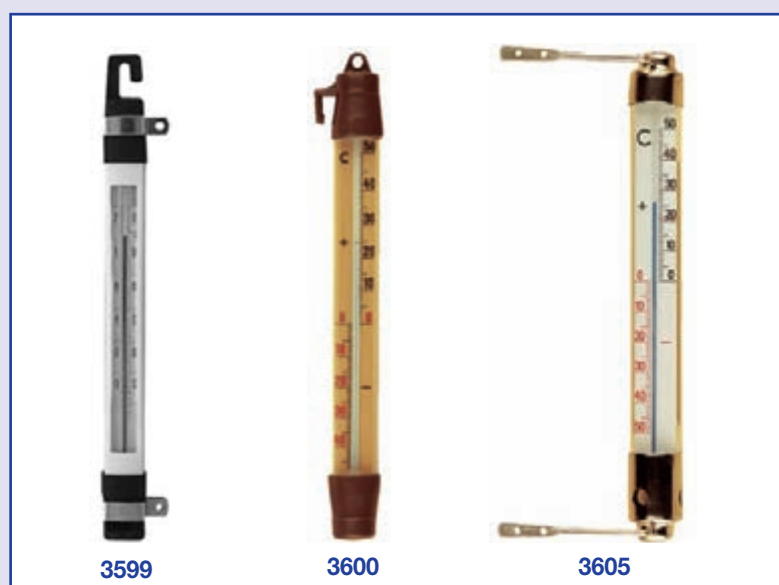
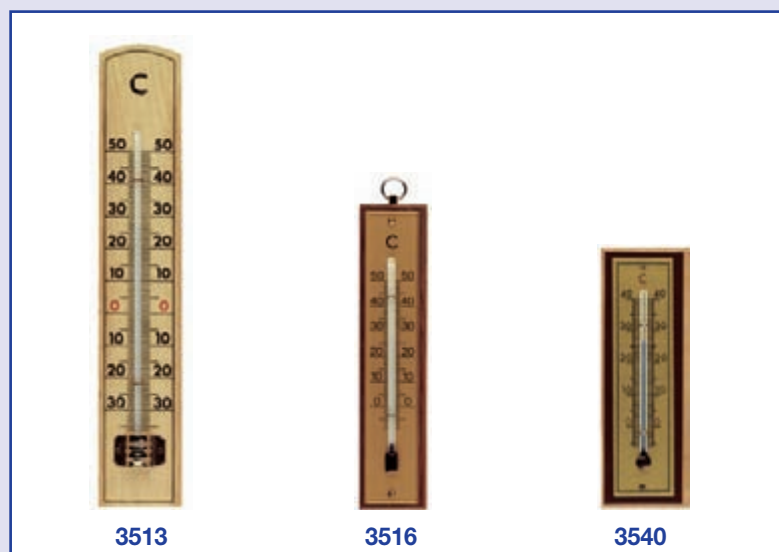
3540 beech wood, mahogany, polished,
bevelled edges, gold- or silver-coloured metal
scale, coloured filling
length approx. 0 +50 °C, ca. 11 cm

3599 Freezer thermometers, officially tested,
with holder, -35 °C +25 °C

3600 Thermometers for refrigerator, cylindrical plastic
housing for hanging on, coloured filling,
length approx. 21 cm, -40 +50 °C

Window thermometers length approx. 20 cm,
blue filling -50 +50°C

3605 fittings of metal
3606 fittings of plastic





Hydrometers and Thermometers



3622



3623

“Assistent” Thermometers

3622 Sauna thermometers,
of metal, circular, approx. 10 cm diam.
+20 +120 °C

3623 Sauna-hygrometers
of metal, circular, approx. 10 cm diam.



3626



3640



3645



3650

3626 Sauna sand-glasses (hour glasses),
natural beech wood, 15 min.,
length approx. 32 cm

3640 Maximum-minimum thermometers
acc. to Six with separate magnet,
light-coloured wood, polished, mercury-filled,
length approx. 21 cm, -35 +50 °C

3645 Maximum-minimum thermometers
with press button magnet, plastic -35 +50 °C
with holder, length approx. 20 cm

3650 Maximum-minimum thermometers
with press button magnet, plastic -35 +50 °C
with holder, length approx. 23 cm



3660



3661

3660 Barometer station
with thermometer and hygrometer, C-graduation
oak wood, approx. 26 x 11 cm

3661 artificial leather “buffalo”,
approx. 30 x 12 cm

Hydrometers and Thermometers



“Assistent” Thermometers

3655 Remote Weather station with sensor unit CE

Specifications:

Barometer

- Weather forecast indication by symbols
- Trend indication of atmospheric pressure

Thermometer

- Wireless temperature data transfer from 3 different remote sensor units
- Wireless transfer: 433 MHz frequency (UK: 418 MHz)
- Measuring range for main unit (indoor): 5°C to + 50°C
- Memory for Min / Max temperature
- Temperature alarm for channel 1
- Outdoor temperature trend indication
- Resolution: 0,1°C

Hygrometer

- Wireless humidity data transfer from 3 different remote sensor units
- Measuring range for relative humidity (indoor): 25 to 95%
- Memory for Min / Max humidity
- Humidity alarm for Channel 1
- Humidity trend indication

Radio Controlled Clock

- Time setting and synchronization by Radio Signal DCF-77 for Central Europe
- 24 h display format
- Date format: Day and month
- Day of week selectable in 5 languages (E, F, D, I, S)
- Time and date manually adjustable
- Moonphase
- Second time zone
- Dual crescendo alarm function, Snooze function (8 min.)
- Low battery indication
- Wall mount or table standing
- Incl. 3 batteries 'AAA' 1.5V

Size: 158 x 14 x 63 mm, Weight: 296 g

Remote Sensor unit

- Measuring range for remote sensor unit: Temperature: -20°C to +60 °C

Relative humidity: 25% to 95%

- Water resistant remote sensor unit with LCD display and LED indicator
- Range depends on base unit and location: 30 m
- Battery low indication
- Table stand, wall mount feature

Size: 92 x 60 x 20 mm, Weight: 63 g

3656 “Assistent” maximum-minimum thermometer, CE

- for measuring inside and outside temperature,
- present temperature/highest and lowest day temperature
- switchable °C/°F
- for hanging or standing features
- extremely thin cable, for easily leading through the window sealing
- waterproof exterior sensor, cable length ca. 1,20 m
- battery enclosed
- measuring range
 - outs.: - 50 °C/+ 60 °C (-58 °F/+140 °F)
 - ins.: - 10 °C/+ 50 °C (-14 °F/+122 °F)



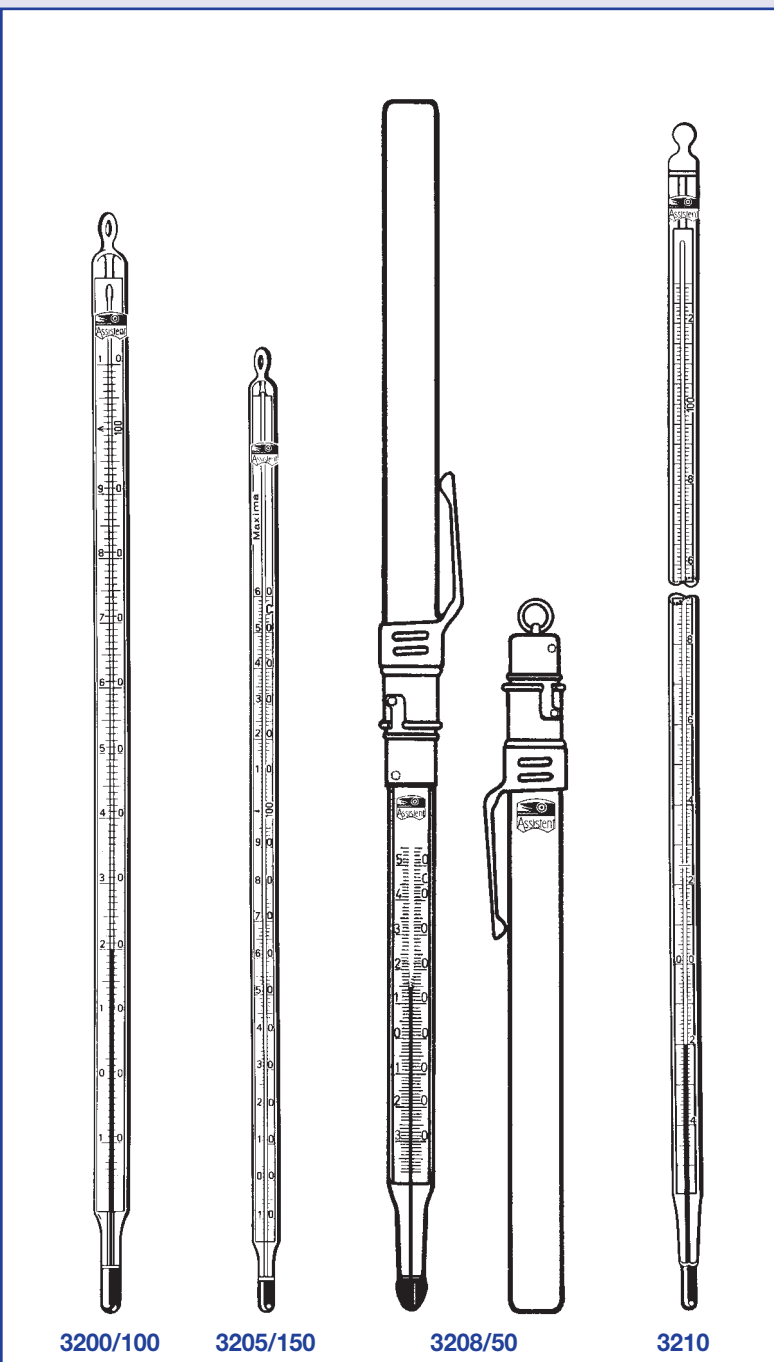
3655



3656



Hydrometers and Thermometers



3200/100

3205/150

3208/50

3210

“Assistent” Thermometers

Thermometers, general purpose, normal glass, enclosed scale, divided in 1 °C, diam. 7–8 mm, each in a tube

3200/... mercury-filled (Hg)

0 + 50	100	150	200 °C
.../50	.../100	.../150	.../200
250	300	360	420 °C
.../250	.../300	.../360	.../420

3201/... red filling (colored petrol)

0 + 50	100	150	200	250 °C
.../50	.../100	.../150	.../200	.../250

3202/100 graduated-stem, white back, mercury-filled, diam. 5,5–7 mm, 0 + 100 °C

3205/... Maximum thermometers for shaking enclosed scale, diam. 7–8 mm, reset of mercury by shaking each in a tube

3205/150 –10 + 150 °C : 1 °C, length approx. 26 cm

3205/200 –10 + 200 °C : 1 °C, length approx. 30 cm

Maximum-Thermometer + 200 °C can be used as control-thermometer for sterilizers.

3206 Maximum thermometers for shaking, for sterilizer temperature control, short type, length approx. 11 cm, blue reflecting, mercury-filled, +80 + 220 °C : 2 °C, each in a tube

3208/... Pocket thermometers, prismatic graduated glass stem, length approx. 14 cm, red or blue filling, in nickel case with bayonet lock and clip.

3208/50 –35 + 50 °C : 1 °C

3208/100 –10 + 100 °C : 1 °C

3210/... Precision thermometers normal glass, enclosed scale, mercury-filled Richter top finish with knob, diam. 8–9 mm, suitable for official testing, each in a tube.

3210/1 –10 + 50 °C in 0,5 °C 22 cm

3210/2 –10 + 50 °C in 0,1 °C 42 cm

3210/3 –10 + 100 °C in 1 °C 30 cm

3210/4 –10 + 100 °C in 0,5 °C 27 cm

3210/5 0 + 100 °C in 0,1 °C 55 cm

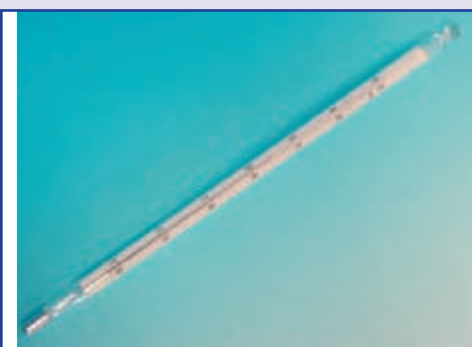
3210/6 –10 + 150 °C in 1 °C 30 cm

3210/7 –10 + 150 °C in 0,5 °C 35 cm

3210/8 –10 + 200 °C in 1 °C 35 cm

3210/9 –10 + 200 °C in 0,5 °C 35 cm

Other types of laboratory and precision thermometers are available as well.



Hydrometers and Thermometers



“Assistent” Anschuetz Thermometers

Thermometers acc. to Anschuetz

calibrated for total immersion, enclosed scale, Richter top finish, mercury-filled, each in a tube.

approx. 340 x 5–6 mm diam.

approx. 175 x 5–6 mm diam.

subdivision 0,1 °C

subdivision 0,2 °C

3213/... suitable for official testing

3213/8.. officially tested, with certificate

	with certificate	scale range	
3213/1	3213/81	– 10	+ 52 : 0,1 °C
3213/2	3213/82	+ 48	+102 : 0,1 °C
3213/3*	3213/83**	+ 98	+152 : 0,1 °C
3213/4*	3213/84**	+148	+202 : 0,1 °C
3213/5*	3213/85**	+198	+252 : 0,1 °C
3213/6*	3213/86**	+248	+302 : 0,1 °C
3213/7*	3213/87**	+298	+360 : 0,1 °C

* not suitable for official testing as too fine subdivision

** with factory test certificate instead of official certificate as too fine subdivision.

3214 Complete set of 7 thermometers

3214/8 Complete set of 7 thermometers with certificate of official testing

3216 Complete set of 7 thermometers in case, suitable for official testing,

3215/.... suitable for official testing

3215/8.. officially tested, with certificate

	with certificate	Scale range	
3215/1	3215/81	– 5	+ 52 : 0,2 °C
3215/2	3215/82	+ 48	+102 : 0,2 °C
3215/3	3215/83	+ 98	+152 : 0,2 °C
3215/4	3215/84	+148	+202 : 0,2 °C
3215/5*		+198	+252 : 0,2 °C
3215/6*		+248	+302 : 0,2 °C
3215/7*		+298	+355 : 0,2 °C

3225/... Distillation thermometers with standard ground

NS 14/23 immersion length with ground:

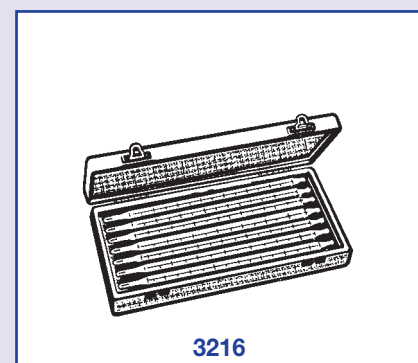
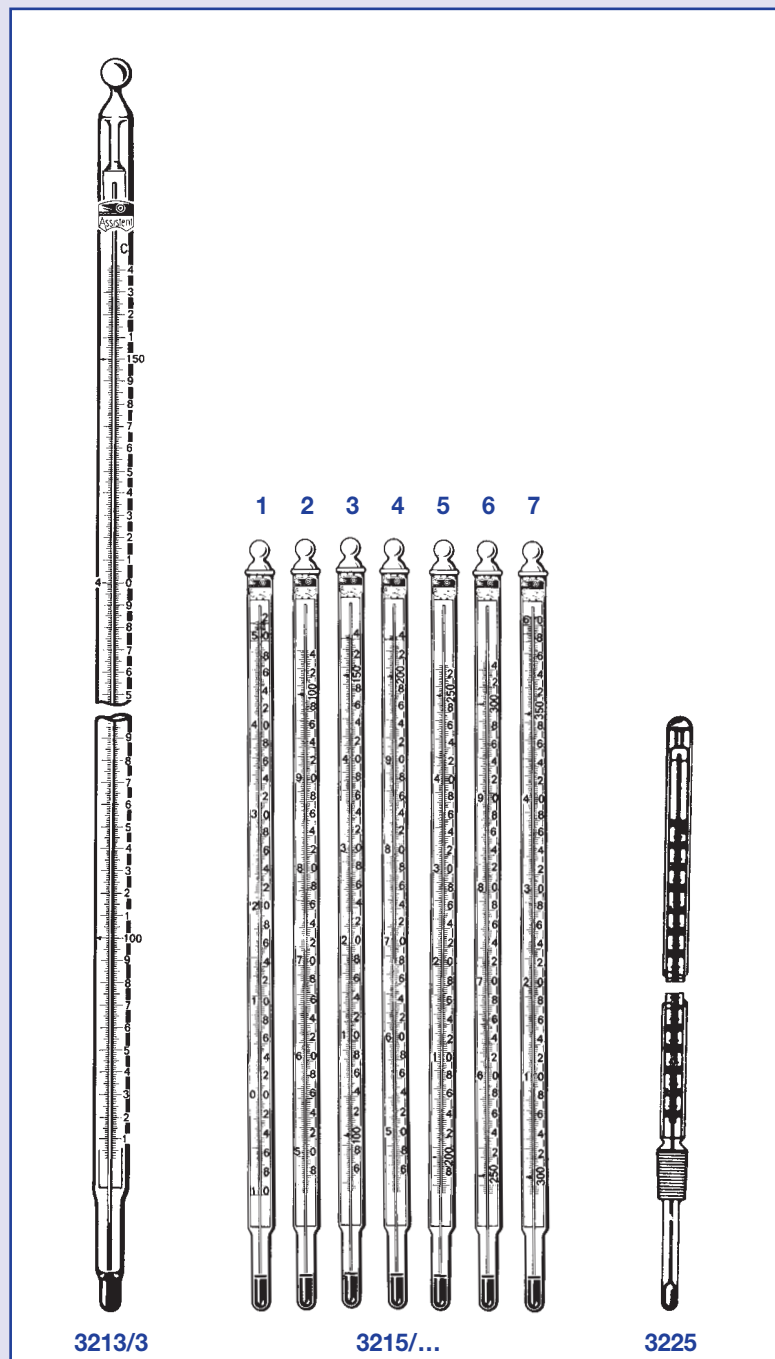
75 mm, immersion tube diam. approx. 7 mm,

blue reflecting, mercury-filled.

3225/150 –10 +150 °C : 0,5 °C

3225/250 –10 +250 °C : 1 °C

3225/360 –10 +360 °C : 1 °C



3216



Hydrometers and Thermometers

“Assistent” Hydrometers

General features and directions:

Reference temperatures of hydrometers for g/m^3 (spec. gravity, density), hydrometers acc. to DIN, and saccharimeters: 20 °C

alcoholometers for percentage by volume: 20 °C

alcoholometers for percentage by weight: 20 °C

all other instruments (except where otherwise stated): 15 °C

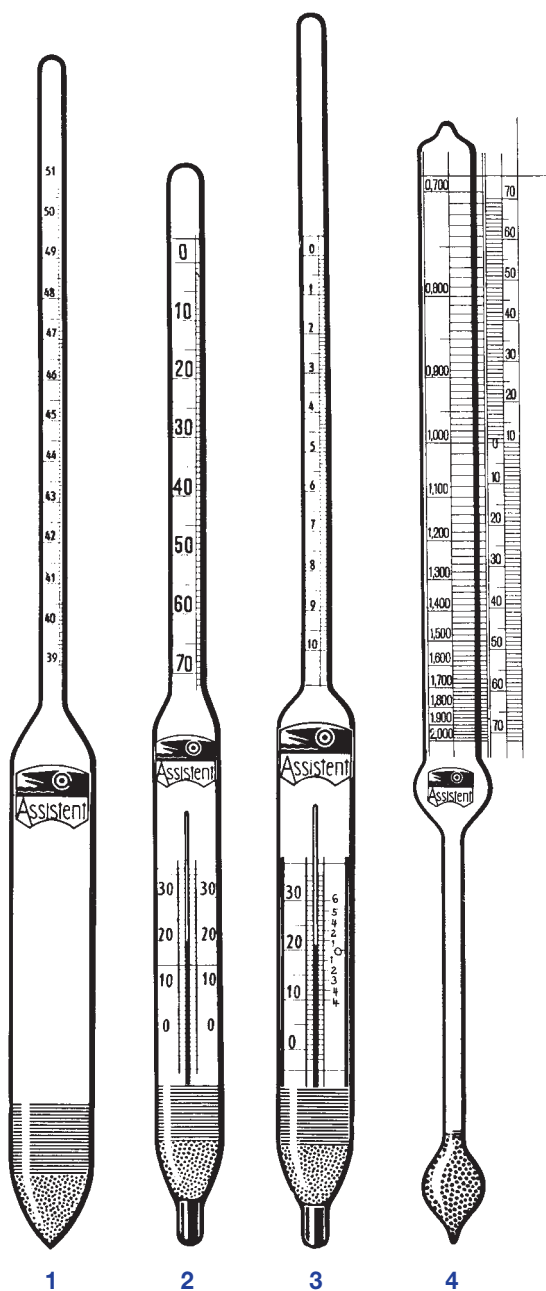
Hydrometers for other reference temperatures are also available. Please state the requirements in your order. Usually the hydrometers are calibrated for “reading below”. However, non-transparent liquids require “reading above”. If required, kindly mention it in your order.

The hydrometers are (except where otherwise stated) with paper scale, shot-weighted.

Thermometer range: 0 + 30/40 °C

Packing: each in a transparent solid plastic tube

Special types and hydrometers acc. to foreign standards are available as well.



- 1 Hydrometers API at 60 °F, petr. prod. ASTM 5H-58T
- 2 Hydrometer acc. to Baumé, Tp. 15 °C
- 3 Saccharimeters acc. to Brix Tp. 20 °C
- 4 Universal-Hydrometer acc. g/cm^3 and Baumé Tp. 20 °C

Hydrometers and Thermometers



“Assistent” Spec. Gravity Hydrometers

Spec. gravity hydrometers (density hydrometers) with paper scale, shot-weighted reference temperature: 20 °C

(Ranges up to 1000 g/cm³ are for liquids lighter than water, ranges from 1,000 to 2,000 are for liquids heavier than water.)

range of scale 0,060 g/cm³

Range	Cat. No.	Range	Cat. No.
0,600–0,660	.../1	1,300–1,360	.../13
0,650–0,710	.../2	1,360–1,420	.../14
0,700–0,760	.../3	1,420–1,480	.../15
0,760–0,820	.../4	1,480–1,540	.../16
0,820–0,880	.../5	1,540–1,600	.../17
0,880–0,940	.../6	1,600–1,660	.../18
0,940–1,000	.../7	1,660–1,720	.../19
1,000–1,060	.../8	1,720–1,780	.../20
1,060–1,120	.../9	1,780–1,840	.../21
1,120–1,180	.../10	1,840–1,900	.../22
1,180–1,240	.../11	1,900–1,960	.../23
1,240–1,300	.../12	1,960–2,000	.../24

without thermometer

6000/.. length approx. 28 cm, subdivisions 0,001 g/cm³

6001/.. length approx. 16 cm, subdivisions 0,001 g/cm³

6002/.. length approx. 32 cm, subdivisions 0,0005 g/cm³

with Thermometer

6004/.. length approx. 35 cm, subdivisions 0,001 g/cm³

6005/.. length approx. 35 cm, subdivisions 0,0005 g/cm³

range of scale 0,100 g/cm³

Range	Cat. No.	Range	Cat. No.
0,600–0,700	.../1	1,300–1,400	.../8
0,700–0,800	.../2	1,400–1,500	.../9
0,800–0,900	.../3	1,500–1,600	.../10
0,900–1,000	.../4	1,600–1,700	.../11
1,000–1,100	.../5	1,700–1,800	.../12
1,100–1,200	.../6	1,800–1,900	.../13
1,200–1,300	.../7	1,900–2,000	.../14

without thermometer

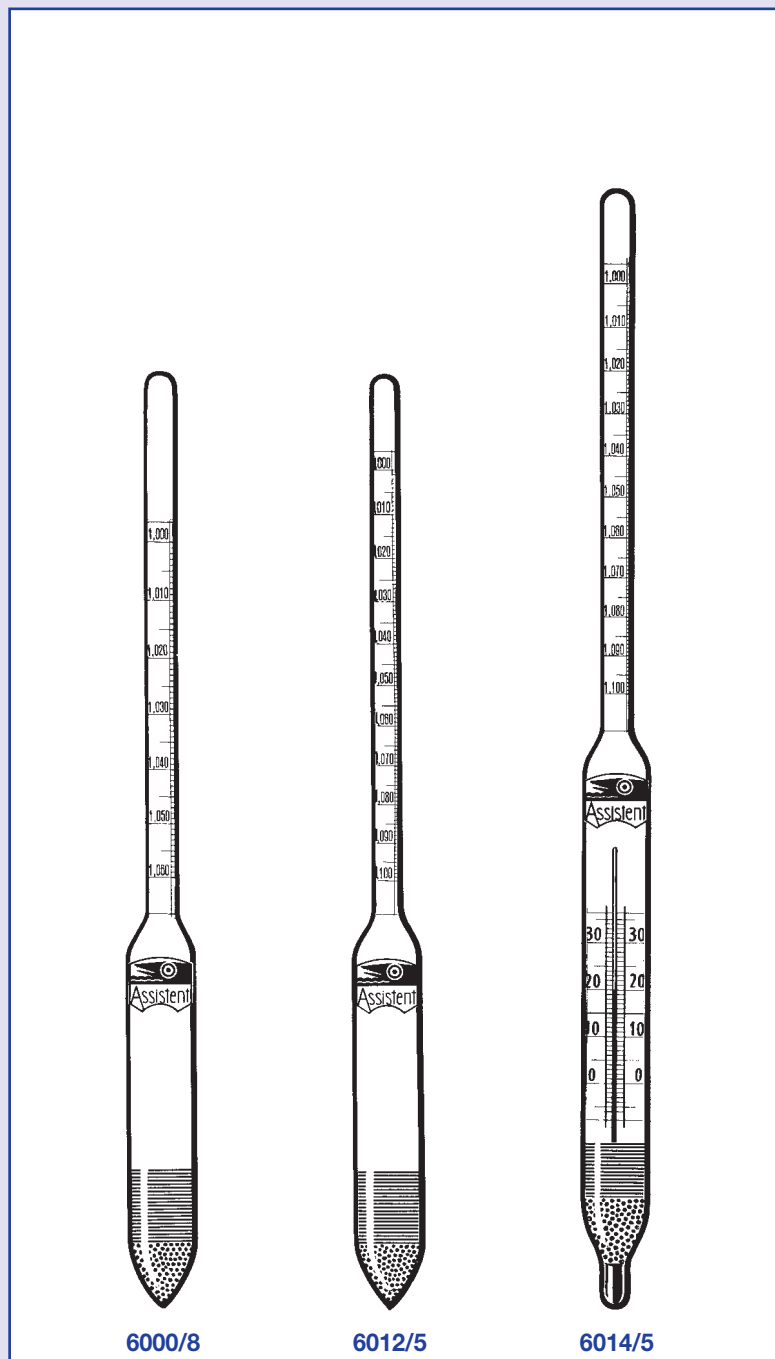
6012/.. subdivisions 0,001 g/cm³, length approx. 30 cm

6013/.. subdivisions 0,002 g/cm³, length approx. 25 cm

with thermometer

6014/.. subdivisions 0,001 g/cm³, length approx. 35 cm

6015/.. subdivisions 0,002 g/cm³, length approx. 30 cm



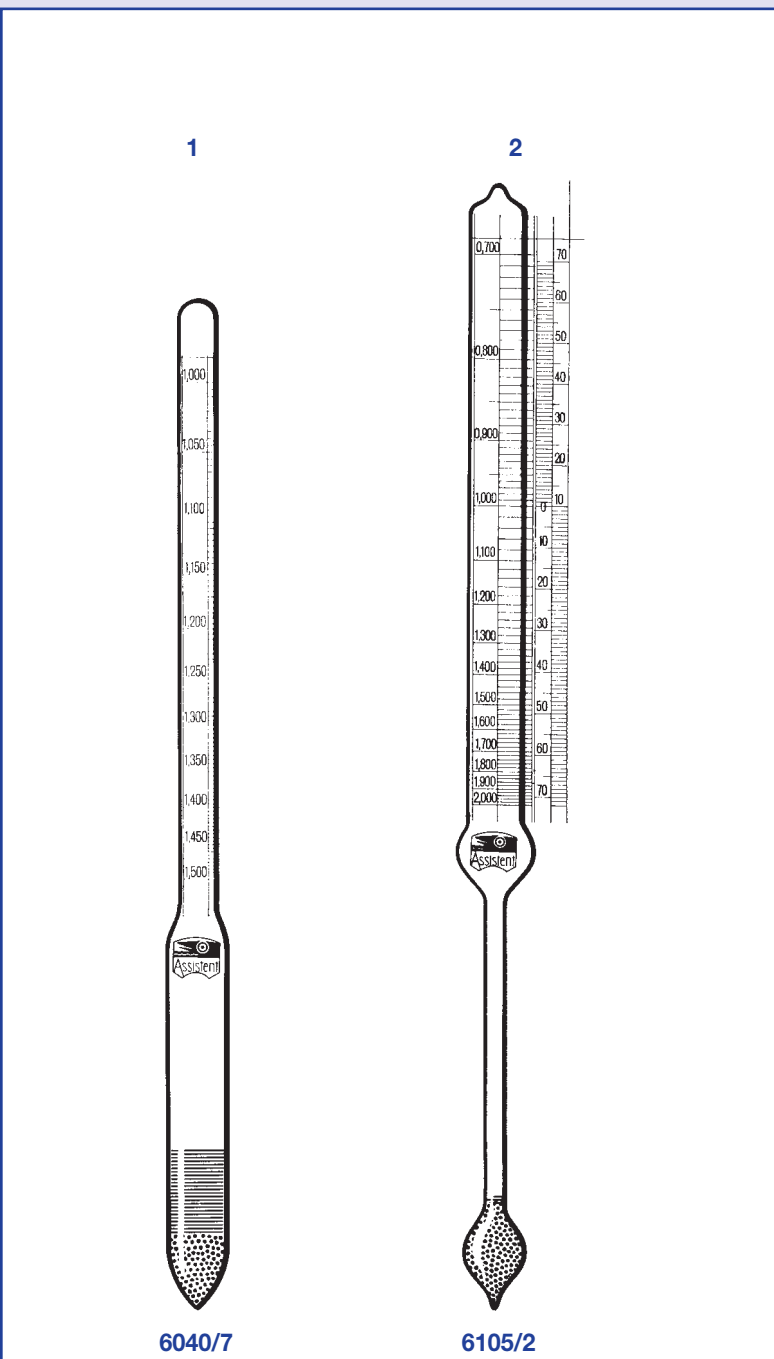
6000/8

6012/5

6014/5



Hydrometers and Thermometers



“Assistent” Spec. Gravity Hydrometers

Spec. gravity hydrometers reference temperature 20 °C
Scale range 0,200 g/cm³

Range	Cat. No.	Range	Cat. No.
0,600–0,800	.../1	1,400–1,600	.../5
0,800–1,000	.../2	1,600–1,800	.../6
1,000–1,200	.../3	1,800–2,000	.../7
1,200–1,400	.../4		

without thermometer

6022/.. length approx. 35 cm, subdivisions 0,001 g/cm³

6023/.. length approx. 28 cm, subdivisions 0,002 g/cm³

with thermometer

6024/.. length approx. 40 cm, subdivisions 0,001 g/cm³

6025/.. length approx. 35 cm, subdivisions 0,002 g/cm³

different ranges – subdivisions 0,005 g/cm³

Range	Cat. No.	Range	Cat. No.
0,700–1,000	.../1	1,000–1,400	.../5
1,000–1,300	.../2	1,400–2,000	.../6
1,300–1,600	.../3	1,000–1,500	.../7
1,600–2,000	.../4	1,500–2,000	.../8

6040/.. without thermometer

6041/.. with thermometer

6105/... Universal-hydrometer, without thermometer

6105/1 0,700–2,000:in 0,010/0,020 g/cm³
length approx. 33 cm, single scale

6105/2 double scale, length approx. 41 cm,
0,700–2,000:in 0,010/0,020 g/cm³
70–10/ 0–72: 1 °C Baumé

6105/3 1,000–2,000:in 0,010 g/cm³
length approx. 29 cm, single scale

6105/4 double scale, length approx. 28 cm
1,000–2,000:in 0,010 g/cm³
0–72: 1 °C Baumé

6106/... Universal-hydrometer, with thermometer

6106/1 0,700–2,000:in 0,010/0,020 g/cm³,
length approx. 41 cm

6106/2 1,000–2,000:in 0,010g/cm³,
length approx. 33 cm

1 Hydrometer acc. g/cm³ Tp. 20 °C

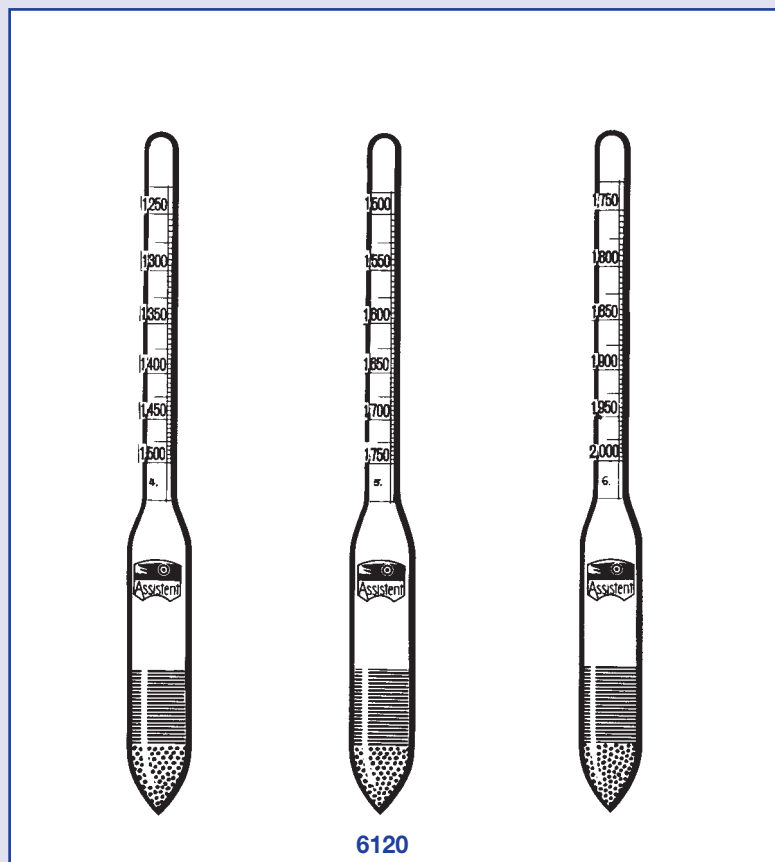
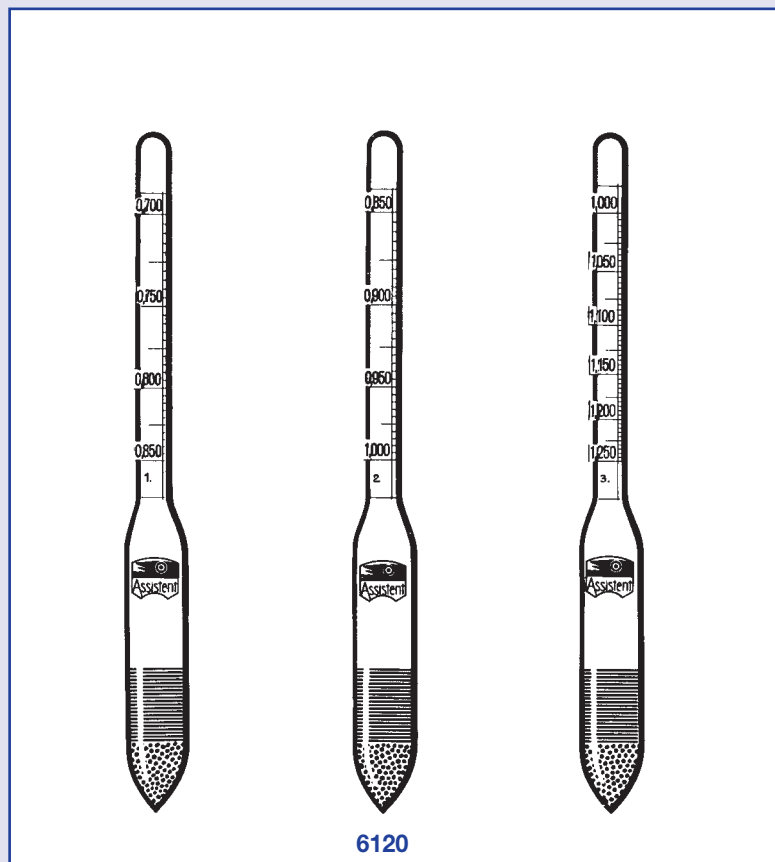
2 Universal hydrometer acc. g/cm³ and Baumé Tp. 20 °C

Hydrometers and Thermometers



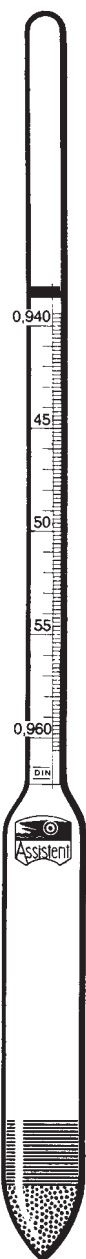
“Assistent” Spec. Gravity Hydrometers

- 6120 Spec. gravity hydrometers**
reference temperature 20 °C without thermometer
set of 6 pcs.
length approx. 18 cm
0,700–0,850–1,000–1,250–1,500–1,750–
2,000 g/cm³
subdivisions 0,005 g/cm³
- 6121 set of 13 pcs.**
length approx. 17 cm
0,700–0,800–0,900–1,000–1,100–1,200–
1,300–1,400–1,500–1,600–1,700–1,800–
1,900–2,000 g/cm³
subdivisions 0,002 g/cm³
- 6122 set of 19 pcs.**
length approx. 16 cm
0,700–0,760–0,820–0,880–0,940–1,000–
1,060–1,120–1,180–1,240–1,300–1,360–
1,420–1,480–1,540–1,600–1,660–1,720–
1,780–1,840 g/cm³
Unterteilung 0,001 g/cm³
- 6123 set of 21 pcs.**
length approx. 16 cm
0,700–0,760–0,820–0,880–0,940–1,000–
1,060–1,120–1,180–1,240–1,300–1,360–
1,420–1,480–1,540–1,600–1,660–1,720–
1,780–1,840 g/cm³
Unterteilung 0,001 g/cm³
- 6123/... Range finders** 0,700–2,000 g/cm³,
subdivisions 0,02 g/cm³
for set Nr. 6122 and 6123
- 6123/2 without thermometer**
6123/3 with thermometer





Hydrometers and Thermometers



6125/94

“Assistent” Spec. gravity hydrometers acc. to DIN 12791

suitable for official testing, made in accordance with the standard regulations reference temperature 20 °C,

with indication of class of surface tension:

low surface tension (l) range g/cm³ 0,600–1,000
high surface tension (h) range g/cm³ 1,000–2,000

The scale is marked with the class of surface tension (l, m, h) and with reading “above” or “below”. Reading “above” is used for non-transparent liquids (reading at top of the meniscus).

Hydrometers acc. to IP, BS, API and ASTM standards are also available.

The main lines of these instruments correspond to the series acc. to DIN 12791.

6125/... Series L 20, without thermometer,
length approx. 400 mm, subdivisions 0,0002 g/cm³

	Abbreviation cm ³	Range/cm ³
6125/60	L 20-060	0,600–0,620
6125/62	L 20-062	0,620–0,640
6125/64	L 20-064	0,640–0,660
6125/66	L 20-066	0,660–0,680
6125/68	L 20-068	0,680–0,700
6125/70	L 20-070	0,700–0,720
6125/72	L 20-072	0,720–0,740
6125/74	L 20-074	0,740–0,760
6125/76	L 20-076	0,760–0,780
6125/78	L 20-078	0,780–0,800
6125/80	L 20-080	0,800–0,820
6125/82	L 20-082	0,820–0,840
6125/84	L 20-084	0,840–0,860
6125/86	L 20-086	0,860–0,880
6125/88	L 20-088	0,880–0,900
6125/90	L 20-090	0,900–0,920
6125/92	L 20-092	0,920–0,940
6125/94	L 20-094	0,940–0,960
6125/96	L 20-096	0,960–0,980
6125/98	L 20-098	0,980–1,000
6125/100	L 20-100	1,000–1,020
6125/102	L 20-102	1,020–1,040
6125/104	L 20-104	1,040–1,060
6125/106	L 20-106	1,060–1,080
6125/108	L 20-108	1,080–1,100

Hydrometers and Thermometers



“Assistent” Spec. gravity hydrometers acc. to DIN 12791

6126/... Series L 20, without thermometer,

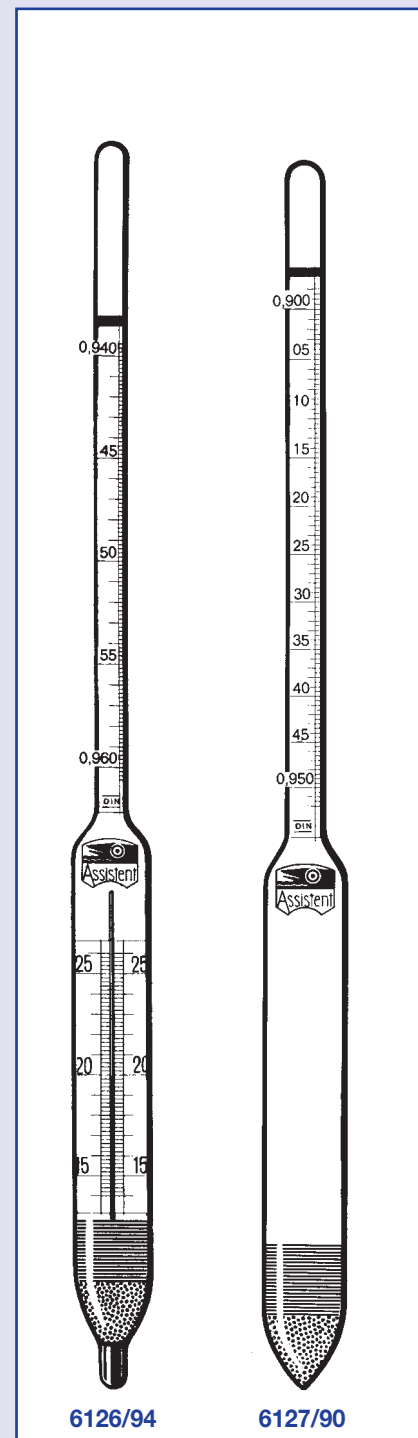
length approx. 400 mm, subdivisions 0,0002 g/cm³

	Abbreviation cm ³	Range g/cm ³
6126/60	L20Th-060	0,600–0,620
6126/62	L20Th-062	0,620–0,640
6126/64	L20Th-064	0,640–0,660
6126/66	L20Th-066	0,660–0,680
6126/68	L20Th-068	0,680–0,700
6126/70	L20Th-070	0,700–0,720
6126/72	L20Th-072	0,720–0,740
6126/74	L20Th-074	0,740–0,760
6126/76	L20Th-076	0,760–0,780
6126/78	L20Th-078	0,780–0,800
6126/80	L20Th-080	0,800–0,820
6126/82	L20Th-082	0,820–0,840
6126/84	L20Th-084	0,840–0,860
6126/86	L20Th-086	0,860–0,880
6126/88	L20Th-088	0,880–0,900
6126/90	L20Th-090	0,900–0,920
6126/92	L20Th-092	0,920–0,940
6126/94	L20Th-094	0,940–0,960
6126/96	L20Th-096	0,960–0,980
6126/98	L20Th-098	0,980–1,000
6126/100	L20Th-100	1,000–1,020
6126/102	L20Th-102	1,020–1,040
6126/104	L20Th-104	1,040–1,060
6126/106	L20Th-106	1,060–1,080
6126/108	L20Th-108	1,080–1,100

6127/... Series L 50, without thermometer,

length approx. 370 mm, subdivisions 0,0005 g/cm³

6127/60	L 50-060	0,600–0,650
6127/65	L 50-065	0,650–0,700
6127/70	L 50-070	0,700–0,750
6127/75	L 50-075	0,750–0,800
6127/80	L 50-080	0,800–0,850
6127/85	L 50-085	0,850–0,900
6127/90	L 50-090	0,900–0,950
6127/95	L 50-095	0,950–1,000
6127/100	L 50-100	1,000–1,050
6127/105	L 50-105	1,050–1,100
6127/110	L 50-110	1,100–1,150
6127/115	L 50-115	1,150–1,200
6127/120	L 50-120	1,200–1,250
6127/125	L 50-125	1,250–1,300
6127/130	L 50-130	1,300–1,350
6127/135	L 50-135	1,350–1,400
6127/140	L 50-140	1,400–1,450
6127/145	L 50-145	1,450–1,500
6127/150	L 50-150	1,500–1,550
6127/155	L 50-155	1,550–1,600
6127/160	L 50-160	1,600–1,650
6127/165	L 50-165	1,650–1,700
6127/170	L 50-170	1,700–1,750
6127/175	L 50-175	1,750–1,800
6127/180	L 50-180	1,800–1,850
6127/185	L 50-185	1,850–1,900
6127/190	L 50-190	1,900–1,950
6127/195	L 50-195	1,950–2,000

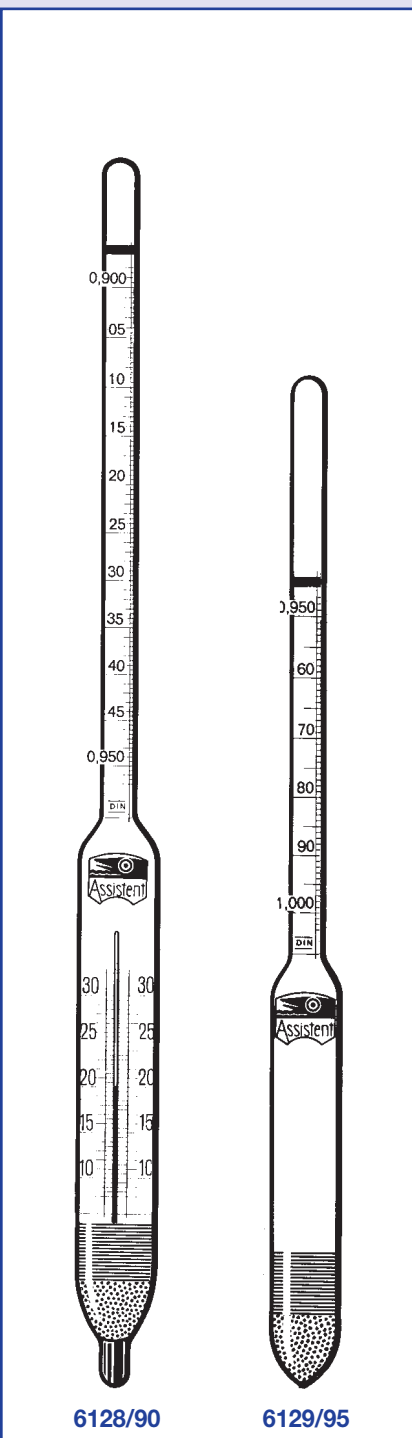


6126/94

6127/90



Hydrometers and Thermometers



6128/90

6129/95

“Assistent” Spec. gravity hydrometers acc. to DIN 12791

6128/... Series L 50, without thermometer,
length approx. 370 mm, subdivisions 0,0005 g/cm³

	Abbreviation cm ³	Range g/cm ³
6128/60	L50Th-060	0,600–0,650
6128/65	L50Th-065	0,650–0,700
6128/70	L50Th-070	0,700–0,750
6128/75	L50Th-075	0,750–0,800
6128/80	L50Th-080	0,800–0,850
6128/85	L50Th-085	0,850–0,900
6128/90	L50Th-090	0,900–0,950
6128/95	L50Th-095	0,950–1,000
6128/100	L50Th-100	1,000–1,050
6128/105	L50Th-105	1,050–1,100
6128/110	L50Th-110	1,100–1,150
6128/115	L50Th-115	1,150–1,200
6128/120	L50Th-120	1,200–1,250
6128/125	L50Th-125	1,250–1,300
6128/130	L50Th-130	1,300–1,350
6128/135	L50Th-135	1,350–1,400
6128/140	L50Th-140	1,400–1,450
6128/145	L50Th-145	1,450–1,500
6128/150	L50Th-150	1,500–1,550
6128/155	L50Th-155	1,550–1,600
6128/160	L50Th-160	1,600–1,650
6128/165	L50Th-165	1,650–1,700
6128/170	L50Th-170	1,700–1,750
6128/175	L50Th-175	1,750–1,800
6128/180	L50Th-180	1,800–1,850
6128/185	L50Th-185	1,850–1,900
6128/190	L50Th-190	1,900–1,950
6128/195	L50Th-195	1,950–2,000

6129/... Series M 50, without thermometer,
length approx. 270 mm, subdivisions 0,0001 g/cm³

6129/60	M50-060	0,600–0,650
6129/65	M50-065	0,650–0,700
6129/70	M50-070	0,700–0,750
6129/75	M50-075	0,750–0,800
6129/80	M50-080	0,800–0,850
6129/85	M50-085	0,850–0,900
6129/90	M50-090	0,900–0,950
6129/95	M50-095	0,950–1,000
6129/100	M50-100	1,000–1,050
6129/105	M50-105	1,050–1,100
6129/110	M50-110	1,100–1,150
6129/115	M50-115	1,150–1,200
6129/120	M50-120	1,200–1,250
6129/125	M50-125	1,250–1,300
6129/130	M50-130	1,300–1,350
6129/135	M50-135	1,350–1,400
6129/140	M50-140	1,400–1,450
6129/145	M50-145	1,450–1,500
6129/150	M50-150	1,500–1,550
6129/155	M50-155	1,550–1,600
6129/160	M50-160	1,600–1,650
6129/165	M50-165	1,650–1,700
6129/170	M50-170	1,700–1,750
6129/175	M50-175	1,750–1,800
6129/180	M50-180	1,800–1,850
6129/185	M50-185	1,850–1,900
6129/190	M50-190	1,900–1,950
6129/195	M50-195	1,950–2,000

Hydrometers and Thermometers



“Assistent” Spec. gravity hydrometers acc. to DIN 12791

6130/... Series M 50, without thermometer,

length approx. 310 mm, subdivisions 0,0001 g/cm³

	Abbreviation cm ³	Range g/cm ³
6130/60	M50Th-060	0,600–0,650
6130/65	M50Th-065	0,650–0,700
6130/70	M50Th-070	0,700–0,750
6130/75	M50Th-075	0,750–0,800
6130/80	M50Th-080	0,800–0,850
6130/85	M50Th-085	0,850–0,900
6130/90	M50Th-090	0,900–0,950
6130/95	M50Th-095	0,950–1,000
6130/100	M50Th-100	1,000–1,050
6130/105	M50Th-105	1,050–1,100
6130/110	M50Th-110	1,100–1,150
6130/115	M50Th-115	1,150–1,200
6130/120	M50Th-120	1,200–1,250
6130/125	M50Th-125	1,250–1,300
6130/130	M50Th-130	1,300–1,350
6130/135	M50Th-135	1,350–1,400
6130/140	M50Th-140	1,400–1,450
6130/145	M50Th-145	1,450–1,500
6130/150	M50Th-150	1,500–1,550
6130/155	M50Th-155	1,550–1,600
6130/160	M50Th-160	1,600–1,650
6130/165	M50Th-165	1,650–1,700
6130/170	M50Th-170	1,700–1,750
6130/175	M50Th-175	1,750–1,800
6130/180	M50Th-180	1,800–1,850
6130/185	M50Th-185	1,850–1,900
6130/190	M50Th-190	1,900–1,950
6130/195	M50Th-195	1,950–2,000

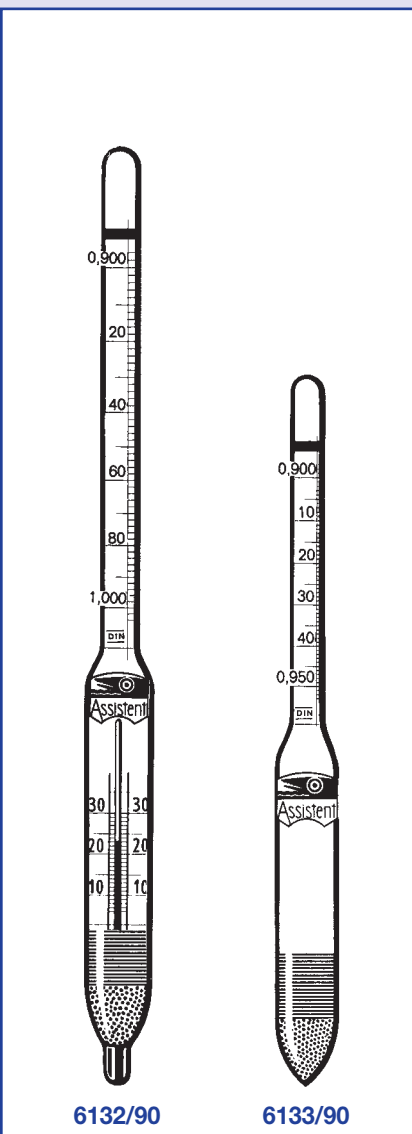
6131/... Series M 100, without thermometer,

length approx. 250 mm, subdivisions 0,0002 g/cm³

6131/60	M100-060	0,600–0,700
6131/70	M100-070	0,700–0,800
6131/80	M100-080	0,800–0,900
6131/90	M100-090	0,900–1,000
6131/100	M100-100	1,000–1,100
6131/110	M100-110	1,100–1,200
6131/120	M100-120	1,200–1,300
6131/130	M100-130	1,300–1,400
6131/140	M100-140	1,400–1,500
6131/150	M100-150	1,500–1,600
6131/160	M100-160	1,600–1,700
6131/170	M100-170	1,700–1,800
6131/180	M100-180	1,800–1,900
6131/190	M100-190	1,900–2,000



Hydrometers and Thermometers



“Assistent” Spec. gravity hydrometers acc. to DIN 12791

6132/... Series M 100, without thermometer,
length approx. 280 mm, subdivisions 0,0002 g/cm³

	Abbreviation cm ³	Range g/cm ³
6132/60	M100Th-060	0,600–0,700
6132/70	M100Th-070	0,700–0,800
6132/80	M100Th-080	0,800–0,900
6132/90	M100Th-090	0,900–1,000
6132/100	M100Th-100	1,000–1,100
6132/110	M100Th-110	1,100–1,200
6132/120	M100Th-120	1,200–1,300
6132/130	M100Th-130	1,300–1,400
6132/140	M100Th-140	1,400–1,500
6132/150	M100Th-150	1,500–1,600
6132/160	M100Th-160	1,600–1,700
6132/170	M100Th-170	1,700–1,800
6132/180	M100Th-180	1,800–1,900
6132/190	M100Th-190	1,900–2,000

6133/... Series S 50, without thermometer,
length approx. 190 mm: in 0,002 g/cm³

6133/60	S50-060	0,600–0,650
6133/65	S50-065	0,650–0,700
6133/70	S50-070	0,700–0,750
6133/75	S50-075	0,750–0,800
6133/80	S50-080	0,800–0,850
6133/85	S50-085	0,850–0,900
6133/90	S50-090	0,900–0,950
6133/95	S50-095	0,950–1,000
6133/100	S50-100	1,000–1,050
6133/105	S50-105	1,050–1,100
6133/110	S50-110	1,100–1,150
6133/115	S50-115	1,150–1,200
6133/120	S50-120	1,200–1,250
6133/125	S50-125	1,250–1,300
6133/130	S50-130	1,300–1,350
6133/135	S50-135	1,350–1,400
6133/140	S50-140	1,400–1,450
6133/145	S50-145	1,450–1,500
6133/150	S50-150	1,500–1,550
6133/155	S50-155	1,550–1,600
6133/160	S50-160	1,600–1,650
6133/165	S50-165	1,650–1,700
6133/170	S50-170	1,700–1,750
6133/175	S50-175	1,750–1,800
6133/180	S50-180	1,800–1,850
6133/185	S50-185	1,850–1,900
6133/190	S50-190	1,900–1,950
6133/195	S50-195	1,950–2,000

Hydrometers and Thermometers

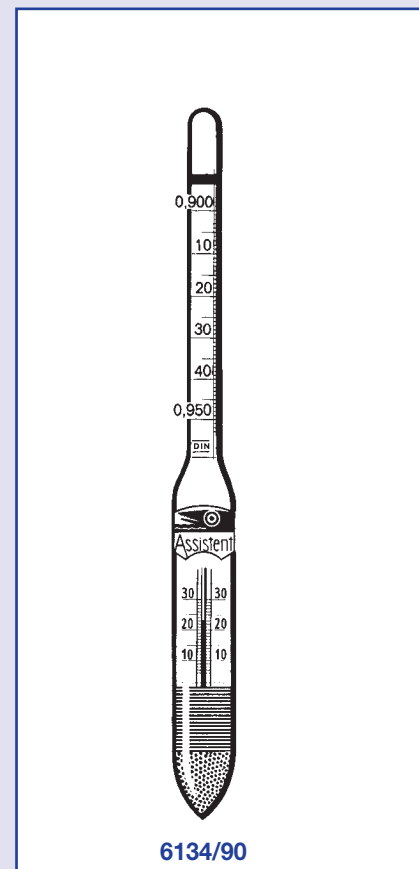


“Assistent” Spec. gravity hydrometers acc. to DIN 12791

6134/... Series S 50, with thermometer,

length approx. 230 mm, subdivisions in 0,002 g/cm³

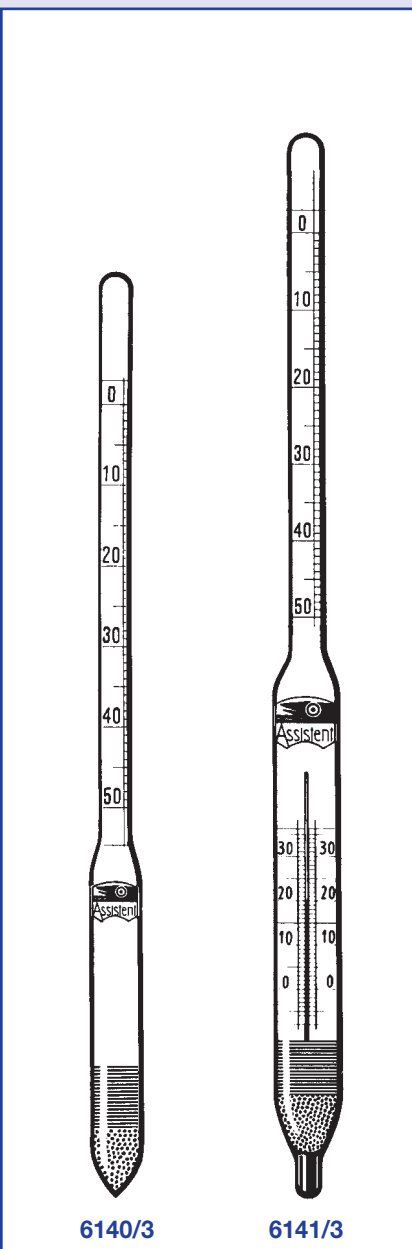
	Abbreviation cm ³	Range g/cm ³
6134/60	S50Th-060	0,600–0,650
6134/65	S50Th-065	0,650–0,700
6134/70	S50Th-070	0,700–0,750
6134/75	S50Th-075	0,750–0,800
6134/80	S50Th-080	0,800–0,850
6134/85	S50Th-085	0,850–0,900
6134/90	S50Th-090	0,900–0,950
6134/95	S50Th-095	0,950–1,000
6134/100	S50Th-100	1,000–1,050
6134/105	S50Th-105	1,050–1,100
6134/110	S50Th-110	1,100–1,150
6134/115	S50Th-115	1,150–1,200
6134/120	S50Th-120	1,200–1,250
6134/125	S50Th-125	1,250–1,300
6134/130	S50Th-130	1,300–1,350
6134/135	S50Th-135	1,350–1,400
6134/140	S50Th-140	1,400–1,450
6134/145	S50Th-145	1,450–1,500
6134/150	S50Th-150	1,500–1,550
6134/155	S50Th-155	1,550–1,600
6134/160	S50Th-160	1,600–1,650
6134/165	S50Th-165	1,650–1,700
6134/170	S50Th-170	1,700–1,750
6134/175	S50Th-175	1,750–1,800
6134/180	S50Th-180	1,800–1,850
6134/185	S50Th-185	1,850–1,900
6134/190	S50Th-190	1,900–1,950
6134/195	S50Th-195	1,950–2,000



6134/90



Hydrometers and Thermometers



6140/3

6141/3

“Assistent” Hydrometers

Baumé hydrometers, reference temperature 15 °C

6140/... without thermometer

6141/... with thermometer

Cat. No.	Range in 1/1
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.../1	0–30
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.../2	0–40
-------	------

.../3	0–50
-------	------

.../4	0–70
-------	------

.../5	30–60
-------	-------

.../6	40–70
-------	-------

.../7	20–60
-------	-------

.../8	40–80
-------	-------

*	25 cm
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**	30 cm
----	-------

Cat. No.	Range in 1/5	Cat. No.	Range in 1/5
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.../9	0–10	.../16	0–15
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.../10	10–20	.../17	15–30
--------	-------	--------	-------

.../11	20–30	.../18	30–45
--------	-------	--------	-------

.../12	30–40	.../19	45–60
--------	-------	--------	-------

.../13	40–50	.../20	60–75
--------	-------	--------	-------

.../14	50–60	.../21	0–20
--------	-------	--------	------

.../15	60–70	.../22	10–30
--------	-------	--------	-------

.../23	20–40
--------	-------

.../24	30–50
--------	-------

.../25	40–60
--------	-------

.../26	50–70
--------	-------

*	25 cm	30 cm
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**	30 cm	35 cm
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Cat. No.	Range in 1/10	Cat. No.	Range in 1/10	Cat. No.	Range in 1/10
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.../27	0–10	.../34	0–15	.../39	0–1
--------	------	--------	------	--------	-----

.../28	10–20	.../35	15–30	.../40	0–2
--------	-------	--------	-------	--------	-----

.../29	20–30	.../36	30–45	.../41	0–3
--------	-------	--------	-------	--------	-----

.../30	30–40	.../37	45–60	.../42	0–5
--------	-------	--------	-------	--------	-----

.../31	40–50	.../38	60–75	.../43	0–6
--------	-------	--------	-------	--------	-----

.../32	50–60				
--------	-------	--	--	--	--

.../33	60–70				
--------	-------	--	--	--	--

*	27 cm	30 cm	25 cm
---	-------	-------	-------

**	32 cm	35 cm	30 cm
----	-------	-------	-------

Cat. No.	Range in 1/50
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... /44	0–2
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*	30 cm
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**	30 cm
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* length approx. **without** thermometer

** length approx. **with** thermometer

Hydrometers and Thermometers



“Assistent” Alcoholometers

Alcoholometers in percentage by volume

reference temperature 20 °C

6170/.. without thermometer

6171/.. with thermometer

Alcoholometers in percentage by weight

reference temperature 20 °C

6165/.. without thermometer

6166/.. with thermometer

Cat. No.	Range	Sub-division	Length approx. cm	
			without thermometer	with thermometer
.../1	0–100	1/1	25	34
.../2	0– 70	1/1	25	34
.../3	30–100	1/1	25	34
.../4	0– 30	1/2	32	35
.../5	30– 60	1/2	32	35
.../6	60–100	1/2	35	35
.../14	0– 10	1/10	35	40
.../15	10– 20	1/10	35	40
.../16	20– 30	1/10	35	40
.../17	30– 40	1/10	35	40
.../18	40– 50	1/10	35	40
.../19	50– 60	1/10	35	40
.../20	60– 70	1/10	35	40
.../21	70– 80	1/10	35	40
.../22	80– 90	1/10	35	40
.../23	90–100	1/10	35	40

Official certificates are available at extra charge and have to be ordered with the instrument.

6169/... **Precision alcoholometers** in percentage by weight with thermometer, suitable for official testing, length approx. 45 cm

6169/08... **officially tested**, with stamp, without certificates

Cat. No. **.../1** 0–100 in 1/1

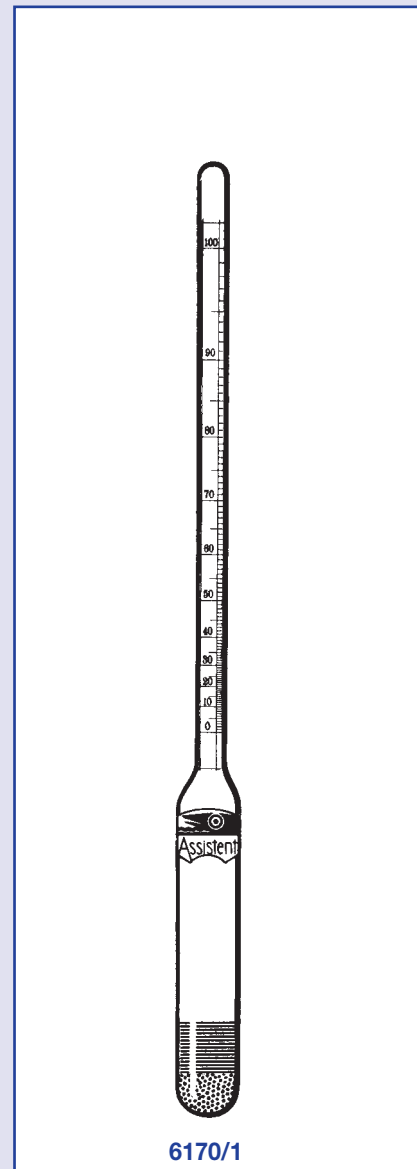
.../7 10– 67 in 1/2

.../9 65–100 in 1/5

.../23 90–100 in 1/10

6174/... **Precision alcoholometers** acc. to DIN 12 803 suitable for official testing, reference temperature 20°C subdivisions 0,1 % vol, length approx. 33 cm with thermometer + 5 +25 °C:1/5

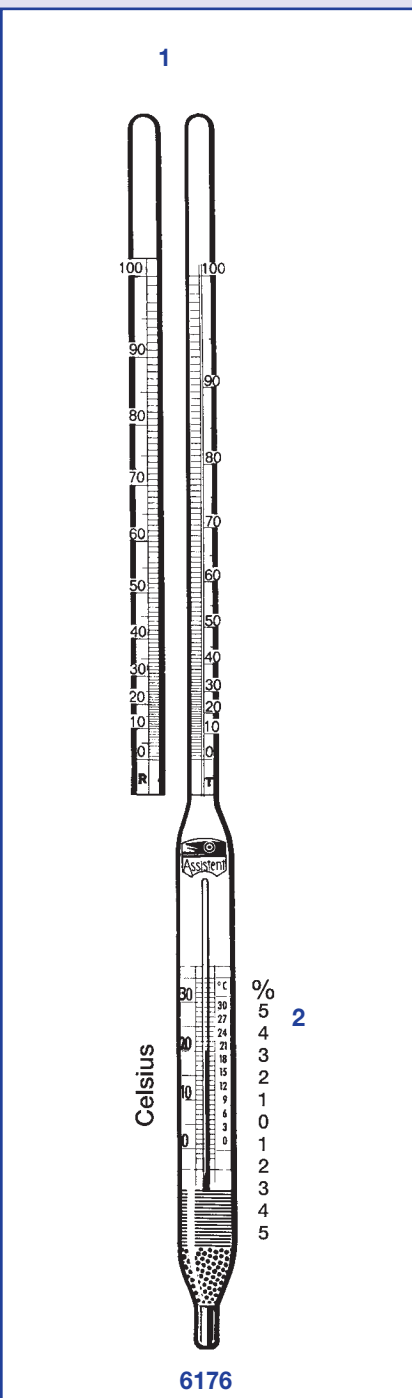
Cat. No.	Range % vol		Cat. No.	% vol	
	% vol	% vol		% vol	% vol
.../1	0	– 5	.../11	50	– 55
.../2	5	– 10	.../12	55	– 60
.../3	10	– 15	.../13	60	– 65
.../4	15	– 20	.../14	65	– 70
.../5	20	– 25	.../15	70	– 75
.../6	25	– 30	.../16	75	– 80
.../7	30	– 35	.../17	80	– 85
.../8	35	– 40	.../18	85	– 90
.../9	40	– 45	.../19	90	– 95
.../10	45	– 50	.../20	95	– 100
			.../21	98	– 103



6170/1



Hydrometers and Thermometers



“Assistent” Hydrometers

Alcoholometers acc. to Richter and Tralles 0–100:1/1 % weight/% vol, reference temperature 20 °C

6175 without thermometer length approx. 25 cm, weight %/vol. %

6176 with thermometer length approx. 30 cm, weight %/vol. %

Alcoholometers acc. to Gay Lussac 0–100:1/1 reference temperature 20 °C

6180 without thermometer length approx. 25 cm

6181 with thermometer length approx. 34 cm

Alcoholometers acc. to Gay Lussac and Cartier 0–100:1/1; 10–46:1/2, reference temperature 20 °C

6182/. without thermometer length approx. 25 cm

6183/. with thermometer length approx. 34 cm

Hydrometers for brandy acc. to Cartier, 10–46:1/2 reference temperature 20 °C

6184 without thermometer length approx. 20 cm

6185 with thermometer length approx. 25 cm

Hydrometers for ammonia NH₄OH without hermometer length approx. 27 cm, reference temperature 15 °C

6186/1 0–30:0,5 % weight

6186/2 0,880–1,000 g/cm³

Hydrometers for ammonia NH₄OH with hermometer length approx. 30 cm reference temperature 15 °C

6187/1 0–30:0,5 % weight

6187/2 0,880–1,000 g/cm³

Hydrometers for vinegar 0–10 ° Baumé :0,1, reference temperature 15 °C

6193/1 without thermometer length approx. 26 cm

6193/2 with thermometer length approx. 30 cm

Hydrometers for acetic acid CH₃COOH 0–75:1 % weight, reference temperature 15 °C

6194/1 without thermometer length approx. 28 cm

6194/2 with thermometer length approx. 30 cm

1 Richter and Tralles Tp. 20 °C

2 The percentages above 0 have to be deducted from the indicated values of the alcoholmeter and have to be added below 0.

Hydrometers and Thermometers



“Assistent” Hydrometers

Hydrometers for tannic acid $C_{76}H_{52}O_{46}$

0–20:0,5 % weight, reference temperature 15 °C

- 6195/1** without thermometer length approx. 25 cm
6195/2 with thermometer length approx. 27 cm

Hydrometers for glycerine $C_3H_8O_3$

0–100:1,0 % weight, reference temperature 15 °C

- 6196/1** without thermometer length approx. 27 cm
6196/2 with thermometer length approx. 30 cm

Hydrometers for potassium hydroxide KOH

0–50:1,0 °Baumé, reference temperature 15 °C

- 6197/1** without thermometer length approx. 25 cm
6197/2 with thermometer length approx. 30 cm

Hydrometers for boiler water acc. to Dr. Ing. Ammer

reference temperature 20 °C

with thermometer + 5 bis + 50 °C: 1 °C and rectifying scale,
 length approx. 30 cm

- 6198/1** –1 + 1:0,1 °Baumé
6198/2 –1 + 2:0,1 °Baumé

Hydrometers for brine

0–25:1,0 %, reference temperature 15 °C

- 6200** without thermometer length approx. 22 cm
6201 with thermometer length approx. 30 cm

Lactometers acc. to Gerber 1,020–1,040:0,5

reference temperature 20 °C

- 6205** without thermometer length approx. 22 cm
6206 with thermometer length approx. 22 cm

Lactometers acc. to Quevenne 1,015–1,040:0,001 g/ml

reference temperature 15 °C

- 6210** without thermometer length approx. 21 cm
6211 with thermometer length approx. 21 cm

Hydrometers for mineral oils

reference temperature 15 °C

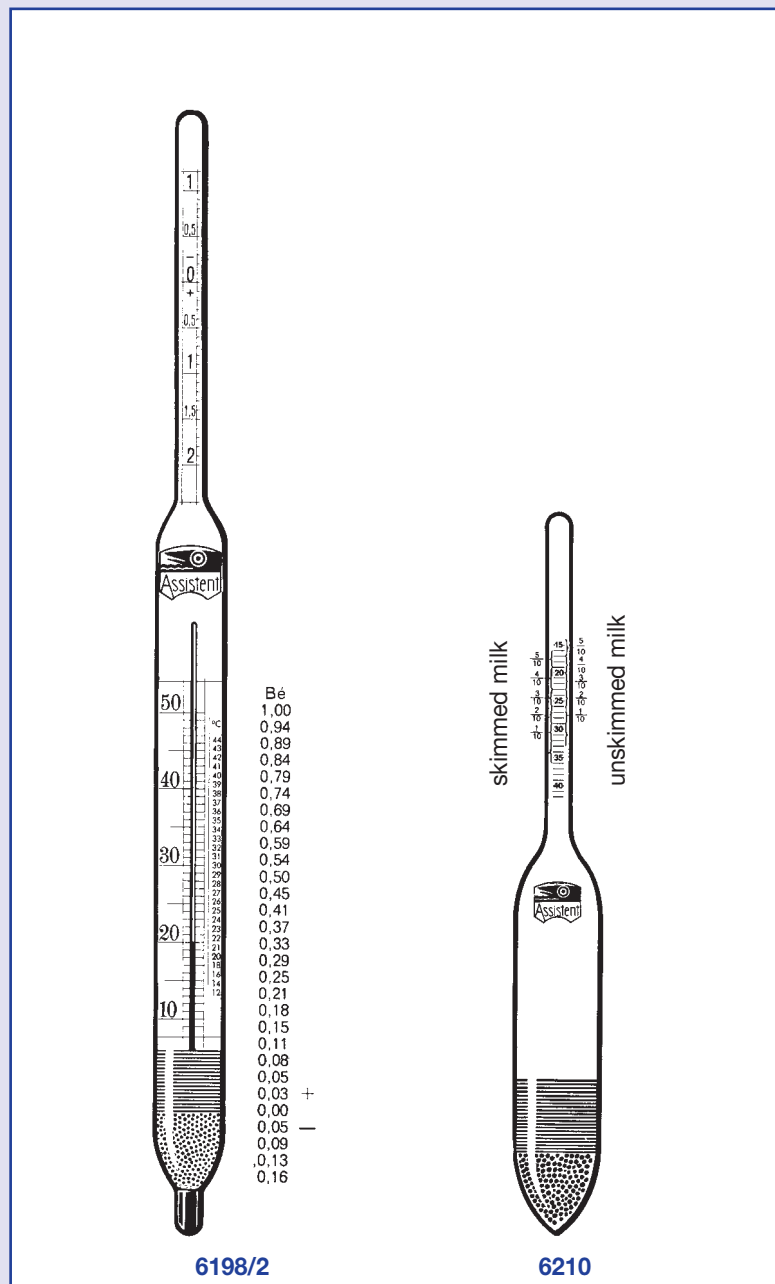
subdivisions 0,001 g/cm³

Cat. No.	Range
.../1	0,610–0,700
.../2	0,680–0,770
.../3	0,750–0,840
.../4	0,820–0,910
.../5	0,890–0,990
.../6	0,980–1,100

- 6220/...** without thermometer length approx. 35 cm
6221/... with thermometer length approx. 38 cm

- 6222/...** Hydrometers for minerale oils,
 reference No. 6220

- 6222/1...** without thermometer length approx. 38 cm
6222/2... with thermometer –15 + 45 °C: 1 °C ca. 41 cm

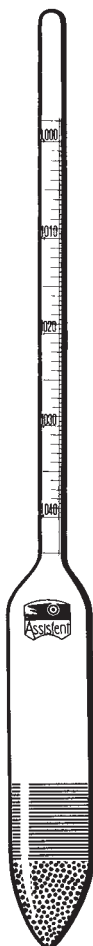


6198/2

6210



Hydrometers and Thermometers



6236

“Assistent” Hydrometers

Hydrometers for sodium chloride NaCl

0–27/30: 0,5 % weight, reference temperature 20 °C
with double scale for weight 1,000–1,230: 0,002 g/cm³

6223/1 without thermometer length approx. 27 cm

6223/2 with thermometer length approx. 30 cm

Hydrometers for sodium hydroxide solution NaOH

reference temperature 20 °C

0–30: 0,5 % weight,

6224/1 without thermometer length approx. 25 cm

6224/2 with thermometer length approx. 30 cm

6224/3 without thermometer length approx. 25 cm

6224/4 with thermometer length approx. 30 cm

Hydrometers for glue acc. to Suhr with reducing thermometer in stem, length approx. 45 cm, reference temperature 75 °C

6225 0–35 0,5 % weight

6226 0–56 1,0 % weight

Hydrometers for phosphoric acid H₃PO₄

0–30 : 0,5 % weight, reference temperature 15 °C

6228/1 without thermometer length approx. 27 cm

6228/2 with thermometer length approx. 30 cm

Hydrometers for nitric acid HNO₃,

reference temperature 15 °C

with double scale for weight 1,000–1,310: 0,002 g/cm³

0–50 : 0,5 % weight,

6229/1 without thermometer length approx. 30 cm

6229/2 with thermometer length approx. 35 cm

45–100 : 0,5 % weight

6229/3 without thermometer length approx. 27 cm

6229/4 with thermometer length approx. 30 cm

Hydrometer for hydrochloric acid HCl

with double scale for weight 1,000–1,230: 0,002 g/cm³

0–40 : 0,5 % weight, reference temperature 15 °C

6230/1 without thermometer length approx. 30 cm

6230/2 with thermometer length approx. 35 cm

Hydrometers for sulphuric acid H₂SO₄

reference temperature 15 °C

0–47 : 0,5 % weight

6231/1 without thermometer length approx. 28 cm

6231/2 with thermometer length approx. 35 cm

45–96 : 0,5 % weight

6231/3 without thermometer length approx. 28 cm

6231/4 with thermometer length approx. 35 cm

6232 Hydrometer for sulphurous acid H₂SO₃

0–10 : 0,5 % weight

reference temperature 15 °C, without thermometer length approx. 25 cm

Hydrometer for tannin acid C₇₆H₅₂O₄₆

1,000–1,060 : 0,001 g/cm³, reference temperature 20 °C

6233/1 without thermometer length approx. 25 cm

6233/2 with thermometer ca. 30 cm lang

Hydrometer for sea water 1,000–1,040 : 0,0005 g/cm³

reference temperature 20 °C

6236/1 without thermometer length approx. 25 cm

6236/2 with thermometer length approx. 27 cm

Hydrometers and Thermometers



“Assistent” Hydrometers

Hydrometers for must acc. to Oechsle

0–130:1 ° Oechsle, reference temperature 20 °C

6250 without thermometer, length approx. 30 ± 2 cm

6251 with thermometer, length approx. 32 ± 2 cm and temperature correction scale

Hydrometers for must acc. to Oechsle

0–120:1 ° Oechsle, reference temperature 15 or 20 °C,

0–15 : 1/1 vol. %

6252 without thermometer, length approx. 25 ± 2 cm

6253 with thermometer, length approx. 27 ± 2 cm

6254 Hydrometers for must acc. to Oechsle,

0–120 : 1 ° Oechsle, 0–25 : 1 % vol.

reference temperature 20 °C

length approx. 18 cm, without thermometer

6269 Hydrometers for sugar acc. to Baumé

0–50 : 1 ° Baumé, reference temperature 15 °C

without thermometer length approx. 16 cm

Saccharimeters in percentage by weight Brix (% weight sugar solution) or Balling, reference temperature 20 °C

6265/... without thermometer

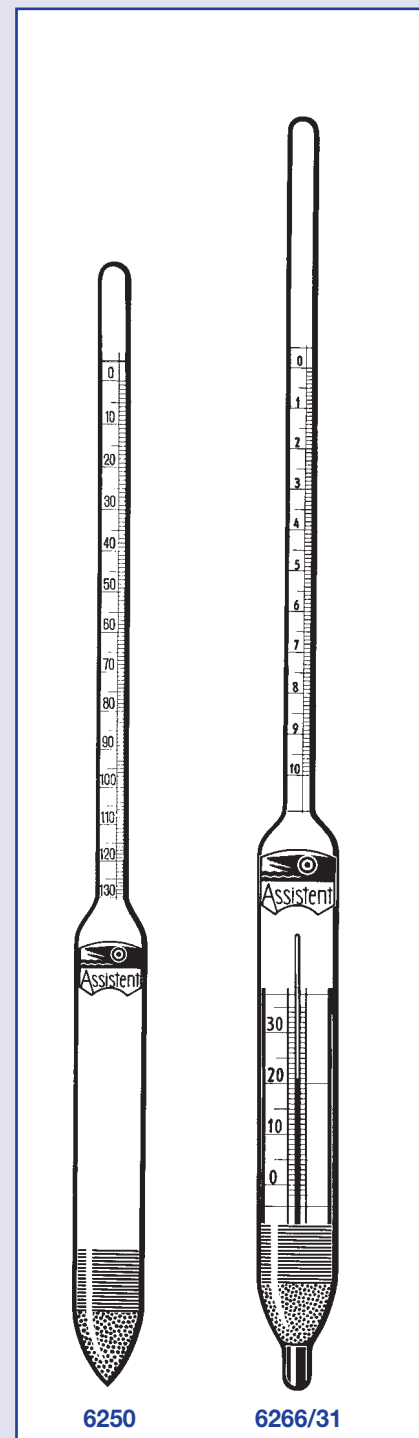
6266/... with thermometer

Cat. No.	Range in 1/1	Cat. No.	Range in 1/5	Cat. No.	Range in 1/5
.../1	0–30	.../7	0–10	.../16	0–20
.../2	10–40	.../8	10–20	.../17	10–30
.../3	30–60	.../9	20–30	.../18	20–40
.../4	30–70	.../10	30–40	.../19	30–50
.../5	60–90	.../11	40–50	.../20	40–60
.../6	50–90	.../12	50–60	.../21	50–70
		.../13	60–70	.../22	60–80
		.../14	70–80	.../23	70–90
		.../15	80–90		
*	20		25		28 cm
**	30		30		32 cm

Cat. No.	Range in 1/5	Cat. No.	Range in 1/10	Cat. No.	Range in 1/10
.../24	0–30	.../31	0–10	.../40	0–20
.../25	10–40	.../32	10–20	.../41	10–30
.../26	20–50	.../33	20–30	.../42	20–40
.../27	30–60	.../34	30–40	.../43	30–50
.../28	40–70	.../35	40–50	.../44	40–60
.../29	50–80	.../36	50–60	.../45	50–70
.../30	60–90	.../37	60–70	.../46	60–80
		.../38	70–80	.../47	70–90
		.../39	80–90		
*	30		28		38 cm
**	34		30		40 cm

* Length approx. **without** thermometer

** Length approx. **with** thermometer

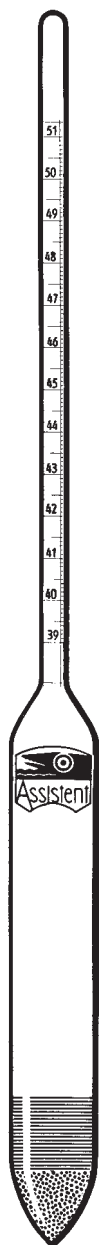


6250

6266/31



Hydrometers and Thermometers



6275/5

“Assistent” Hydrometers

Hydrometers acc. to Twaddle

reference temperature 15 °C/60 °F,
length approx. 240 mm, subdivisions 0,5

6270/... Cylinder form

Cat. No.	Range	Cat. No.	Range
.../0	0–24	.../72	74–102
.../24	24–48	.../102	102–138
.../48	48–74	.../136	138–170

6275/... **API hydrometers** suitable for official testing,
length approx. 330 mm,
reference temperature + 60 °F,
subdivisions 0,1 API, without thermometer

Cat. No.	Range
.../1	1 H – 1+ 11
.../2	2 H + 9+ 21
.../3	3 H + 19+ 31
.../4	4 H + 29+ 41
.../5	5 H + 39+ 51
.../6	6 H + 49+ 61
.../7	7 H + 59+ 71
.../8	8 H + 69+ 81
.../9	9 H + 79+ 91
.../10	10 H + 89+101

6276/... **API-hydrometers**, suitable for official testing,
length approx. 380 mm,
reference temperature + 60 + 220 : 2 °F
subdivisions 0,1 API, with thermometer

Cat. No.	Range
.../51	51 H – 1+ 11
.../52	52 H + 9+ 21
.../53	53 H + 19+ 31
.../54	54 H + 29+ 41
.../55	55 H + 39+ 51
.../56	56 H + 49+ 61
.../57	57 H + 59+ 71
.../58	58 H + 69+ 81
.../59	59 H + 79+ 91
.../60	60 H + 89+101

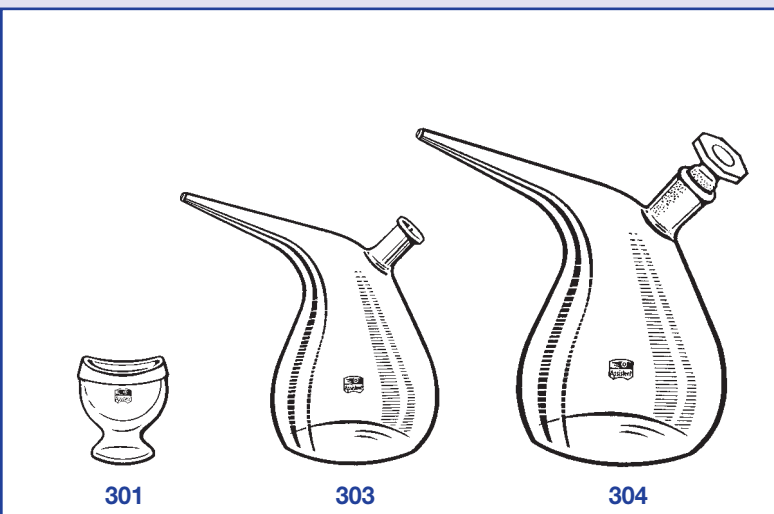
Other hydrometers acc. to ASTM or BS are available on request.

Hospital Equipment





Hospital Equipment



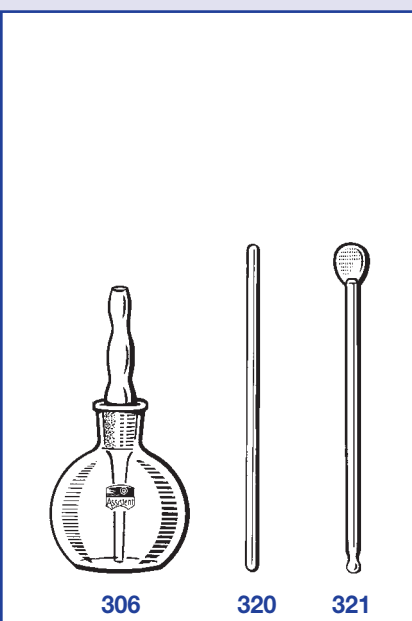
“Assistent” Hospital Equipment

301 “Assistent” Eye baths, on base fused rim, clear glass, in boxes of 50 €€

Eye douches, acc. to Schuster (Undines), €€

clear glass without stopper	clear glass with ground-in stopper	Capacity ca. ml
-----------------------------	------------------------------------	-----------------

303/50	304/50	50
303/100	304/100	100
303/200		200

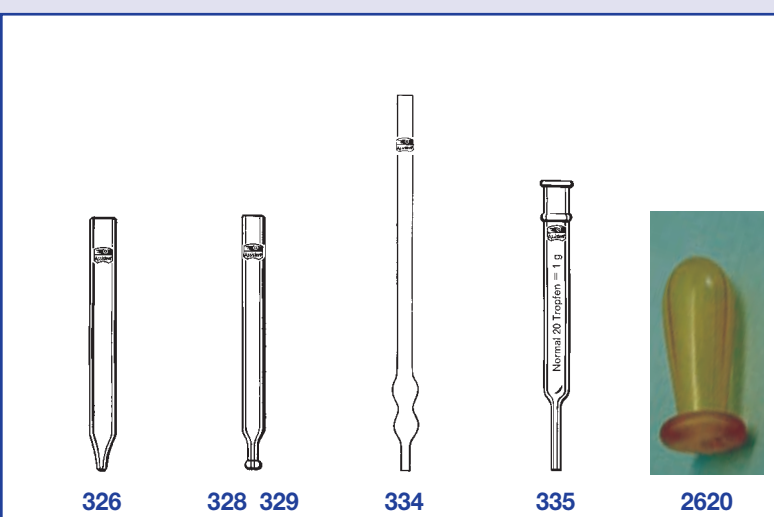


Eye drop boules acc. to Strohschein, with ground-in pipette €€

306 clear glass without inscription

320 “Assistent” Glass rods, fused ends, approx. 100 x 3–4 mm diam., in packs of 100 €€

321 “Assistent” Glass rods, with knob and spatula, approx. 100 x 3–4 mm diam., in packs of 100 €€



“Assistent” Dropping pipettes, solid finish, without rubber teat, in packs of 50 €€

326 straight end, approx. 80 x 7/8 mm diam.

328 straight bulbous end, approx. 70 x 6/7 mm diam.

329 straight bulbous end, approx. 80 x 7/8 mm diam.

334 “Assistent” Dropping pipettes with two extensions acc. to DAB 10, total length approx. 150 mm

335 “Assistent” Dropping pipettes with inscription: “Normal 20 Tropfen = 1 g”

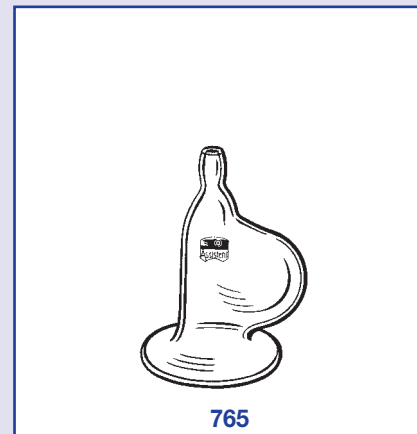
2620 Rubber teats for Strohschein bottles (also for dropping pipettes)

Hospital Equipment



“Assistent” Hospital Equipment

765 “Assistent” Breast pumps of glass, with side bulb, solid model CE



766 with bulb of PVC, each in a box CE



“Assistent” Breast shields for electric milk pump, CE

772/.. cylindrical, borosilicate glass 3.3 size indicated, with side tube

772/1 Size 1, disc diam. approx. 70 mm

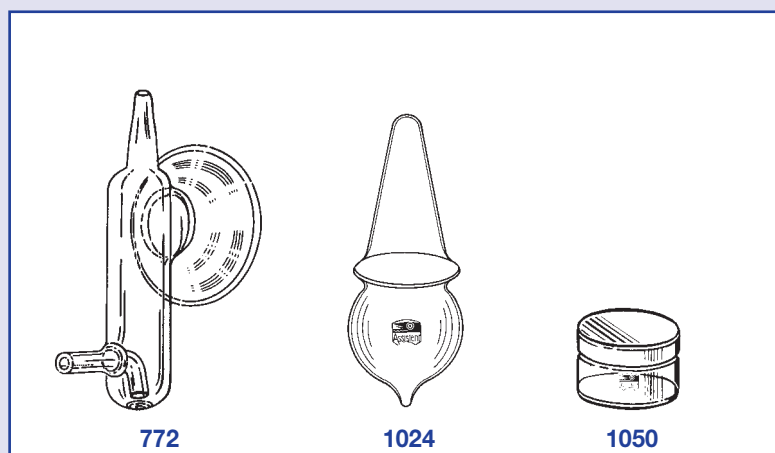
772/2 Size 2, disc diam. approx. 75 mm

772/3 Size 3, disc diam. approx. 80 mm without side tube

Other types of breast shields (acc. to sample or drawing) are being manufactured as well.

1024 “Assistent” Dilatators of glass (to dilate the anus), CE

size 1 small	size 2 medium	size 3 large
1024/1	1024/2	1024/3



1050/... “Assistent” Glass boxes, low form, with notch

Height approx.	25	30	35	40 mm
Outs. diam. approx.	40	50	60	80 mm
	1050/4	1050/5	1050/6	1050/8
Height approx.	50	60	75 mm	
Outs. diam. approx.	100	120	150 mm	
	1050/10	1050/12	1050/15	



Hospital Equipment



“Assistent” Hospital Equipment

1101 “Assistent” medicine glasses, €€
conical, straight rim, with approximate scale in grammes and spoons, in boxes of 50

“Assistent” medicine beakers of polypropylene, €€
cap. 30 ml, with approximate scale, in different colors

1102/1 colorless

1102/2 blue

1102/3 red

1102/4 yellow

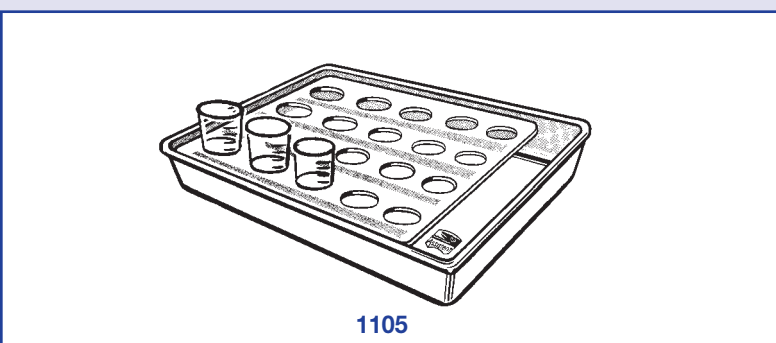
1102/5 green

1102/15 cover, colorless, €€
adaptable for beakers, No. 1102/..

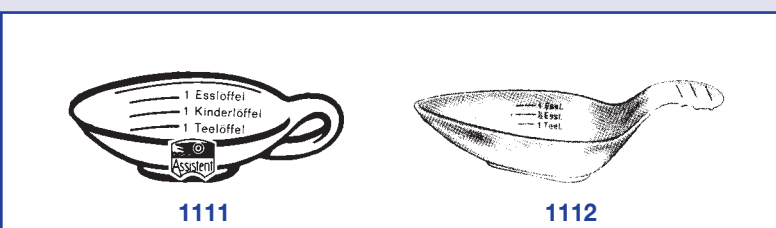


1103 Medicine dispenser of polypropylene, white, €€
4 case, with printed German indication:
“Morgen” – “Mittag” – “Abend” – “Nacht”,
with cover of clear plastic,
packing of 200 pcs.

1104 Medicine tray of polystyrol, white, €€
for 19 medicine cups No. 1102, and for
19 medicine dispensers No. 1103.



1105 “Assistent” Medicine trays “DBGM” €€
consisting of white plastic tray and Plexiglas® stand
for 20 medicine glasses (without glasses).
Each row of holes has an area for inscription
(pencil notes can easily be removed by an eraser
or a moist cloth).
The free space at the side is provided for other
medicines, instruments etc.



1111 “Assistent” Medicine spoons of porcelain €€
white, glazed, with scale in German
(1 teaspoon, 1 children’s spoon, 1 tablespoon)

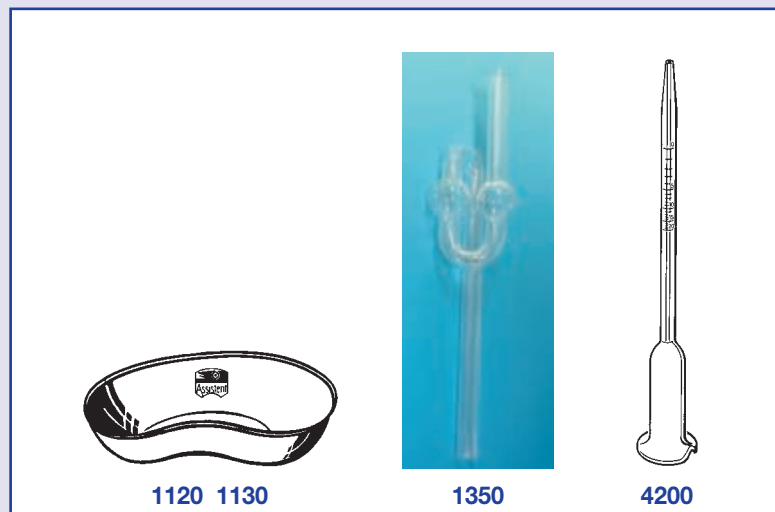
1112 “Assistent” Medicine spoons of plastic €€
white, with scale in German
(1 teaspoon, 1/2 tablespoon, 1 tablespoon)

Hospital Equipment



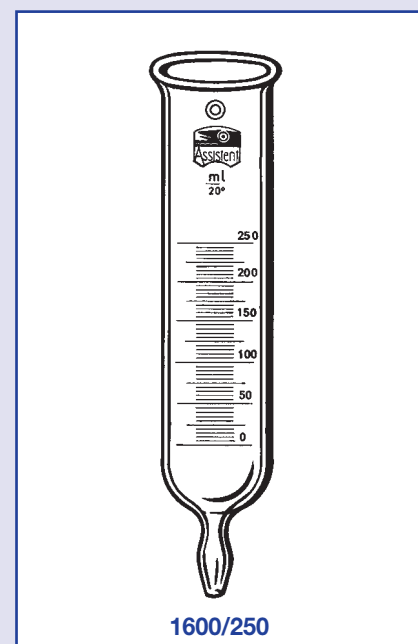
“Assistent” Hospital Equipment

- 1120** “Assistent” Kidney dishes of white polypropylene, length approx. 26 cm, sterilisable CE
- 1130** “Assistent” Kidney dishes of stainless steel, length approx. 25 cm CE
- 1350** “Assistent” Fermenting tubes with 2 bulbs and enlargement, glass, Total length approx. 200 mm Tube diam. approx. 10–11 mm
- 4200** Vinometer (wine test glasses) acc. to Bernadotte

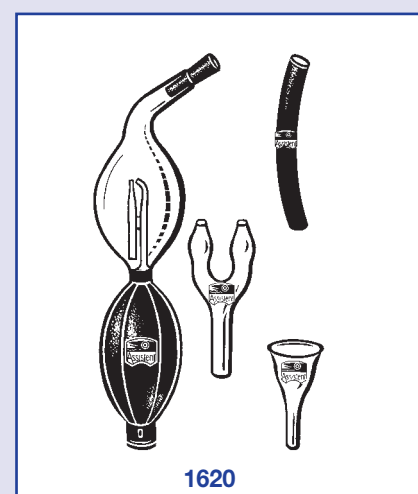


- 1600/...** “Assistent” Infusion cylinders with fused graduation “ASSISTENT-PERMANENT“, with hole for suspension, with olive below, for use in veterinary medicine only.

	Capacity ml	Subdivisions ml
1600/250	250	5
1600/500	500	10
1600/1000	1000	20

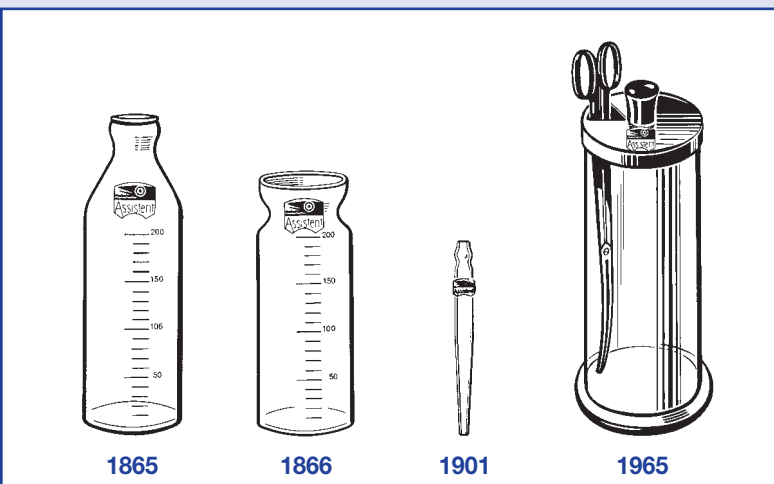


- 1620** “Assistent” Inhalers (cold sprayers), small type, complete in plastic bag CE
- Spare parts, CE
- 1620/1** Sprayer of amber glass
- 1620/2** Rubber bulb
- 1620/3** Rubber stopper for sprayer
- 1620/4** Nasal tube, amber glass
- 1620/5** Rubber connector for nasal tube
- 1620/6** Filling funnel of amber glass



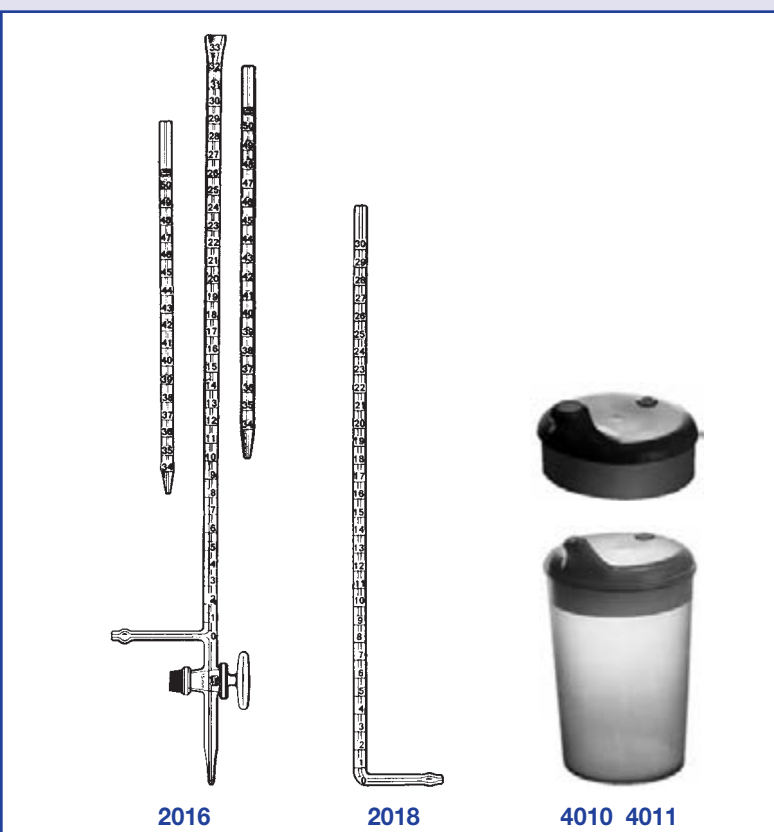


Hospital Equipment



“Assistent” Hospital Equipment

- 1865** “Assistent” Nursing bottles
borosilicate glass 3.3, narrow neck, with scale,
approx. 250 g, neck inside diam. ca. 20 mm
- 1866** wide neck
neck inside diam. ca. 30 mm
- 1901** Rectal pipes with tapering end, CE
- 1965/...** “Assistent” Glass jars for forceps with aperture
(without forceps)
- 1965/20** approx. 20 x 8 cm diam.
1965/12 approx. 12 x 8 cm diam.
- 1965/1** Spare cover of stainless steel with aperture,
for jars for forceps



“Assistent” Spinal fluid manometer tubes,
(liquor ascension tubes) for measuring the pressure of fluid
clear glass, two interchangeable ground parts, fused
graduation, “ASSISTENT-PERMANENT” up to 50 cm,
with directions for use

- 2016** with NS stopcock and interchangeable plug
- 2018** “Assistent” Spinal fluid manometer tubes,
one-piece, fused graduation “ASSISTENT-
PERMANENT” up to 30 cm,
length approx. 33 cm,
length of angular tube approx. 5 cm with olive

- 4010** “Assistent” Feeding cups of plastic, CE
- 4011/...** Covers of plastic for above, CE
- 4011/4** with round opening of approx. 4 mm
4011/12 with round opening of approx. 12 mm
4011/48 with oval opening of approx. 4 x 8 mm

Hospital Equipment

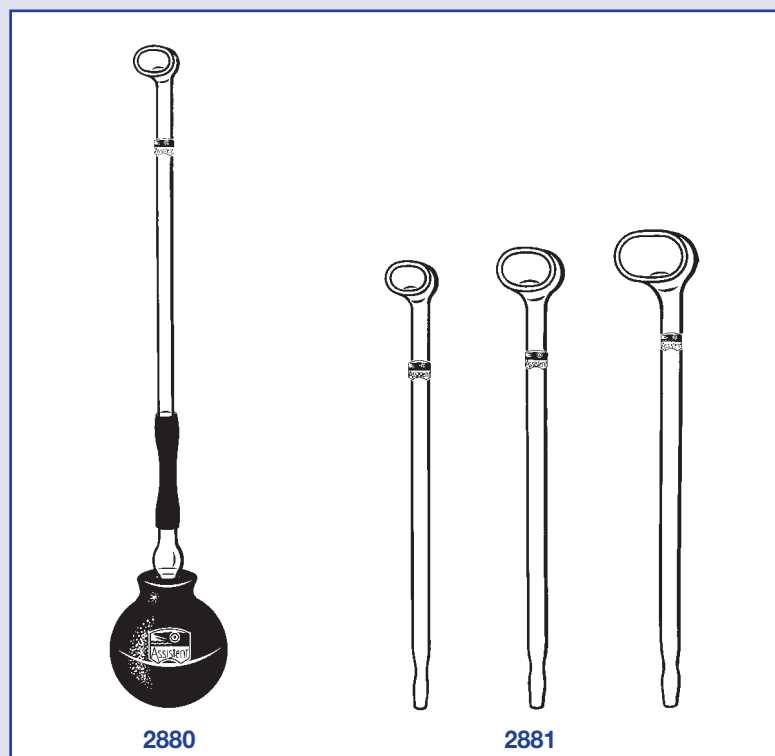


“Assistent” Hospital Equipment

2880 Tonsil suction set acc. to Roeder, CE
consisting of rubber bulb with glass connector,
rubber tube and 4 suction tubes

2881/... Spare tonsil suction tubes, CE

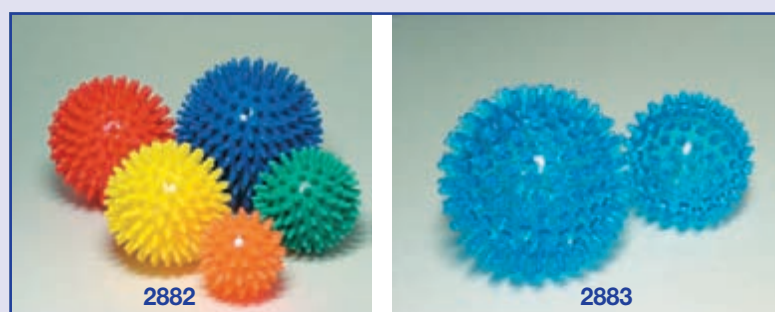
size	1	2	3	4
length of suction part approx.	17	20	23	27 mm
	2881/1	2881/2	2881/3	2881/4



Soft Hedgehog massage balls

CE

2882/55 5,5 cm Ø, orange
2882/7 7,0 cm Ø, green
2882/8 8,0 cm Ø, yellow
2882/9 9,0 cm Ø, red
2882/10 10,0 cm Ø, blue
2883/6 6,0 cm Ø, blue, transparent
2883/8 8,0 cm Ø, blue, transparent



4420/... Stainless-steel jars with knob-cover

outs. diam.

4420/8 85 x 85 mm
4420/10 100 x 100 mm
4420/12 120 x 120 mm
4420/15 150 x 150 mm





Hospital Equipment



“Assistent” Hospital Equipment

2885/... Suction glasses acc. to Bier, €€
with olive at top, with bulb
diam. approx. 3 4 5 6 cm
2885/3 2885/4 2885/5 2885/6

2886/... without bulb
2886/3 2886/4 2886/5 2886/6

2890/... “Assistent” Cupping glasses, €€
diam. approx. 4 5 cm
2890/4 2890/5



“Assistent” Cupping glasses, €€
mouth blown, without olive

2891/1 2,5 cm diam.

2891/2 3,5 cm diam.

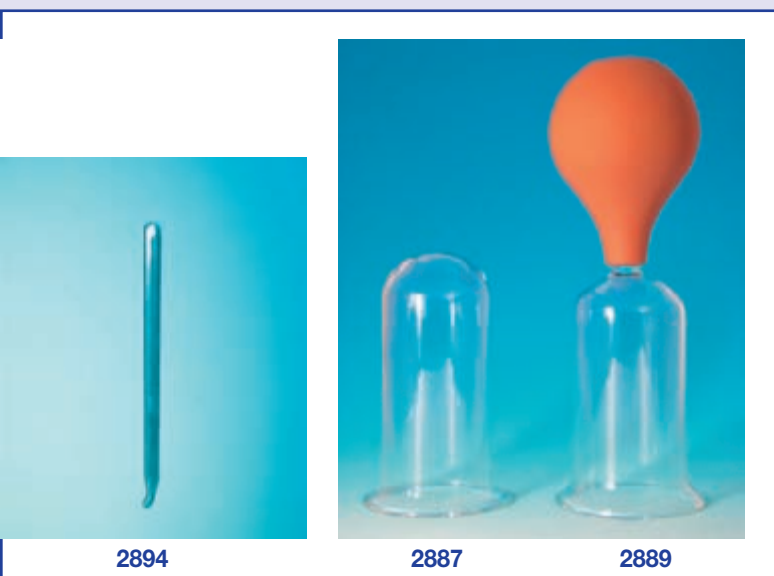
2891/3 4,4 cm diam.

2891/4 5,0 cm diam.

2891/5 6,5 cm diam.

2892/... with olive, **without bulb**, €€
sizes as ref. 2891

2893/... with olive **and bulb**, €€
sizes as ref. 2891



2894 Glassrod for cupping glasses,
one fused end, one conical end,
approx. 140 mm x 7 mm diam.

2887 Massage-glasses, €€
approx. 5 cm diam., 11 cm high, without olive

2888 with olive, without ball

2889 with olive and ball

Hospital Equipment



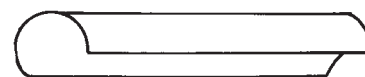
“Assistent” Hospital Equipment

2301 “Assistent” Mouth opener, wooden, spiral shape, CE

2325 “Assistent” Name plate holders of Plexiglas® for hospital beds, approx. 110 x 35 mm diam., packing: 10 in a plastic bag including free note block



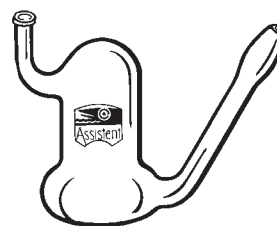
2301



2325

2330 Nasal douches acc to Fraenkel, approx. 30 g CE

2331 Nasal douches acc to Harke, approx. 100 g CE



2330



2331

2870 “Assistent” Hour glasses, 1/4 min. without housing,

2870/2 1/2 min.

2871 “Assistent” Hour glasses, 1/4 min. in nickelplated metal housing

2871/2 1/2 min.

2872 “Assistent” Hour glasses, 1/4 min. in nickelplated metal housing with clip

2872/2 1/2 min.

2895 Nasal suction glasses acc. to Muck, without rubber stopper CE

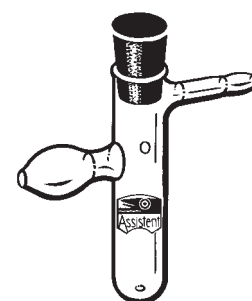
2896 with rubber stopper



2870



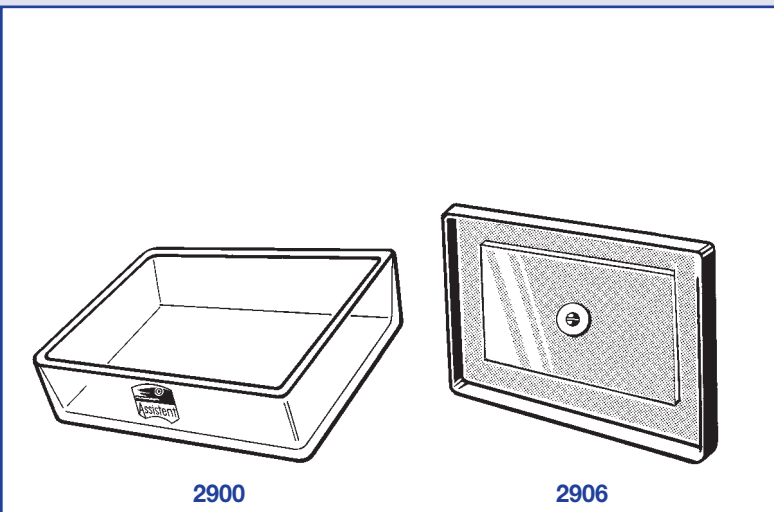
2871



2896



Hospital Equipment



2900

2906

“Assistent” -Instrument Trays

resistant to hot-air sterilisation up to 180 °C

2900/... “Assistent” Instrument trays of glass, without cover

2905/... “Assistent” Covers of stainless steel with knob for above

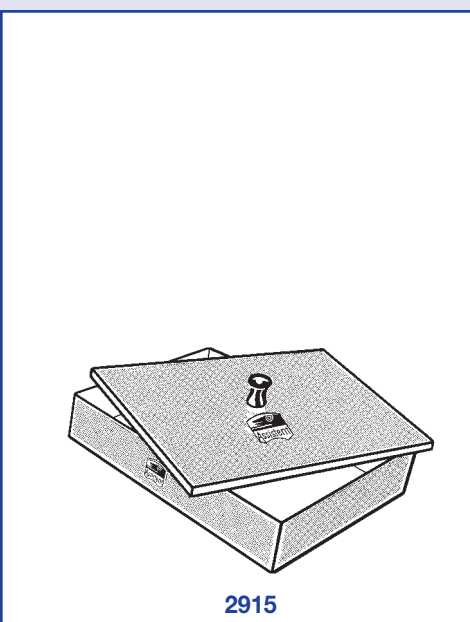
2906/... “Assistent” Covers of stainless steel with knob foam plate and weight for above



2910 2911

2910/... “Assistent” Glass trays with cover of stainless steel

2911/... “Assistent” Glass trays with cover of stainless steel, foam plate and weight



2915

Length outs.	12	17	20	22	27,5	35	20 cm
Width outs	6	9	10	15	15	22	10 cm
Height outs	4	4,5	5	5,5	6	7	10 cm
size	1	2	3	4	5	7	10
Tray	2900/1	2900/2	2900/3	2900/4	2900/5	2900/7	2900/10
Cover complete	2905/1	2905/2	2905/3	2905/4	2905/5	2905/7	2910/10
Cover, weighted complete	2906/1	2906/2	2906/3	2906/4	2906/5	2906/7	2911/10
Stainless steel with cover	-	-	2915/3	2915/4	-	-	-

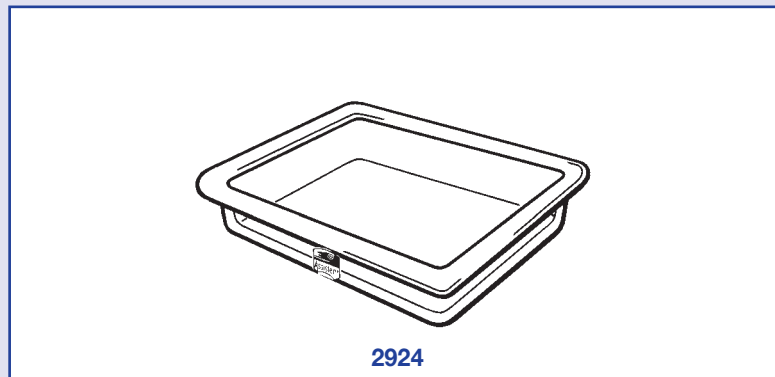
2915/... “Assistent” Stainless steel trays with cover of stainless steel with knob, sizes 3 and 4

Hospital Equipment

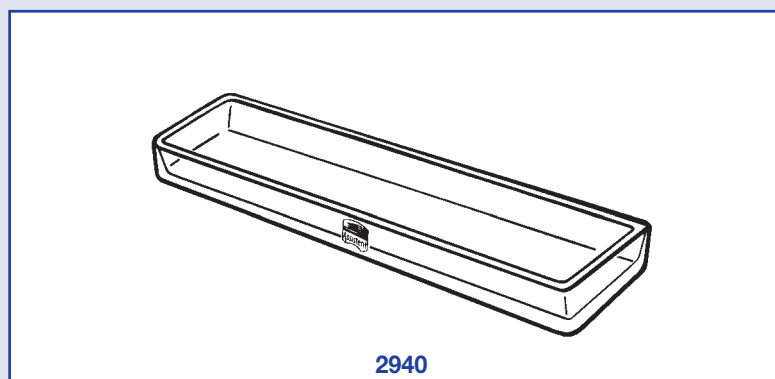


“Assistent” Instrument Trays

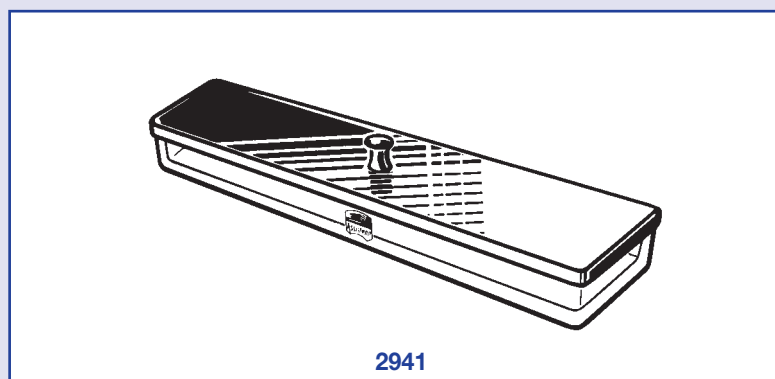
2924 “Assistent” Glass dishes with flanged rim rectangular, approx. 21,5 x 17 cm (dim. directly below rim, rim not included), height approx. 5,5 cm



2940 “Assistent” Catheter trays of glass, without cover approx. 42 x 7,5 x 5 cm outs.

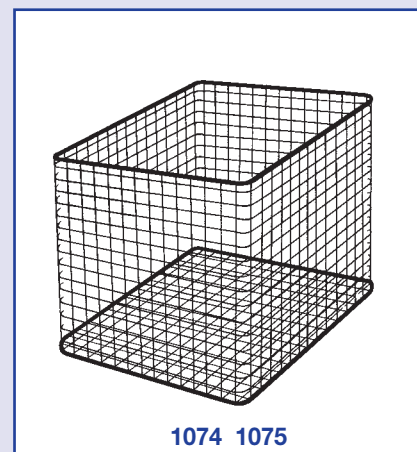


2941 “Assistent” Catheter trays of glass, with metal cover



1074/... Wire baskets, approx. 8 mm square mesh tin-coated
approx.
12x12x12 14x14x14 16x16x16 20x20x20cm
1074/12 **1074/14** **1074/16** **1074/20**

1075/... stainless steel wire
1075/12 **1075/14** **1075/16** **1075/20**





Hospital Equipment



3012

3112

“Assistent” Hospital Equipment

- 3012** “Assistent” service table, €€
of polystyrene, shock proof, with practical cup-holder approx. 53 x 32 cm, height approx. 20 cm (tucked up only 4 cm), each in a box
Practical small table for comfortable eating and reading in bed
- 3112** “Assistent” Sputum cups, €€
of polypropylene, white, with cover and funnel, both detachable, capacity 410 ml, each in a bag

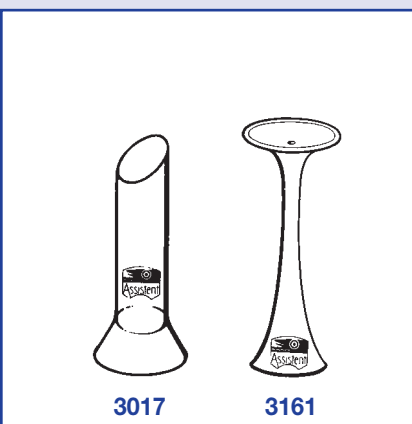


3030

3033

“Assistent” Alcohol lamps of glass approx. 100 ml, with ground-on glass cap, complete with brass wickholder and wick, each in a box

- 3030** with side tubulature and stopper
- 3031** without side tubulature
- 3031/1** wicks for spirit lamps ref. 3030 + 3031
- 3033** Alcohol lamps of stainless steel, approx. 60 ml, with wick and screw cap



3017

3161

“Assistent” vagina specula, €€
approx. 15,5 cm, clear glass

Diam. approx. size	22–24	28–30	34–36	41–43 mm
	1	2	3	4

Clear glass **3017/1** **3017/2** **3017/3** **3017/4**

- 3161** Stethoscopes acc. to Dr. Pinard €€
wooden, one-piece, brightly polished

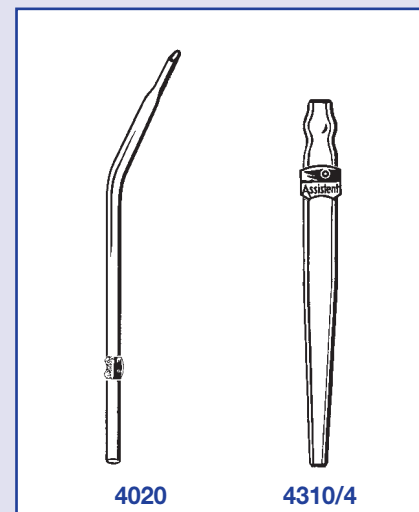
Hospital Equipment



“Assistent” Hospital Equipment

4020 “Assistent” Drinking tubes, (medicine tubes) of clear glass, bent, with mouthpiece, in packs of 25 CE

4310/4 Glass nozzles, sold finish, length 10–11 cm, tip diam. outs. approx. 4 mm CE



“Assistent” Thermometers

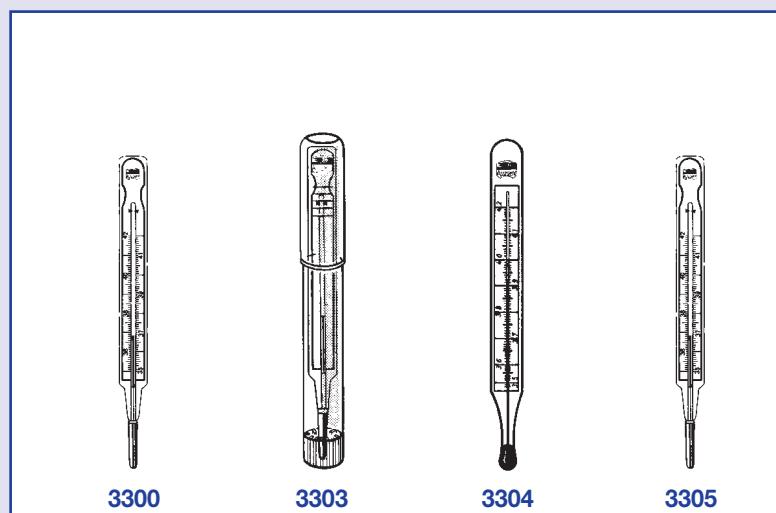
“Assistent” Clinical thermometers oval shape, chromolux scale, precision type, mercury-filled, +35 + 42 : 0,1 °C, acc. to CE

3300 without tube
3303 each in a plastic tube

3304 Clinical thermometers for rectal use, without tube CE

3304/2 each in a plastic tube

3305 Clinical thermometers for prematures length approx. 16 cm, aluminium scale, +25/27 + 42 : 0,1 °C, each in a case CE



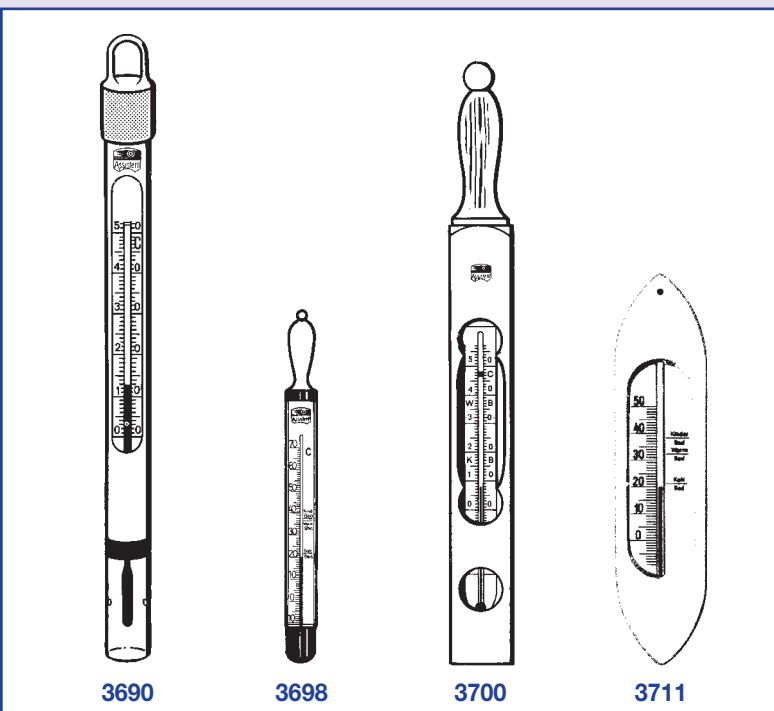
3312 Veterinary thermometers oval shape, with plastic knob, aluminium scale, length approx. 13 cm, short sturdy mercury vessel, +35/36 + 43 : 0,1 °C, officially tested, each in a plastic tube

3315 Digital clinical thermometers, electronic, with signal, LCD-display measuring time about 1 min at room-temperature Duration of battery about 250 hours, waterproof with directions for use + 32 °C – + 42 °C ± 0,1 °C CE





Hospital Equipment

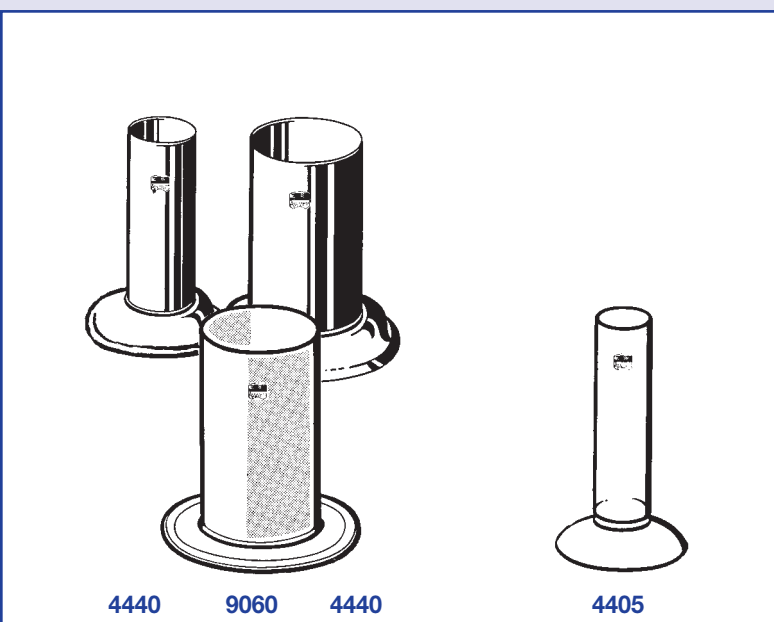


“Assistent” Bath thermometers

- 3690** Bath thermometers of plastic,, for hospitals, length approx. 40 cm, solid finish, blue filling, 0 +50 °C
- 3698** Bath thermometers, cylindrical shape, swims vertical, totally closed, shock-protected capillary, length approx. 27 cm, blue filling, 0 +70 °C
- 3700** Bath thermometers in square wooden case with handle, paper scale, length approx. 22 cm, blue filling, 0 +50 °C
- 3711** Bath thermometers, boat-shape, plastic assorted colours (blue, rose, white), 0 +50 °C



- 3720** Bath thermometers, fish-shape, red or blue plastic, well-swimming, blue filling, 0 +50 °C



“Assistent” Jars for clinical thermometers

4405/... of glass

- 4405/2** approx. 10 x 2,5 cm diam. outs.
4405/5 approx. 10 x 5 cm diam. outs.

4440/... of stainless steel

- 4440/3** approx. 9 x 3 cm diam. outs.
4440/5 approx. 10 x 5 cm diam. outs.

- 9060/10** of polyethylene
 approx. 10 x 5 cm diam. outs.

Hospital Equipment



“Assistent” Hospital Equipment

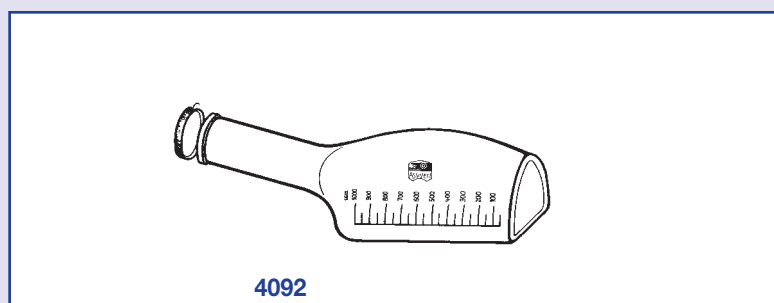
4090 “Assistent” Male urinals of plastic, (low density polyethylene), with approximate scale, with cover CE

4091 without cover, CE



4092 “Assistent” Male urinals of plastic (polycarbonate), clear, with approximate scale, with cover, resistant to steam sterilisation up to 125 °C and hot-air sterilisation up to 135 °C CE

4093 without cover, CE



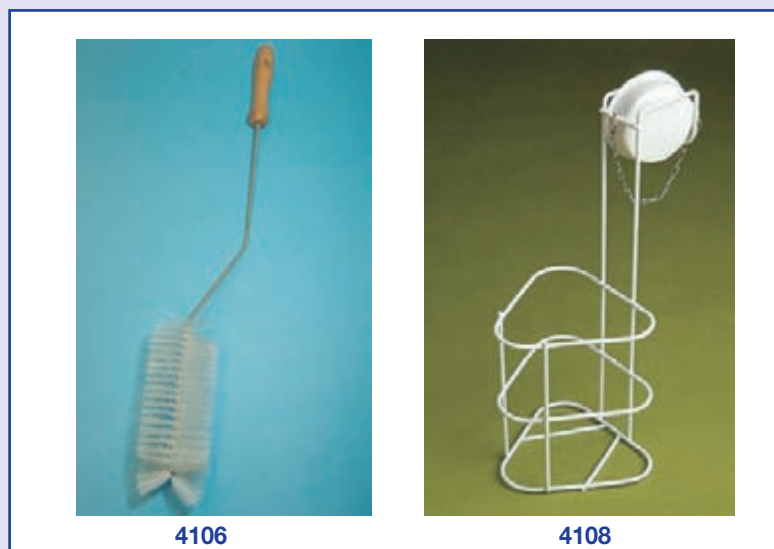
4104 Female urinals of polyethylene, graduated, with cover cont. approx. 1.0 ltr CE

4105 “Assistent” Female urinals of glass, fused rim, ungraduated CE



4106 “Assistent” Brushes for urinals with wooden handle, 470 x 160 x 70 mm

4108 “Assistent” carriers for urinals of plastic-coated wire, white, with chain and cover, for suspension to bed, for one urinal, triangular shape





Hospital Equipment



4115/1

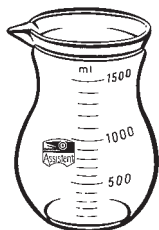


4115/2

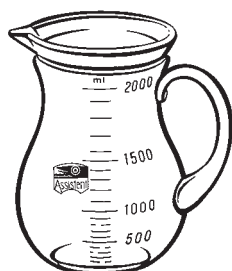
“Assistant” Urine Specimen Containers

4115/1 “Assistant” urine specimen containers, disposable, of polypropylene, with red cover and nipple, cont. approx. 125 ml, with inscription-label

4115/2 “Assistant” urine specimen containers of polypropylene, graduated, with green screw cover and marking area, cont. approx. 125 ml



4118



4119



4120

“Assistant” Urine specimen jars, curved shape, with moulded scale, with spout

4118/... without handle

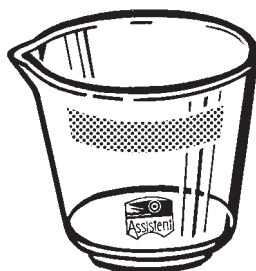
4119/... with handle

capacity	without handle	with handle
250 ml	4118/250	4119/250
500 ml	4118/500	4119/500
1000 ml	4118/1000	4119/1000
1500 ml	4118/1500	4119/1500
2000 ml	4118/2000	4119/2000

4120 Cover of stainless steel for urine specimen jars of 1,5 und 2 ltr.



4122



4125

4122 “Assistant” Urine specimen jars, curved shape, with spout, without handle, without scale, height approx. 70 mm, max. outs. diam. approx. 60 mm, capacity approx. 75 ml

4125 “Assistant” Urine specimen cups with spout and frosted label for inscription, without handle, stackable, capacity approx. 150 ml



4130

4130 “Assistant” Trays of wire “DBGM”, white plastic-coated, with carrying handle, for 12 urine specimen jars No. 4125 or 4118/250, with compartment for ward records and interchangeable plain label for ward name; with adaptable rack for 24 test tubes or centrifuge tubes, for transporting blood specimens without jars and tubes

Hospital Equipment

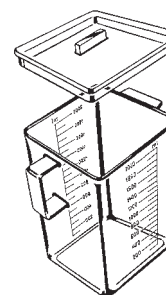


“Assistent” Urine Specimen Containers

- 9117** “Assistent” Urine collecting bottles of polyethylene, square, with screw cap and scale up to 2000 ml, total capacity 2500 ml
- 9117/1** “Assistent” Urine collecting containers, SAN-plastic, with cover, double scale (approximative), capacity 2000 ml CE
- 9118** “Assistent” Urine collecting bottles of polyethylene, brown, square, with screw cap and scale up to 2000 ml



9117



9117/1



9118

- 3150** “Assistent” Bed pans of polypropylene, with cover, ivory coloured, sterilizable up to + 130 °C CE



3150

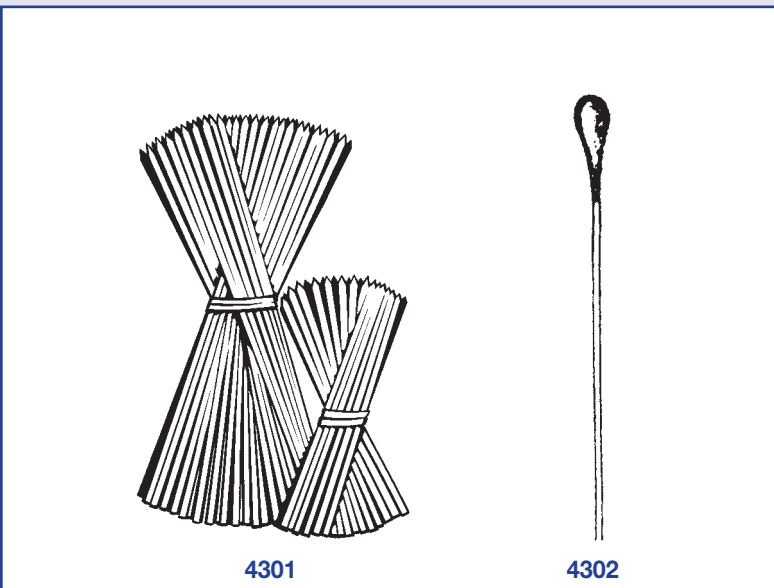
- 3155** “Assistent” bed pans of stainless steel, with cover and knob, cont. approx. 2,8 ltrs. CE



3155



Hospital Equipment



4301

4302

“Assistent” Hospital Equipment

“Assistent” Wooden applicators for cotton,
diam. approx. 3 mm

4300/... Wooden applicators of hardwood,
not pointed (blunt), in bundles of 100 pcs.

length	15	20	25	30	35 cm
	.../15	.../20	.../25	.../30	.../35

4301/... Wooden applicators of hardwood,
one end pointed, in bundles of 100 pcs.

length	15	20	25	30	35 cm
	.../15	.../20	.../25	.../30	.../35

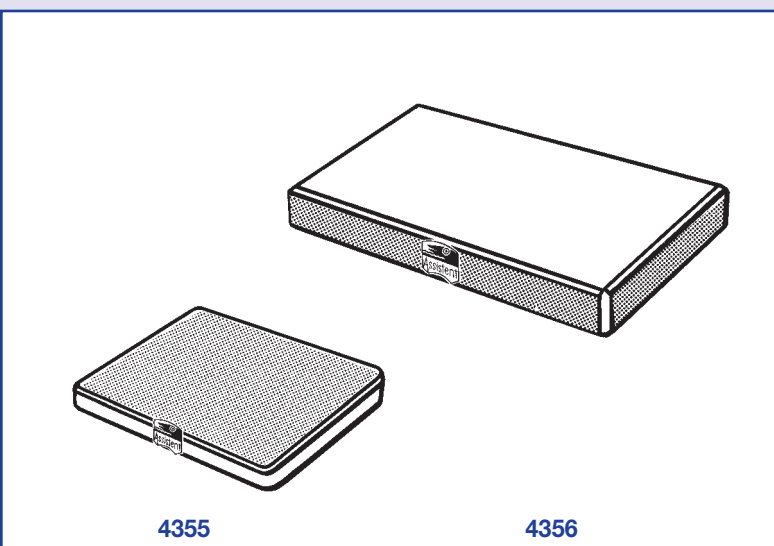
4302 Wooden applicators, with cotton end, length 15 cm,
package of 100 pcs.

4302/2 length 23 cm,
package of 100 pcs.



4303

4303 Wooden applicators, with large cotton end
(approx. 10 mm), length 20 cm,
package of 50 pcs.



4355

4356

4355 “Assistent” Glass plates for dentists
(cement plates) frosted surfaces,
approx. 95 x 70 x 6 mm, in boxes of 10

4356 “Assistent” Cement blocks of glass
surfaces ground and polished,
approx. 150 x 75 mm, thickness 18–20 mm,
each in a box

Hospital Equipment



“Assistent” Hospital Equipment

- 4360** “Assistent” Tongue depressors of clear glass, bent, polished edges, length approx. 20 cm CE
- 4362** “Assistent” Tongue depressors of Plexiglas®, bent, length approx. 20 cm CE
- 4365** “Assistent” Tongue depressors wooden, fine finish, free of splinters, in bags of 100, cartons of 5000 pcs CE
- 4365/1** in boxes of 100 pcs. CE



“Assistent” Glass Jars

“Assistent” Jars for dressing material, cotton, clinical thermometers, forceps and other instruments

4405/... of glass, with base, without cover

Height approx.	10	10	8	12	20 cm
Outs. diam. approx.	2,5	5	8	8	8 cm

.../2 .../5 .../8 .../812 .../820

Height approx.	10	15	20	30
Outs diam. approx.	10	10	10	10

.../10 .../1015 .../1020 .../1030

Height approx.	12	15	18	21 cm
Outs diam. approx.	12	15	18	21 cm

.../12 .../15 .../18 .../21

4409/... Drop-on covers of glass, with knob

for jars of outs diam.	8	10	12	15	18 cm
------------------------	---	----	----	----	-------

.../8 .../10 .../12 .../15 .../18

4410/... Glass jars with drop-on cover of glass, with knob

Height approx.	8	12	20	10	15 cm
Outs diam., approx.	8	8	8	10	10 cm

.../8 .../812 .../820 .../10 .../1015

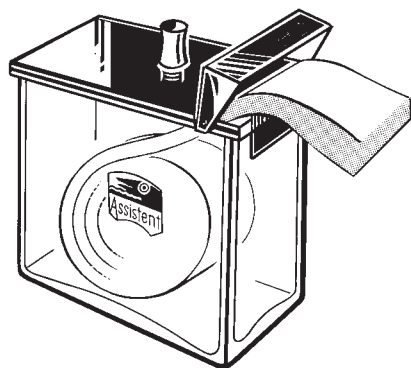
Height approx.	20	12	15	18 cm
Outs diam. approx.	10	12	15	18 cm

.../1020 .../12 .../15 .../18





Hospital Equipment



4290



4295

“Assistent” Hospital Equipment

4290 “Assistent” Cotton dispensers of glass with cover of stainless steel with knob, opening with comb (to tear off pieces of cotton), for cotton reels up to 65 mm width (without cotton)

4291 Cotton reels for above, length 4 m

4295 “Assistent” Cotton dispensers of glass, approx. 10 x 10 cm, with cover of stainless steel, sterilizable (without cotton)

4411/... “Assistent” Covers of stainless steel, with knob, for jars of

outs. diam.	8	10	12	15	21 cm
	.../8	.../10	.../12	.../15	.../21

4412/... “Assistent” Covers of stainless steel, with plate of foam material, for jars of

outs. diam.	8	10	12	15 cm
	.../8	.../10	.../12	.../15

4415/... “Assistent” Glass jars with cover of stainless steel

Height approx.	8	12	20	10 cm
Outs. diam. approx.	8	8	8	10 cm
	.../8	.../812	.../820	.../10

Height approx.	15	20	12	15	21 cm
Outs diam. approx.	10	10	12	15	21 cm
	.../1015	.../1020	.../12	.../15	.../21

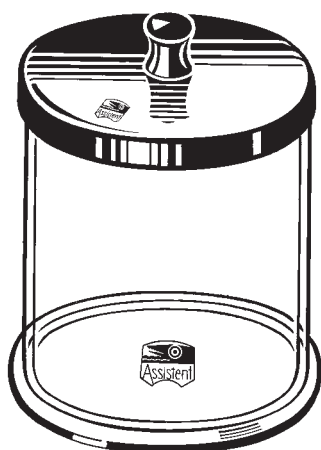
4416/... “Assistent” Glass jars with cover of stainless steel, with foam plate and weight

Height approx.	8	12	20	10 cm
Outs diam. approx.	8	8	8	10 cm
	.../8	.../812	.../820	.../10

Height approx.	15	20	12	15 cm
Outs diam. approx.	10	10	12	15 cm
	.../1015	.../1020	.../12	.../15



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4415 4416



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