



DIN EN ISO 9001

GENERAL CATALOG

Measuring Equipment, Volumetric Measuring Instruments, Hydrometers

BEST
BUY

english

wicaSOFT 9000

Control of inspection, measuring and test equipment acc. to EN ISO 9000 ff, GLP/GMP

The dosing of μ l-fluid volume, so called as „ μ l-liquid-handling“, is an essential part of all lab records in the laboratories working according to the GLP guide lines. The accuracy of the used liquid-handling-products, such as pipettes, dispensers, electronical dosing and titrating apparatuses, glass-measurement devices class A/AS is the key to quality assurance and precise analytical results. Decisive assumption here off is the regular testing, cleansing and maintenance of the dosing apparatuses.

GLP-general standards

The EN ISO 9000 ff, GLP/GMP standards require to work only according to fixed instructions in writing stating how the testing- and measuring inspection shall be effected. Limit values for the accuracy and the coefficient of variation must be specified.

All instruments have to be tested under consideration of the SOP (standard operating procedure). The results shall be evaluated and documented and the corrective procedure shall be established for those instruments which do not match the requirements.

The WICASOFT 9000 will give you the necessary testing instructions for all of our liquid handling items step by step. The testing of the glass volumetric measuring instruments must be made gravimetrically according to ISO 4787. The necessary calculations hereof are based on difficult mathematical formulas.

The WICASOFT 9000 contains all the necessary testing instructions and leads exactly to the volume of the testing procedure step by step. All computation formulas are integrated and documents automatically all of the actual measuring results. The records show a precise documentation of the actual measuring results. The results remain stored and can be used in relation to previous values for a long time period.

The volume is directly calculated, based on the measured weight, with regard to the temperature and atmospheric pressure. The total calculation is done by the software including the documentation of the results. A complete document with all relevant data may be printed. The wica-soft data base keeps you informed on any data of the past and therefore serves perfectly on your quality management.

Why to control volumetric glass instruments ?

The volumetric calibration of glass instruments may change when aggressive media are used. The glass abrading depends on the media and the time. The actual volume differs compared to the original calibration. Therefore the accuracy and precision of volumetric glass instruments must be tested and documented periodically (1 to 3 years).

SOP (standard operating procedure)

The comprehensive SOP contains the justage, cleansing and maintenance. The law gauging rules forces us to observe strongly the limited values which are determined in the DIN 12650 for the different volumetric measuring devices. The clinical laboratories are only allowed to work with liquid-handling products according to the gauging instructions. WITEG confirms and certifies this with the conformity sign „H“ on each part on the instrument. WITEG is responsible to maintain the quality standard. Test certificates for all the volumetric instruments are attached to each apparatus or can be sent upon request for the individual product as specified in our general catalogue.

Import factors for the SOP are:

1. keep the temperature constantly at $20 - 25^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$
2. identical measuring temperature of device and testing fluid
3. testing fluid = non gas, bi-distilled water
4. evaporation protection during measuring at volumes below $<10\ \mu\text{l}$
5. sufficient accuracy on the balance e. g. for volumes $<1\ \mu\text{l}$ or $0.00001\ \text{g}$
6. avoid concussion and non-draught area when setting up the balance
7. possibility of autoclaving the measuring devices

wicasoft 9000 simplifies the testing according to SOP by a step by step procedure leading to a complete testing method. The individual conditions are automatically implemented to calculate the actual volume.

Free of charge batch certificate with all volumetric instruments DIFFICO DIN A/AS

The original inspection is done at witeg company. Therefore the user does not need to inspect the new instrument. Each packing unit contains the respective batch certificate.

Witeg includes the batch number on any volumetric instrument DIN A/AS.

Burets



Pipets



Volumetric flasks



Volumetric cylinders



wicaSOFT 9000

Control of inspection, measuring and test equipment acc. to EN ISO 9000 ff, GLP/GMP



The controlling of measurement device according to GLP and ISO 9000 will reach the main point of the daily lab work. WICASOFT 9000 is a professional testing programme form WITEG and makes your work more easier.

The specified SOPs (standard operating procedure) inform you during testing procedure step by step. Reading results are given automatically.

[illegible]

INPUT:

Connect the PC with a balance and start WICASOFT 9000!

The measuring record shows all the important details of measuring device control.

That's all you need: an analytical balance, a PC with windows (2). 3.x or windows (2) 95, a printer (optional), an interface cord and of course the WICASOFT 9000 software.

1. First check the measuring device according to SOP (standard operating procedures).

2.

Weight results can be inserted into the software automatically or manually.

Wicasoft 9000

Wig Labortechnik GmbH
Am Bläcker 15
57277 Wertenheim

Prüfprotokoll

Gerät												Prüfmittel / -bedingungen					
Bezeichnung : Labmas 10 ml Serien-Nr. : 0315 Interim-Nr. : 4711 Standort : Lab 14 Mängel : keine												Waage Nr. : 2 Bez. : Sartorius Vif 750 Wasser-temperatur : 21,4° C Raum-/Vorlage-temperatur : 20,8° C					
V ₈₀₀	V ₅	V ₃	V ₂	V ₁	V ₁	V ₁	V ₁	V ₁	V ₁	V ₁	V ₁	V ₈₀₀	V ₈₀₀	V ₈₀₀	V ₈₀₀	V ₈₀₀	V ₈₀₀
6,94	6,91	6,90	6,90	1,00	2,00	3,00	4,00	5,00	6,00	6,90	6,90	6,90	6,90	6,90	6,90	6,90	6,90
10,04	10,01	10,00	10,00	2,00	4,00	6,00	8,00	10,00	12,00	14,00	16,00	18,00	20,00	22,00	24,00	26,00	28,00

Sol		R [%]		Sol		V [%]		Auswertung	
	kl		kl		kl		kl	R	V
2 ml	1,00	0,50	1,00	0,50	1,0	1,0	1,0		
6 ml	0,25	-0,17	0,25	0,17	1,0	1,0	1,0		
10 ml	0,25	0,10	0,25	0,20	1,0	1,0	1,0		

Prüfdatum : 24.12.2007

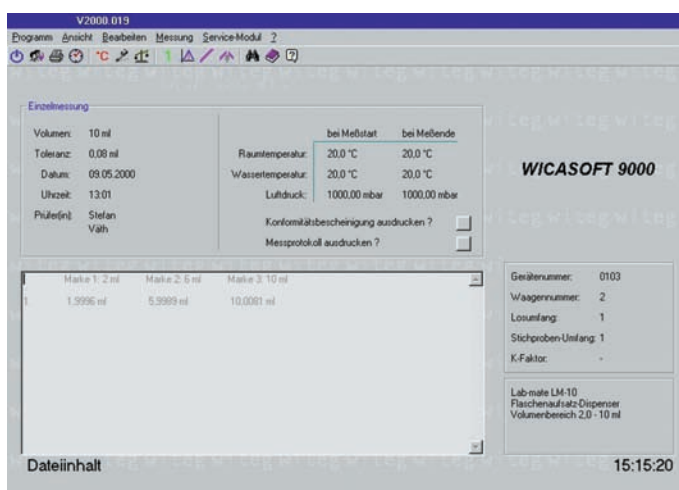
Prüfer : H. Kecher

Erstellt: Gema, RICHM.O.

Die Prüfung entspricht nach ISO 15 366

3.

Limit values must be fixed.



4.

**WICASOFT 9000 documents
the reading results.**



5.

The reading results are available upon request.

„Calibration inside“

EN ISO 9000 ff, GLP/GMP

We have meanwhile developed a new generation of the WITEG-measuring instruments (e. g. TITREX 2000). All electronical measuring devices can justify the accuracy without any tools. Just call up the installed „CAL“ programme and the justification can be made without any problems. This device shows you continuously the new value being actualized. It's very easy and simple to work with.



All dosing and titration processes up to 500 data can be stored non-stop and evaluated at your PC or be printed with almost any printer. Statistical data evaluation can be set up when the Excel programme is used in addition. All you need is the witolink interface. For further information see section liquid- handling page 208.

Lieferumfang: Titrex-Interface, Ladegerät, Verbindungskabel, Software auf Diskette 3,5“.

Order no. 5.497.100

Technical data wicaSOFT 9000



Scope of delivery: wicasoft software, CD-ROM, 3,5“ discs, test manual, test set for small volume piston pipets.

German version

Order no. 3.000.001

English version

Order no. 3.000.002

Pipets < 50 µl

In general the calibration is a complicated process. There is a need for moisture traps and expensive analytical balances. The test set offers a very convenient way to calibrate the instrument with capillaries and a simple holding device.



1. Pick up the capillary



2. Weigh the capillary together with the holding device



3. Fill the capillary with sample liquid off the pipet tip



4. weigh the filled capillary with holding device and register the value. That's it.

Interface cable on request or ask your balance supplier.

Volumetric glassware: General information

The conformity certification:

For volumetric measuring instruments and its accessories which are to be used in medical and pharmaceutical laboratories the „Eichordnung“ - German federal weights and measures regulation - valid as of 1.1.1988 - calls for a „conformity certification“ instead of a test by the PTB. „Conformity certification“ is the compliance of an instrument with the specifications of the „Eichordnung“ - annex 23 - acc. to DIN 12600. Exceptions for the certification become obsolete. The manufacturer - whose quality control procedures have been approved by the Germany federal weight and measures authority certifies the conformity of its instruments - on demand even PTB will confirm. The manufacturer is responsible for the conformity of the instruments, the purchaser and the user are responsible for procuring, keeping available and using conformity certified instruments. The instruments carry the symbol of conformity - a „H“ with an additional code (f.e. WW) designating the claimant of the conformity certification. Blood diluting pipettes and counting chambers still must be officially tested and stamped by the PTB, when being used in Germany. witeg certifies the conformity of its instruments with an „H“ and „WW“ for witeg Wertheim“. With that certification witeg even ensures an uniform and constant level of quality in the sense of accurate measurement results.

Precision of DIFFICO-measuring instruments!

All DIFFICO-measuring instruments are adjusted by our new constructions according to the modernst aspects, i.e.: DIFFICO-graduated and volumetric pipettes, as well as graduated cylinders and volumetric flasks are adjusted and assorted by electronic full automations. The result is that the sources of error which have occurred so far, using the usual manual adjustment, have been removed. DIFFICO-burettes are adjusted by an electronical adjusting plant. Owing to these fully automatic adjusting and assorting machines, as well as th the semi-automatic adjusting plant, we can deliver you DIFFICO-measuring instruments, the precision of which comes up to the highest demands.

DIFFICO-measuring instruments are delivered in 2 different classes (3. class official tested and stamped on special request)

Class DIN-AS-conformity certified.

Main point ring-graduation. The tolerances of these instruments correspond to the provisions of the PTB. A special feature is for pipettes and burettes the swift delivery time which comes up to the requirements in practice. The waiting time indicated must be observed.

Class DIN-B.

Measuring instruments within the 1.5-fold accuracy limits. Short line graduation. The tolerances are more precise than those of the normal class-B. These measuring instruments are designed for the general laboratory requirements.

What does the indication of the tolerance mean?

The accuracy limits (e. g. to. ± 0.05 . see illustration) indicated on every measuring instrument of the class DIN-AS show the largest deviations allowed between the actual volume and the nominal value. In general they apply to the total volume, as well as to any part volume and represent the maximum deviation allowed. In using our modern manufacturing and controlling methods, we can achieve that our branded DIFFICO-measuring instruments remain considerably below this tolerance level. - As our whole production is controlled by statistic quality control, we are sure that 68% of our measuring instruments utilize only 1/3 of the tolerance range allowed and that 95% of our instruments are surely within half the tolerance range. To enable good reproducibility of the results of analyses in using several measuring instruments of a similar type (routine analyses), the standard deviation, even within individual lots, is kept extremely low. According to our final control the standard deviation within a lot is always lower than 1/3 of the deviation allowed.

To order products with an individual certificate please add an „IC“ at the end of the resüective cat.no., e.g. *.***.***IC). For details see page 90.

ISO 9000. It is a must for the documentation of any control of inspection, measuring and test equipment. witeg Labortechnik GmbH prints on all class A/AS volumetric instruments a date-coded batch number for perfect product identification.

Another plus for your quality laboratory acc. to EN ISO 9000. For details see page 89/90.

Correct reading of the meniscus.

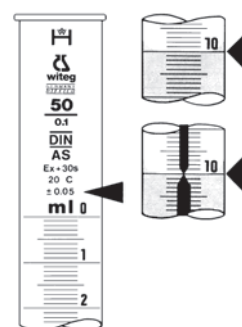
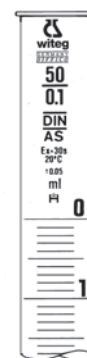
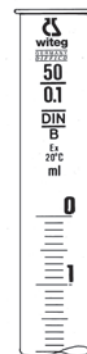
With regard to measuring instruments, made of clear glass or amber glass, the volume which has to be read is determined by putting the meniscus at eye-level. (Avoidance of parallax-error). The volume is read at the lowest point of the meniscus (see illustration). As far as measuring instruments with „Schellbach“ blue line are concerned, you can read the meniscus in a similar way. Here the meniscus must also be put at eye-level, but you must read exactly at the points of contact of the arrow-heads which are caused on a Schellbach blue line (see illustration).

With regard to burettes you must observe the following: As far as burettes are concerned, the measuring volume is limited to below by the liquid meniscus which is adjusted to the lowest mark of the scale.

Correct handling of burettes.

Basic condition: the burette must be vertically clamped in.

1. On filling a burette you must observe that it is filled, approximately 5 mm above the zero point (see illustration)
2. Then set the meniscus to the zero point. The drop which adheres to the delivery tip must be removed (see illustration)
3. Allow the liquid to flow out and set the meniscus about 5 mm above the point desired. Thus the delivery is interrupted (see illustration)
4. After having waited for some time, allow the liquid to flow out up to the point desired and wipe off the drop which adheres to the delivery tip on the titration vessel (see illustration)
5. On every new titration the burettes must be always set to the zero point, as described above. As far as a 50 ml burette is concerned you must not continue to titrate, after the first titration from 0 ml to 10 ml, from 10 ml to 20 ml and then from 20 ml to 30 ml, but you must allow the liquid to flow out always from the zero point to the mark required.





What must be observed concerning graduated and volumetric pipettes?

There are graduated and volumetric pipettes for complete and partial delivery.

1. Graduated pipettes for complete delivery and volumetric pipettes with one mark are adjusted the like that the measuring volume in the delivery tip limits itself by automatic adjustment of the liquid (see illustration a).
2. With regard to graduated pipettes for partial delivery or volumetric pipettes with two marks, the measuring volume to below is limited by the liquid meniscus which is set to the lowest mark (see illustration b).
3. The measuring volume of graduated pipettes, calibrated to contain, is limited by the lower-end of the delivery tip (see illustration c).

Handling to 1:

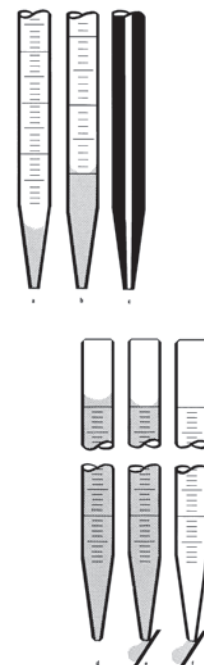
The pipette is filled about 10 mm above the mark which limits the volume which has to be measured (see illustration d). Then the liquid is allowed to flow out up to this mark. A drop which adheres to the delivery tip is wiped off (see illustration e). Let the contents of the pipette flow into a vessel, by putting the tip of the vertically held pipette to the wall of the vessel. After termination of the delivery, the waiting time indicated must be observed and then the pipette tip must be observed and then the pipette tip must be wiped off at the vessel (see illustration f).

Handling to 2:

The pipette is filled about 10 mm above the zero point. Then allow the liquid to flow out up to the zero point. A drop which adheres to the delivery tip is wiped off. Then allow the liquid to flow into a vessel up to 10 mm above the mark which limits the volume which has to be measured by putting the delivery tip of the vertically held pipette to the wall of the vessel. After the waiting time prescribed, the liquid is drained off up to the mark desired and the pipette tip is wiped off at the vessel.

Handling to 3:

Graduated pipettes which are calibrated to contain need no delivery- and waiting times. The liquid is absorbed up to the mark and then it flows out completely. Then the residue is quantitatively removed from the pipette by rinsing it.



What you must observe on weighing.

1. The weighing bottle must be absolutely clean.
2. Cleaning with water and subsequent rinsing with distilled water is insufficient.
3. The weighing bottle must be cleaned with a cleansing concentrate, such as our „WITONEX“ (see directions for use of WITONEX). In case you do not clean your weighing bottle, the tolerance of your measuring instrument is increased by almost the double of the calibration tolerance. Many series of tests in our research laboratory have confirmed this fact. Only when the wall of the vessel is absolutely clear, the correct volume can be drawn out of the measuring instrument (burette, pipette) owing to the capillary effect which develops between the tip and the wall of the weighing bottle.

How to work correctly with a volumetric flask?

All volumetric flasks are apparatuses to contain.

1. The dry and cleaned volumetric flask is filled up without sprinkling the neck of the volumetric flask above the volume mark (see illustration a).
2. In case the neck of the volumetric flask was wetted nevertheless, the neck must be carefully dried inside. For this purpose we suggest you to use rolled-up filter paper (see illustration b).
3. The volumetric flask is carefully filled up to the volume mark with a pipette, without wetting the neck of the volumetric flask once more (see illustration c).



What is a specific gravity bottle?

A specific gravity bottle is a special form of the volumetric flask, strictly speaking a volumetric flask which was cutted off at the capacity mark.

1. The nominal volume which is indicated on the bottom of the corresponding specific gravity bottle.
2. The actual volume which is weighed out up to the second decimal place and which is written onto the body of the specific gravity bottle.

Handling:

1. The specific gravity bottle is filled up to the ground.
2. Then put the stopper into the apparatus, so that there are no air bubbles left and heat the apparatus up to 20 °C exactly.
3. Then remove all liquid with a filter paper from the surface of the specific gravity bottle, without absorbing and liquid from the bore-hole in the stopper.

The essential advantage of the diffusion paint „DIFFICO“.

For affixing coloured graduations on volume measuring instruments, diffusion paints are more and more used besides the enamel paints. Enamel paint-graduations are in close contact with the glass surface after the annealing process. As the graduation is raised towards the glass surface, it can be damaged by mechanical stress, e.g. in rinsing machines. The same applies also to coloured, melted glass. Enamel-paint graduations are also only limitedly resistant to aggressive chemical reagents, as, in course of time, the pigments are dissolved out of the graduation, and thus the close unit between the colour pigments and the glass is destroyed. On affixing graduations by means of a diffusion paint, a paste or a corrosive is applied onto the glass which must be stained. This paste or corrosive contains the staining ions, e.g. silver-ions. By tempering within the range of the transformation temperature of the respective glass, an exchange of cations between the corrosive and the glass surface arises. During the process silver-ions diffuse from the corrosive into the glass interior, while predominantly monovalent cations (e.g. sodium-ions) pass from the glass surface into the corrosive. Thus a colouration of the glass can be achieved under the glass surface by such an exchange of cations. As the staining ions diffuse into the glass during this application method of graduations, and therefore are under the glass surface, the graduation is extremely resistant to mechanical and chemical influences. Thus the graduation is an integrated component of the glass surface, and, in comparison with the enamel-paints and the stained glass, it can hardly be destroyed, unless the glass surface itself has been abraded.



The Witeg Germany logo, featuring the company name in blue on a yellow background, with a red and black horizontal stripe below it.

witeg
GERMANY

DIN EN ISO 9001

**Precision
saves time
and money
and problems**

**witeg
high precision instruments
for your laboratory**

**BEST
BUY**



IVD-regulation ...and its meaning for witeg products

The IVD-regulation of the EU

On December 7th 1997 the IVD regulation for in-vitro diagnostics was published and enforced. Within one year it had to be adopted to the national laws.



What are in-vitro diagnostics

In-vitro diagnostics are medical products which are used in in-vitro tests with samples of human origin including blood and tissue samples.

In-vitro diagnostics are such as reagents, calibration substances or instruments, apparatuses, analytical systems or sample vessels if they are specifically recommended for medical samples.

In-vitro diagnostics are used to receive information about

- physiological or pathological conditions
- congenital abnormalities
- therapeutical measures.

What are medical products?

Medical products are all instruments, apparatuses, media or equipment including software which is specifically recommended for application at the human being by the manufacturer.

- For cognition, precaution, test and treatment, alleviation or compensation of sicknesses, injuries or handicaps
- For examinations, substitutions or changes of the anatomic structure or physiological process
- For conception regulation

Not included are pharmacological or immunological media which are regulated in the law governing the manufacture and prescription of drugs.

Certification

The CE symbol on a product confirms that the product is in accordance with the demands of the EU-regulations for this product type and, if necessary, was tested according to the regulations. The manufacturer imprints the symbol at the product and in addition makes out the conformity certificate which confirms the agreement of the product with the corresponding regulations and standards.

witeg supplies only medical products of the in-vitro group IVD, such as Diffico volumetric instruments class A/AS, micro pipets, blood pipets, counting chambers, reaction vessels and liquid handling products like Witopet, Witopet digital, Witopet elect, Witopette and Witopette-Tips, Witoped, Labmax Dispenser and Titrex Digital Buret and pipet tips.

Time scale for the IVD-regulation

- On December 7th 1998 the regulation was enforced
- On June 7th 2000 the regulations will be applied in national laws
- On December 7th 2003 the period of transition for the IVD ends
any IVD-products must be indicated with the CE-mark
- Until December 7th 2005, i.e. two years later, all products which were produced before December 7th 2003 but are still in stock at dealers or end-users must be sold out.

Certificates witeg-Diffico® volumetric instruments

H and batch number

All witeg Diffico volumetric instruments are conformity certified and indicate a digital easy-to-read batch number. They can be supplied with the following certificates:

Quality certificate (Werksprüfzeugnis)

Available as batch or individual certificate. The record is taken in accordance with DIN EN ISO 9001, DIN ISO 10012-1 and ISO 4787.

The initial test is made at witeg for any Diffico certified volumetric instrument. The user can just copy the certified data and needs not to establish an initial test.

Batch certificate

All instruments and certificates from the same production batch carry the same batch number. The certificate records the mean value, the standard deviation and the date of issue:

01.08.01 (Batch number)

This certificate is included with any standard pack of witeg Diffico volumetric instruments class A/AS free of charge.

Individual certificate

Instruments and certificates carry in addition to the batch number an individual serial number. The individual volume, the tolerances and the date of issue are recorded:

01.08.0110 (Batch- and individual Serial number)

Please add an „IC“ at the end of the order number to order this certificate.

Conformity certificate

With this mark witeg certifies the conformity of the instrument with the „deutsche Eichordnung“. The mark is printed onto the products in accordance with DIN 12600. All witeg-Diffico volumetric instruments are conformity certified.

Official conformity certificate

With this mark the „deutsche Eichamt“ confirms the conformity with the „deutsche Eichordnung“. The mark is printed onto the products in accordance with DIN 12600.

For witeg-Diffico volumetric instruments with official conformity certificate please add an „OC“ at the end of the order number.

Official calibration protocol

The protocol is set up by the „Eichamt“ and acknowledged by many countries. Both, instrument and protocol carry an individual serial number for identification including date of issue.

On request witeg-Diffico volumetric instruments are supplied with the official protocol, please add an „OCC“ at the end of the order number.

witeg started immediately to realize the regulations when they were enforced and began already to supply CE-marked equipment.

And witeg fulfills already all basic demands for CE-marking of IVD-products. The marking of these products may only start as soon as the legislation is defined finally.

All the other medical products except of IVD-products must already be marked with the CE-mark today.

Technical data burettes class B

Capacity ml	Division ml	Tolerance ±ml
5	0.02	0.02
10	0.02	0.05
25	0.05	0.05
50	0.10	0.10
100	0.20	0.15

Burettes class DIN-B, short line graduation, acc. to DIN 12700 (ISO/R385). DURAN.

Amber stain graduations and inscriptions „DIFFICO“, resistant to alkalis and acids and abrasion with beaded rims which have considerable mechanical strength. All plugs with screw thread retaining nuts. Calibrated to deliver.

Delivery time 30 - 60 s, without waiting time.

Burettes class B.

Without stopcock.

Capacity ml	Clear glass	Schellbach- blue line	Amber glass
Burette-tubes			
5	3.000.050	3.002.050	3.004.050
10	3.000.100	3.002.100	3.004.100
25	3.000.250	3.002.250	3.004.250
50	3.000.500	3.002.500	3.004.500
100	3.000.900	3.002.900	3.004.900

Burettes, with tip, rubber and tubing

5	—	3.002.051	—
10	—	3.002.101	—
25	—	3.002.251	—
50	—	3.002.501	—
100	—	3.002.901	—

Burettes class B.

With short line graduation.

Capacity ml	Clear glass	Schellbach- blue line	Amber glass
With ST-glass plug			
5	3.000.052	3.002.052	3.004.052
10	3.000.102	3.002.102	3.004.102
25	3.000.252	3.002.252	3.004.252
50	3.000.502	3.002.502	3.004.502
100	3.000.902	3.002.902	3.004.902

With ST-PTFE-plug

5	3.000.053	3.002.053	3.004.053
10	3.000.103	3.002.103	3.004.103
25	3.000.253	3.002.253	3.004.253
50	3.000.503	3.002.503	3.004.503
100	3.000.903	3.002.903	3.004.903

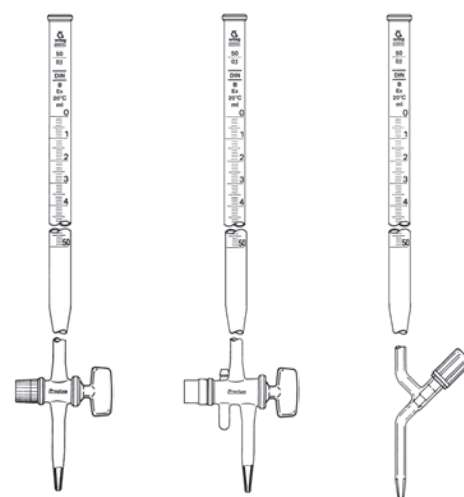
With two-way stopcock and ST-glass-plug

5	3.000.056	3.002.056	3.004.056
10	3.000.106	3.002.106	3.004.106
25	3.000.256	3.002.256	3.004.256
50	3.000.506	3.002.506	3.004.506
100	3.000.906	3.002.906	3.004.906

With straight valve stopcock

5	3.000.057	3.002.057	3.004.057
10	3.000.107	3.002.107	3.004.107
25	3.000.257	3.002.257	3.004.257
50	3.000.507	3.002.507	3.004.507
100	3.000.907	3.002.907	3.004.907

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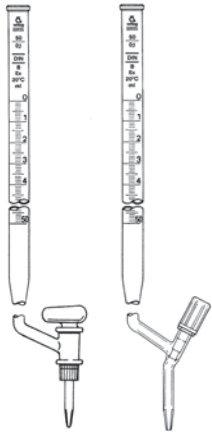




Burettes class B.
With lateral stopcock.

Capacity ml	Clear glass	Schellbach- blue line	Amber glass
With solid ST-glass-plug			
5	3.000.054	3.002.054	3.004.054
10	3.000.104	3.002.104	3.004.104
25	3.000.254	3.002.254	3.004.254
50	3.000.504	3.002.504	3.004.504
100	3.000.904	3.002.904	3.004.904
With needle valve stopcock, with PTFE-needle valve			
5	3.000.055	3.002.055	3.004.055
10	3.000.105	3.002.105	3.004.105
25	3.000.255	3.002.255	3.004.255
50	3.000.505	3.000.505	3.004.505
100	3.000.905	3.002.905	3.004.905

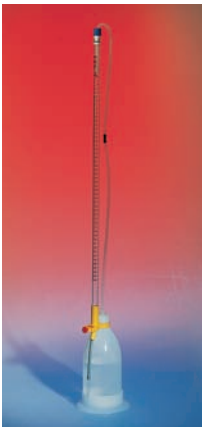
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Burettes class B.
With detachable PTFE-stopcock

House and plug made of PTFE. Bore 2.5 mm, with O-ring gasket and interchangeable glass tip.

Capacity ml	Clear glass	Schellbach- blue line	Amber glass
25	3.000.258	3.002.258	3.004.258
50	3.000.508	3.002.508	3.004.508
100	3.000.908	3.002.908	3.004.908
Spare parts:			
Spare PTFE-stopcock without glass-tip			3.004.910
Spare glass-tip			3.004.911



Automatic burettes class B. AR-glass. Short line graduation, with Schellbach blue line.
With push button for drop-by-drop delivery, PE-reservoir. With stable base PE-LD with Pellet type (no soiling).

Capacity ml	Division ml	Tolerance ±ml	Complete	Spare parts	Spare bottle	Spare armature	Spare base
5	0.05	0.02	3.312.005	3.313.005	3.314.015	3.315.015	3.316.015
10	0.02	0.03	3.312.010	3.313.010	3.314.015	3.315.015	3.316.015
15	0.1	0.04	3.312.015	3.313.015	3.314.015	3.315.015	3.316.015
25	0.1	0.04	3.312.025	3.313.025	3.314.050	3.315.050	3.316.050
50	0.1	0.08	3.312.050	3.313.050	3.314.050	3.315.050	3.316.050
Complete plastic version							
25	0.1	0.04	7.010.125	7.010.425	3.314.050	3.315.050	3.316.050
50	0.1	0.08	7.010.150	7.010.450	3.314.050	3.315.050	3.316.050

Burettes class B. Clear PMMA-burette tubing.
1. PTFE-connector, silicone tubing and PE-tip, with Mohr clip
2. With straight PTFE-stopcock

Capacity ml	Division ml	Tolerance ±ml	1.	2.
25	0.1	0.04	7.010.225	7.010.325
50	0.1	0.08	7.010.250	7.010.350



Technical data burettes class AS

Capacity ml	Division ml	Tolerance ±ml
5	0.02	0.01
10	0.02	0.02
25	0.05	0.03
50	0.10	0.05
100	0.20	0.08

Burettes class DIN-AS. Conformity certified. Main point ring graduation, acc. to DIN 12700 (ISO R385).

With amber stain DIFFICO graduations and inscriptions.

Tempered delivery tips offering a wear resistance which is up to seven times better. Plugs with screw thread retaining nuts.

Delivery time 35-40 s.

Waiting time 30 s.

DURAN-borosilicate glass, Difficobblue (Amber glass, Difficowhite)

Burettes, Daffert class B. With automatic zero point, with blue chemical resistant DIFFICO-graduation. With two-way stopcock.

Capacity ml	Clear glass	Schellbach- blue line
With solid ST-glass plug		
25	3.300.256	3.302.256
50	3.300.506	3.302.506
With ST-PTFE-plug		
25	3.300.257	3.302.257
50	3.300.507	3.302.507



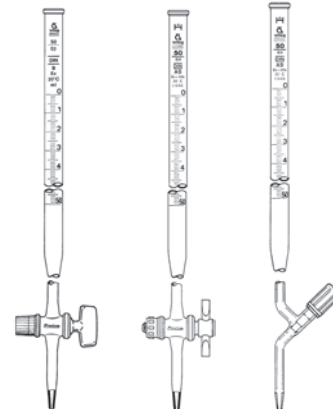
Burettes class AS., with tip and rubber tubing. With Schellbach-blue line.

Capacity ml	
5	3.012.051
10	3.012.101
25	3.012.251
50	3.012.501
100	3.012.901

Burettes class AS. Conformity certified, with straight stopcock.

Capacity ml	Clear glass	Schellbach- blue line	Amber glass
With ST-glass plug			
5	—	3.012.052	—
10	3.010.102	3.012.102	3.014.102
25	3.010.252	3.012.252	3.014.252
50	3.010.502	3.012.502	3.014.502
100	—	3.012.902	—
With ST-PTFE-plug			
5	—	3.012.053	—
10	3.010.103	3.012.103	3.014.103
25	3.010.253	3.012.253	3.014.253
50	3.010.503	3.012.503	3.014.503
100	—	3.012.903	—
Valve stopcock, with PTFE-needle valve			
5	—	3.022.057	—
10	3.020.017	3.022.107	3.024.107
25	3.020.257	3.022.257	3.024.257
50	3.020.507	3.022.507	3.024.507
100	—	3.022.907	—

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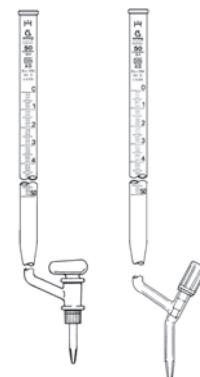
ISO 9000. It is a must for the documentation of any control of inspection, measuring and test equipment. witeg Labortechnik GmbH prints on all class A/AS volumetric instruments a date-coded batch number for perfect product identification.

Another advantage for your quality laboratory acc. to EN ISO 9000.

Burettes class AS. Conformity certified, with lateral stopcock.

Capacity ml	Clear glass	Schellbach- blue line	Amber glass
With solid ST-glass plug			
5	—	3.012.054	—
10	3.010.104	3.012.104	3.014.104
25	3.010.254	3.012.254	3.014.254
50	3.010.504	3.012.504	3.014.504
100	—	3.012.904	—
With valve stopcock, with PTFE-needle valve			
5	—	3.012.055	—
10	3.010.105	3.012.105	3.014.105
25	3.010.255	3.012.255	3.014.255
50	3.010.505	3.012.505	3.014.505
100	—	3.012.905	—

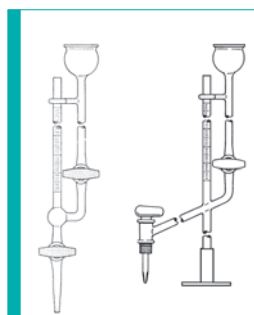
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Technical data micro burettes

Capacity ml	Division ml	Tolerance ±ml	
		class B	class A
1	0.01	0.02	—
2	0.01	0.02	0.01
5	0.02	0.02	0.01
10	0.02	0.03	0.02

Micro burettes, acc. to DIN 12700, with amber stain DIFFICO-graduation. With Schellbach blue line. All plugs with screw-thread retaining nuts. DURAN-borosilicate glass.



Micro burettes, Bang, DIN 12700

Class B short line graduation, delivery time 30-60 s, without waiting time.

Class AS with main point ring-graduation. Delivery time 35-45 s, waiting time 30 s.

Capacity ml	ST-glass- plugs	ST-PTFE- plugs	PTFE- needle valve
Class B with stopcocks			
1	3.352.012	—	—
2	3.352.022	3.352.023	—
5	3.352.052	3.352.053	—
10	3.352.102	3.352.103	—
Class B with lateral stopcock			
1	3.363.012	—	—
2	3.363.022	3.363.023	—
5	3.363.052	3.363.053	—
10	3.363.102	3.363.103	—
Class AS with stopcocks			
2	3.372.022	3.372.023	—
5	3.372.052	3.372.053	—
10	3.372.102	3.372.103	—
Class AS with lateral stopcock			
2	3.383.022	3.383.023	3.383.025
5	3.383.052	3.383.053	3.383.055
10	3.383.102	3.383.103	3.383.105

Technical data automatic burettes

Capacity ml	Division ml	Tolerance ±ml	
		class B	class AS
10	0.02	0.03	0.02
25	0.05	0.04	0.03
50	0.10	0.08	0.05
100	0.20	0.15	—

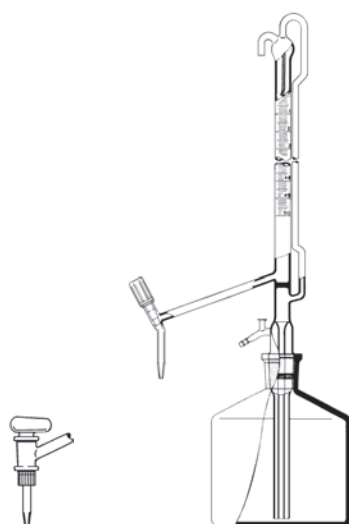
Automatic burettes Pellet, DURAN. With 2 l reservoir bottle, without aspirator bulb.

Class B with short line graduation.

Class AS with main point ring-graduation, conformity certified, Difficoblue (amber glass, Difficowhite).

Automatic burettes, Pellet.

Capacity ml	Class B Schellbach	Class B amber glass	Class AS Schellbach	Class AS amber glass
Without stopcock, with lateral stopcock, with solid ST-glass plug				
10	3.102.104	3.104.104	3.122.104	3.124.104
25	3.102.254	3.104.254	3.122.254	3.124.254
50	3.102.504	3.104.504	3.122.504	3.124.504
100	3.102.904	3.104.904	—	—
Without stopcock, with lateral needle valve, with PTFE-needle valve, with overtight device				
10	3.102.105	3.104.105	3.122.105	3.124.105
25	3.102.255	3.104.255	3.122.255	3.124.255
50	3.102.505	3.104.505	3.122.505	3.124.505
100	3.102.905	3.104.905	—	—
With stopcock, with hollow ST-glass-plug, with lateral needle valve, with solid ST-glass plug				
10	3.112.106	3.114.106	3.122.106	3.124.106
25	3.112.256	3.114.256	3.122.256	3.124.256
50	3.112.506	3.114.506	3.122.506	3.124.506
100	3.112.906	3.114.906	—	—
With stopcock, with solid ST-glass plug, with lateral needle valve stopcock, with PTFE-needle valve, with overtight device				
10	3.112.107	3.114.107	3.122.107	3.124.107
25	3.112.257	3.114.257	3.122.257	3.124.257
50	3.112.507	3.114.507	3.122.507	3.124.507
100	3.112.907	3.114.907	—	—
With stopcock, with NS-PTFE-plug, with lateral needle valve stopcock, with PTFE-needle valve, with overtight device				
10	3.112.108	3.114.108	3.122.108	3.124.108
25	3.112.258	3.114.258	3.122.258	3.124.258
50	3.112.508	3.114.508	3.122.508	3.124.508
100	3.112.908	3.114.908	—	—

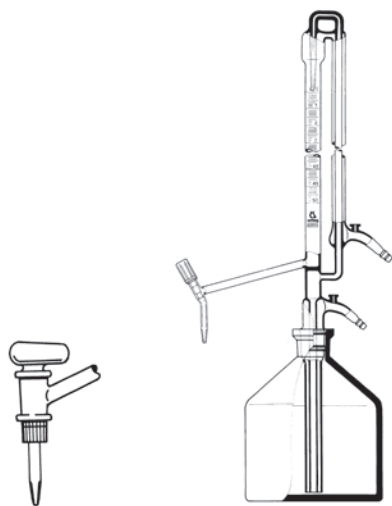


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ISO 9000. It is a must for the documentation of any control of inspection, measuring and test equipment. witeg Labortechnik GmbH prints on all class A/AS volumetric instruments a date-coded batch number for perfect product identification. **Another advantage for your quality laboratory acc. to EN ISO 9000.**

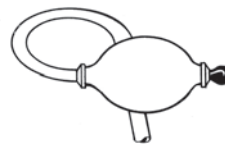
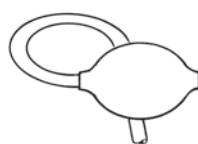


Universal automatic burettes (DGBM), class DIN AS. Conformity certified, main point ring-graduation, acc. to DIN 12700. DURAN. With this universal automatic burettes you can work with pressure or vacuum and fill in these ways the fluids into the measuring tube. The titration under vacuum has the advantage that no bubbles exist. We deliver as a separate part an aspirator bulb which is usable for vacuum and for pressure. The construction of the automatic burette shows considerable mechanical strength against the conventional burettes. With amber stain graduations and inscriptions DIFFICO, resistant to alkalis and acids and abrasion. With 2 l reservoir bottle ST 29/32. All plugs with screw-thread retaining nuts. Delivery time 35-45 s, waiting time 30 s. Division and tolerance as above.

Capacity ml	Schellbach- blue line	Amber glass
With lateral stopcock, with solid ST-glass plug		
10	3.152.104	3.154.104
25	3.152.254	3.154.254
50	3.152.504	3.154.504
With lateral stopcock, with PTFE-needle valve		
10	3.152.105	3.154.105
25	3.152.255	3.154.255
50	3.152.505	3.154.505

Accessories for automatic burettes.

Type	
Reservoir bottle 1 l, ST 29/32, clear glass	3.155.100
Reservoir bottle 2 l, ST 29/32, clear glass	3.155.200
Reservoir bottle 1 l, ST 29/32, amber glass	3.156.100
Reservoir bottle 2 l, ST 29/32, amber glass	3.156.200
Aspirator bulb for pressure	3.157.000
Aspirator bulb for vacuum	3.158.000
Aspirator bulb with net	3.159.000



Technical data volumetric pipettes.

Capacity ml	Color- code	Tolerance \pm ml class B	Tolerance \pm ml class AS	Deliv. time s class B	Deliv. time s class AS
0.5	2 x black	0.009	0.005	4-12	4-8
1	blue	0.010	0.007	5-13	5-9
2	orange	0.015	0.010	5-13	5-9
3	black	0.020	0.015	7-15	7-11
4	2 x red	—	0.015	—	7-11
5	white	0.020	0.015	7-15	7-11
6	2 x orange	—	0.015	—	7-11
7	2 x green	—	0.015	—	8-12
8	blue	—	0.020	—	8-12
9	black	0.020	0.020	—	8-12
10	red	0.030	0.020	8-16	8-12
15	green	0.050	0.030	9-17	9-13
20	yellow	0.050	0.030	9-17	9-13
25	blue	0.050	0.030	10-20	10-15
30	black	—	0.030	—	13-18
40	white	—	0.050	—	13-18
50	red	0.080	0.050	13-25	13-18
100	yellow	0.120	0.080	25-35	25-35

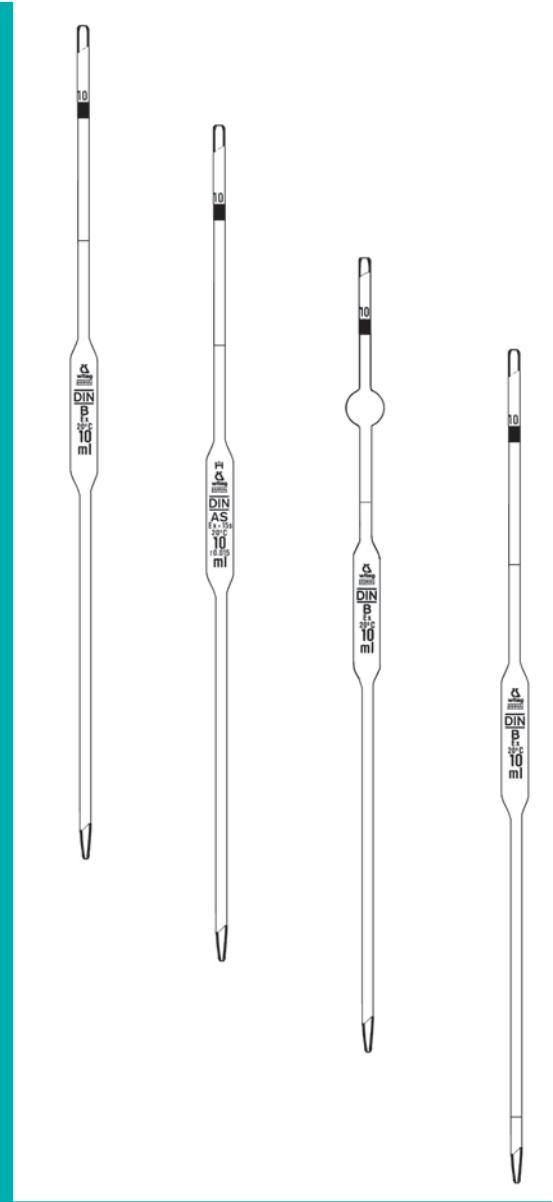


Burette holders, PP. Can be fixed to stands of dia. 8-14 mm.

Typ	
Single	7.053.001
Double	7.053.002

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ISO 9000. It is a must for the documentation of any control of inspection, measuring and test equipment. witeg Labortechnik GmbH prints on all class A/AS volumetric instruments a date-coded batch number for perfect product identification. **Another advantage for your quality laboratory acc. to EN ISO 9000.**



Volumetric pipettes. With ISO-COLOR-Code, acc. to DIN (ISO 648). Calibrated to contain „EX“. With amber stain DIFFICO ring marks and inscriptions, with tempered tips.

1. Class B. DIN 12690. With one mark. Without waiting time
2. Class AS. DIN 12691. Conformity certified. With one mark. Waiting time 15 s. Difficobrown
3. Class AS. DIN 12691. Conformity certified. With one mark. Waiting time 15 s. Difficoblue
4. Class B. With two marks. Without Waiting time
5. Class AS. With two marks. Waiting time 15 s
6. With security bulb

Capacity ml	1.	2.	3.	4.	5.	6.
0.5	3.530.005	3.535.005	3.535.005 BL	3.550.005	3.555.005	*.***.***K
1	3.530.010	3.535.010	3.535.010 BL	3.550.010	3.555.010	*.***.***K
2	3.530.020	3.535.020	3.535.020 BL	3.550.020	3.555.020	*.***.***K
3	3.530.030	3.535.030	3.535.030 BL	3.550.030	3.555.030	*.***.***K
4	—	3.535.040	3.535.040 BL	—	—	—
5	3.530.050	3.535.050	3.535.050 BL	3.550.050	3.555.050	*.***.***K
6	—	3.535.060	3.535.060 BL	—	—	—
7	—	3.535.070	3.535.070 BL	—	—	—
8	—	3.535.080	3.535.080 BL	—	—	—
9	—	3.535.090	3.535.090 BL	—	—	—
10	3.530.100	3.535.100	3.535.100 BL	3.550.100	3.555.100	*.***.***K
15	3.530.150	3.535.150	3.535.150 BL	3.550.150	3.555.150	*.***.***K
20	3.530.200	3.535.200	3.535.200 BL	3.550.200	3.555.200	*.***.***K
25	3.530.250	3.535.250	3.535.250 BL	3.550.250	3.555.250	*.***.***K
30	—	3.535.300	3.535.300 BL	—	—	—
40	—	3.535.400	3.535.400 BL	—	—	—
50	3.530.500	3.535.500	3.535.500 BL	3.550.500	3.555.500	*.***.***K
100	3.530.900	3.535.900	3.535.900 BL	3.550.900	3.555.900	*.***.***K

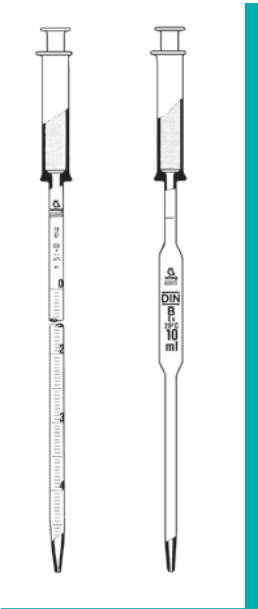
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Another advantage for your quality laboratory acc. to EN ISO 9000.

Pipettes, class DIN-B, with ISO-COLOR-Code, with interchangeable piston, with amber stain DIFFICO graduation and inscriptions, with tempered tips.

Capacity ml	
Graduated pipettes, short line graduation, complete delivery	
0.5	3.575.051
1	3.575.101
2	3.575.202
5	3.575.505
10	3.575.710
25	3.575.910
Volumetric pipettes, with ring mark	
1	3.577.010
2	3.577.020
5	3.577.050
10	3.577.100
20	3.577.200
25	3.577.250
50	3.577.500
100	3.577.900



Volumetric pipettes, PP, with ring mark, class B

Capacity ml	
1	7.031.011
2	7.031.012
5	7.031.015
10	7.031.100
25	7.031.001
50	7.031.002

Pipettes „blow out“. With ISO-COLOR-Code. With amber stain DIFFICO ring marks and inscriptions, with tempered tips offering a wear resistance which is up to seven times better than that of conventional pipette delivery tips. The specified waiting time of 3 s must not be realized. This waiting time is the period for the manipulation which is usually necessary. With „blow out“ inscription on each pipette. Calibrated to contain „Ex“.

Blow-out volumetric pipettes.

1. Class B. Without waiting time
2. Class AS. For officially testing. Waiting time 3 s

Capacity ml	1.	2.
0.5	3.571.005	3.572.005
1	3.571.010	3.572.010
2	3.571.020	3.572.020
3	3.571.030	3.572.030
5	3.571.050	3.572.050
10	3.571.100	3.572.100
15	3.571.150	3.572.150
20	3.571.200	3.572.200
25	3.571.250	3.572.250
50	3.571.500	3.572.500
100	3.571.900	3.572.900

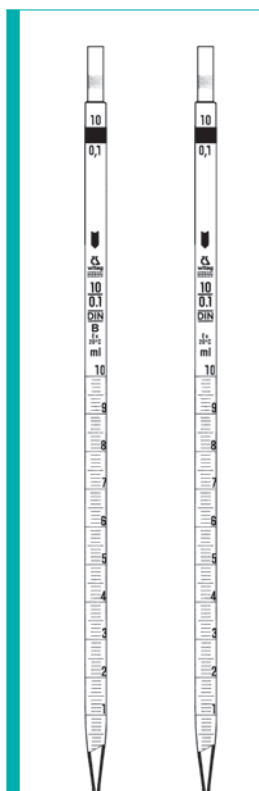
Blow-out graduated pipettes.

1. Class B. Short line graduation. Without waiting time
2. Class AS. For officially testing. Main point ring-graduation. Waiting time 3 s

Capacity ml	Division ml	Class B	Division ml	Class AS
0.1	0.001	3.569.011	0.001	3.570.011
0.2	0.001	3.569.021	0.001	3.570.021
0.2	0.002	3.569.022	—	—
0.3	—	—	0.002	3.570.022
0.5	0.010	3.569.051	0.010	3.570.051
1	0.010	3.569.101	0.010	3.570.101
1	0.100	3.569.110	0.100	3.570.110
2	0.010	3.569.201	0.010	3.570.201
2	0.020	3.569.202	0.002	3.570.202
2	0.100	3.569.210	0.100	3.570.210
5	0.050	3.569.505	0.050	3.570.505
5	0.100	3.569.510	0.100	3.570.510
10	0.100	3.569.710	0.100	3.570.710
20	0.100	3.569.810	0.100	3.570.810
25	0.100	3.569.910	0.100	3.570.910

Technical data graduated pipettes.

Capacity ml	Color- code	Division	Adjust. to	Tolerance \pm ml class B	class A	Delivery time s class B	class AS
0.1	2 x green	0.001	IN	0.003	0.003	—	—
0.2	2 x blue	0.001	IN	0.004	0.003	—	—
0.2	2 x white	0.002	IN	0.004	0.003	—	—
0.5	2 x yellow	0.010	EX	0.008	0.005	2-12	2-8
1	yellow	0.010	EX	0.010	0.007	2-12	2-8
1	red	0.100	EX	0.010	0.007	2-12	2-8
2	2 x white	0.010	EX	0.015	0.010	2-12	2-8
2	black	0.020	EX	0.015	0.010	2-12	2-8
2	green	0.100	EX	0.015	0.010	2-12	2-8
5	red	0.050	EX	0.040	0.030	5-15	5-11
5	blue	0.100	EX	0.040	0.030	5-15	5-11
10	orange	0.100	EX	0.080	0.050	5-15	5-11
20	2 x yellow	0.100	EX	0.150	0.100	9-20	9-15
25	white	0.100	EX	0.200	0.100	9-20	9-15
50	—	0.500	EX	0.400	0.200	—	—





Graduated pipettes. With ISO-COLOR-Code, acc. to DIN (ISO/R385), with amber stain DIFFICO graduations and inscriptions, better than class B accuracy. Tempered delivery tips offering a wear resistance which is up to seven times better than that of conventional pipette delivery tips. Sizes 5 ml and up with constriction in the suction tube to hold cotton plug.
Class B. With short line graduation, without waiting time.
Class AS. With main point ring-graduation, waiting time 3 s. Conformity certified.

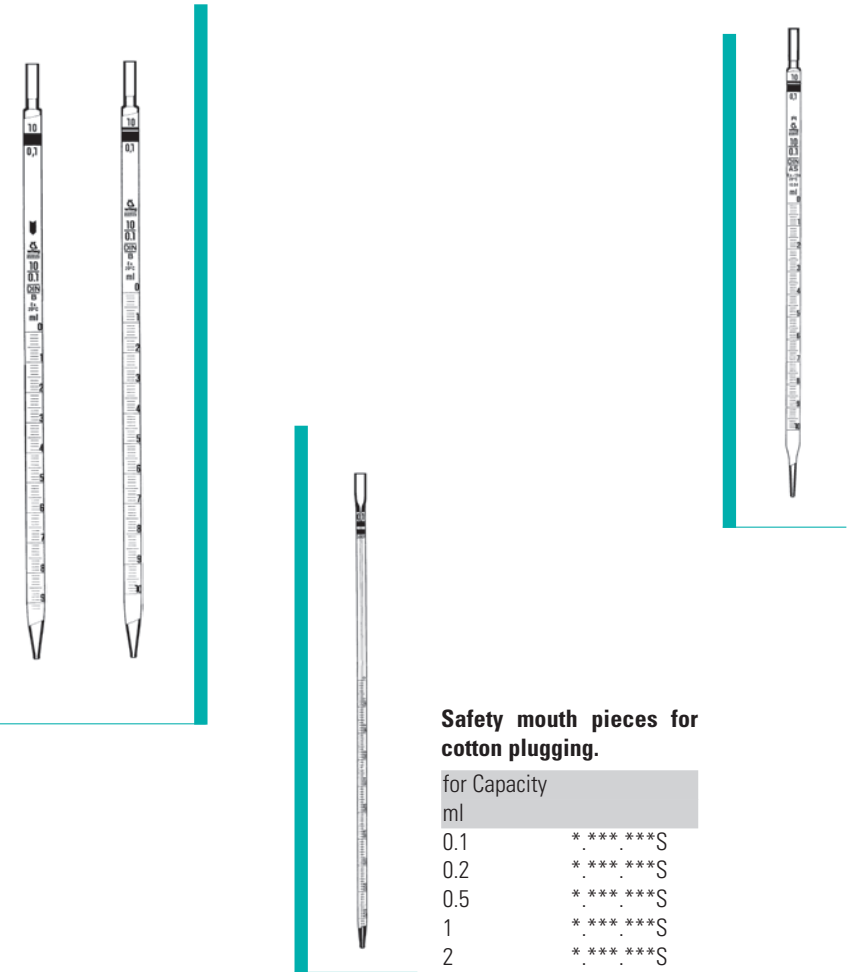


Graduated pipettes.

- 1. Class DIN-B. Complete swift delivery, 0-point top. DIN 12696. Diffico brown
- 2. Class DIN-B. Partial delivery, 0-point top. DIN 12695. Diffico brown
- 3. Class DIN-AS. Conformity certified, for complete swift delivery. DIN 12697. Diffico brown
- 4. Class DIN-AS. Conformity certified, for complete swift delivery. DIN 12697. Diffico blue
- 5. Class DIN-AS. Conformity certified for partial delivery. DIN 12695. Diffico brown
- 6. Class DIN-AS. Conformity certified with Schellbach strips, acc. to DIN 12697. Diffico brown

Capacity ml	Division ml	1.	2.	3.	4.	5.	6.
0.1	0.001	3.500.011	—	**3.510.011	3.510.011 BL	—	3.518.011
0.2	0.001	3.500.021	—	**3.510.021	3.510.021 BL	—	—
0.2	0.002	3.500.022	—	**3.510.022	3.510.022 BL	—	3.518.022
0.5	0.010	3.500.051	3.505.051	3.510.051	3.510.051 BL	3.515.051	3.518.051
1	0.010	3.500.101	3.505.101	3.510.101	3.510.101 BL	3.515.101	3.518.101
1	0.100	3.500.110	3.505.110	*3.510.110	3.510.110 BL	3.515.110	—
2	0.010	3.500.201	3.505.201	**3.510.201	3.510.201 BL	*3.515.201	—
2	0.020	3.500.202	3.505.202	3.510.202	3.510.202 BL	3.515.202	3.518.202
2	0.100	3.500.210	3.505.210	*3.510.210	3.510.210 BL	3.515.210	—
5	0.050	3.500.505	3.505.505	3.510.505	3.510.505 BL	3.515.505	3.518.505
5	0.100	3.500.510	3.505.510	*3.510.510	3.510.510 BL	3.515.510	—
10	0.100	3.500.710	3.505.710	3.510.710	3.510.710 BL	3.515.710	3.518.710
20	0.100	3.500.810	3.505.810	*3.510.810	3.510.810 BL	3.515.810	—
25	0.100	3.500.910	3.505.910	3.510.910	3.510.910 BL	3.515.910	—
25	0.200	3.500.950	—	3.510.950	3.510.950 BL	—	—

* in addition to DIN ** in addition to DIN, not conformity certified



Safety mouth pieces for cotton plugging.

for Capacity ml	
0.1	* * * * *
0.2	* * * * *
0.5	* * * * *
1	* * * * *
2	* * * * *

Pipettes for enzymatic analysis, class DIN-AS.

Conformity certified. Main point ring-graduation, for partial delivery, acc. to DIN 12699. Calibrated to contain „EX“. Technical data and COLOR-Code same as graduated pipettes, however one additional mark.

Capacity ml	Division ml	Diffico- brown	Diffico- blue
0.1	0.001	3.517.011	3.517.011 BL
0.2	0.001	3.517.021	3.517.021 BL
0.5	0.010	3.517.051	3.517.051 BL
1	0.010	3.517.101	3.517.101 BL
2	0.010	*3.517.201	3.517.201 BL
2	0.020	3.517.202	3.517.202 BL
5	0.050	3.517.505	3.517.505 BL
10	0.100	3.517.710	3.517.710 BL

* not conformity certified

To order products with individual certificates please add an „IC“ at the end of the respective cat. no., e.g. * * * * *IC. A batch certificate is included with any standard pack

ISO 9000. It is a must for the documentation of any control of inspection, measuring and test equipment. witeg Labortechnik GmbH prints on all class A/AS volumetric instruments a date-coded batch number for perfect product identification. **Another advantage for your quality laboratory acc. to EN ISO 9000.**

Disposable pipettes, glass. Accuracy is within $\pm 2\%$, with short jet or drawn tapered jet.

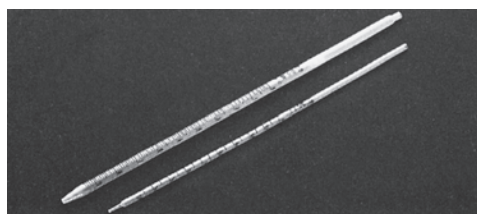
Capacity ml	Division ml	Jet- type	Standard- Pack	Non sterile	Sterile bulk-pack	Sterile *individual
1	0.010	short	500	9.910.001	9.911.010	9.912.100
1	0.100	long	500	9.910.002	9.911.020	9.912.200
1	0.010	long	500	9.910.003	9.911.030	9.912.300
1.1	—	long	500	9.910.004	9.911.040	9.912.400
2	0.020	short	500	9.910.005	9.911.050	9.912.500
2	0.020	long	500	9.910.006	9.911.060	9.912.600
5	0.050	long	500	9.910.007	9.911.070	9.912.700
10	0.100	long	250	9.910.008	9.911.080	9.912.800

* 50 % of standard pack

Graduated pipettes, PP.

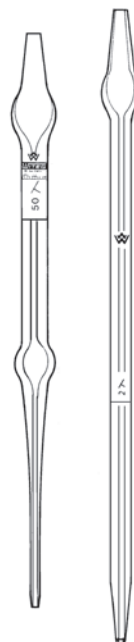
Transparent, graduated.

Capacity ml	Length mm	
1:0.1	350	7.030.001
2:0.1	350	7.030.002
5:0.1	400	7.030.003
10:0.1	400	7.030.004



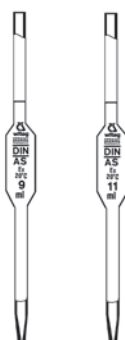
Micro lambda pipettes, transfer type. Suitable for certification, tolerances indicated on each pipette, individually packed in plastic tubes.

Capacity μ l	Tolerance $\pm \mu$ l	Color-Code	
1	0.04	blue	4.391.001
2	0.08	2 x red	4.391.002
5	0.20	white	4.391.005
10	0.20	orange	4.391.010
20	0.40	black	4.391.020
25	0.50	2 x white	4.391.025
50	0.50	green	4.391.050
100	1	blue	4.391.100
200	2	red	4.391.200
250	3	2 x green	4.391.250
300	3	yellow	4.391.300
400	3	—	4.391.400
500	3	2 x black	4.391.500
1000	3	blue	4.391.900



Volumetric pipettes for the determination of milk and cream, acc. to national standards, with amber stain DIFFICO graduations and inscriptions and marks, with tempered delivery tips. E = officially tested and stamped.

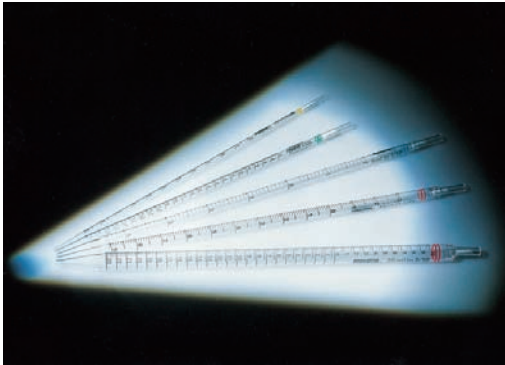
Capacity ml	National standard	
10.75	DIN 12837	3.420.075
10.75	DIN 12837 E	3.420.080
10.94	BS 696	3.420.094
11.00	BE	3.420.100
11.00	—	3.420.105
11.00	E	3.420.110
9.00	AST	3.420.090
17.60	AST	3.420.176
18.00	AST	3.420.180





Disposable pipettes, made of non cytotoxic crystal polystyrene. Gamma sterile. With cotton plug. Peel-pack bags for individual sterile pipettes. Graduation for 1, 2, 5 and 10 ml pipettes, with color-code.

Capacity ml	Division ml	Description	Carton pcs.	
1	0.01	individual packed	2000	5.489.101
		Bag of 25 pcs.	4000	5.489.102
		Bulk, non sterile	8000	5.489.103
2	0.01	individual packed	2000	5.489.111
		Bag of 25 pcs	4000	5.489.112
		Bulk, non sterile	4000	5.489.113
5	0.10	individual packed	500	5.489.121
		Bag of 25 pcs	1500	5.489.122
		Bulk, non sterile	1600	5.489.123
10	0.10	individual packed	500	5.489.131
		Bag of 25 pcs	1000	5.489.132
		Bulk, non sterile	1000	5.489.133
25	0.10	individual packed	400	5.489.141



Tissue culture pipettes, graduated pipettes, „shortie“ class DIN-AS.

Main point ring graduation. Blow-out. Zero at the tip. With amber stain DIFFICO graduations and inscriptions, with tempered tips offering a wear resistance, which is up to seven times better than that of convectional pipette delivery tips. Overall length 170 mm, with safety mouth piece for cotton plugging.

Capacity ml	Division ml	Tolerance ±ml	Color- code	
0.1	0.01	0.005	white	3.405.001
0.2	0.01	0.008	black	3.405.002
1	0.02	0.020	yellow	3.405.102
1	0.10	0.020	red	3.405.110
2	0.10	0.020	green	3.405.210
5	0.10	0.040	blue	3.405.510
10	0.20	0.060	orange	3.405.710



Bacteriological pipettes (milk pipettes), class DIN-AS. Main point ring-graduation, with amber stain DIFFICO graduations and inscriptions. Tempered extremely wide delivery tips offering a wear resistance.

Capacity ml	Marks at ml	Tolerance ±ml	Color- code	
1	1.0	0.025	blue	3.410.100
1.1	1.1-1.0	0.025	2xgreen	3.410.110
1.1	1.1-1.0-0.5	0.025	—	3.410.115
1.2	1.2-1.1-1.0-0.5	0.025	—	3.410.121
2.2	2.2-2.1-2.0-1.0	0.040	—	3.410.221
10	10	0.100	red	3.410.710
11	all	0.100	—	3.410.711



Kahn-pipettes, clear glass. For the antigen dilution. Tolerances indicated on each pipette.

Capacity	Division	Tolerance	Color-code	Type	
ml	ml	±ml			
0.1	0.001	0.003	2 x green	base	4.450.010
0.1	0.001	0.001	2 x green	tip	4.450.012
0.125	0.0125	0.003	—	base	4.450.015
0.25	0.0125	0.003	—	base	4.450.025
0.2	0.001	0.002	2 x blue	tip	4.450.030
0.6	0.15	0.005	—	tip	4.450.060



Demeter pipettes (milk pipettes - diluting pipettes), with constriction in the middle piece, with wide tempered delivery tips.

Capacity	Marks	
ml	at ml	
1.1	1.1-1.0-0.5	3.415.115
2.2	2.2-2.1-2.0-1.0	3.415.221



Folin-capillary pipettes calibrated for „In“, with 2 marks, acc. to DIN 12688, clear glass, for officially testing (class A).

Total capacity	Marks at	Tolerance	Color-code	
µl	µl	±µl		
100	50	1.0	2 x orange	4.350.100
200	100	2.0	orange	4.350.200



Disposable pipettes, with circular mark. Conformity certified. The suction side end is fire polished. Adjusted to contain. Rectification ≤ 0.25 %, precision 0.5 %. 250 pipettes per cardboard cylinder, 4 cylinders in a standard carton.

Capacity	Color-code	
ml		
1,2,3,4,5	white	*4.000.005
10	orange	4.000.010
20	black	4.000.020
25	2 x white	4.000.025
20+40	2xred	4.000.040
40	2xred	4.000.042
44,7	violet + blue	**4.000.044
44.7 hep.	violet + red	**4.000.047
5+50	green	4.000.050
10+50	green	4.000.051
50	green	4.000.052
100	blue	4.000.100
50+100	blue	4.000.150
200	red	4.000.200

* conformity certified for marks 5 µl

** supplementing to ISO

Capillary pipettes, calibrated for „In“. With graduation mark. Acc. to DIN 12687. Suitable for officially testing (class A).

Capacity	Tolerance	Color-code	Trade mark	Clear glass	Amber-glass
µl	±µl		acc. to		
20	0.4	black	Sahli	4.300.020	4.320.020
80	1.0	yellow	Geigy	4.300.080	4.320.080
100	1.0	blue	Geigy	4.300.100	4.320.100
200	2.0	red	Geigy	4.300.201	4.320.201

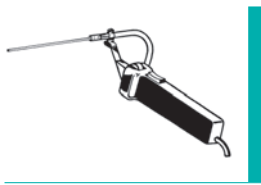
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ISO 9000. It is a must for the documentation of any control of inspection, measuring and test equipment. witeg Labortechnik GmbH prints on all class A/AS volumetric instruments a date-coded batch number for perfect product identification. **Another advantage for your quality laboratory acc. to EN ISO 9000.**



Micro pipetting aid. The pipette is filled by turning the rubber pulley with the thumb in the desired direction.

4.003.000

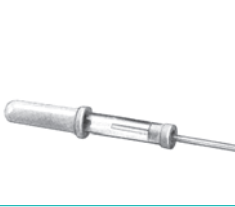


Disposable pipettes. End-to-end. With neatly cut ends. Conformity certified for volumes $\geq 5 \mu\text{l}$. Rectification $\leq \pm 0,25 \%$. 250 pipettes per cardboard cylinder, 4 cylinders in a standard carton. Each of these cylinders includes one short pipetting aid.

Capacity ml	
0.5	4.005.000
1	4.005.001
2	4.005.002
3	4.005.003
3.33	*4.005.033
4	4.005.004
5	4.005.005
6.66	*4.005.006
10	4.005.010
20	4.005.020
25	4.005.025
44.7	*4.005.044
44.7 hep.	*4.005.047
50	4.005.050
100	4.005.100

Spare parts:	
Pipetting aid, short type	4.007.001
Rubber stopper	4.007.003

*suitable for Coulter Analyzer.



Disposable pipettes acc. to Delbrück. Conformity certified. For capillary blood letting. Volume limitation by both ends. Heparinised. Rectification $\leq \pm 0.5 \%$, Precision $\leq \pm 1 \%$. Packed in cylinders of 100 pieces.

Capacity ml	
20 hep	4.004.020
40 hep	4.004.040
50 hep	4.004.060
Accessories:	
Pipette holder	4.004.050



Disposable-Prothrombin-pipettes, with circular marks, conformity certified. Upper end fire-polished. An additional white band indicates that the liquid remaining in the tip has to be blown out. We recommend to fill the pipettes by gravity - or increasing the angle of inclination of the pipette. Precision $< \pm 0.25 \%$. Packed: 250 pieces in cylinders, 4 cylinders in a standard carton.

Marks at ml	Tolerance $\pm \mu\text{l}$	Color- code	
0.1-0.2	2	orange	4.010.000



Disposable-Haematocrit tubes for blood taking, ungraduated. In compliance with international specifications, with Color-Code and fire polished ends. Length 75 mm \pm 0.002 mm, wall thickness 0.2 mm \pm 0.02 mm, internal diameter 1.1-1.2 mm. Capacity 75 μ l, ungraduated, outside diameter 1.4 mm \pm 0.1 mm. Designed for use in haematocrit centrifuges. Packed: 100 pcs. 10 tubes in standard box.

Capacity ml	Color- code	Heparinized	
75	red	hep.	4.015.010
75	blue	—	4.015.020
Accessories:			
Pipette holder			4.015.011



Suction bulbs for pipettes.

ml	
1	3.968.001
2	3.968.002
5	3.968.005
10	3.968.010
15	3.968.015

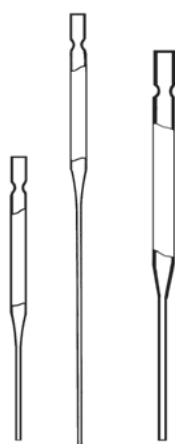
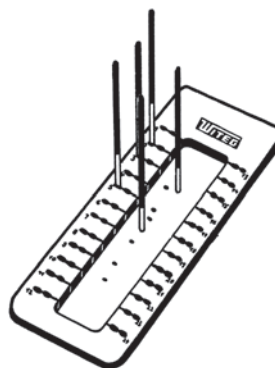


Disposable-Haematocrit tubes for blood taking, with circular mark at 60 mm, in compliance with international specifications. Ends fire-polished. Length 75 mm, with a precise inside diameter of 0.55 mm \pm 0.05 mm. Outside diameter 1.40-1.75 mm. The tube is filled to the calibration mark by capillary attraction. 100 pieces are packed in a transparent dispenser tube, 10 tubes in a standard box.

Heparinized	
Hep.	4.020.000
Accessories:	
Pipette holder	4.020.001

Haematocrit-sealing wax. Special sealing wax on a plate for rapid, reliable sealing of several hundred-micro-haematocrit tubes. It does not dry out and forms a sharply-defined separating line against the blood sample. On each side 2 tubes (up to a total of 48) can be vertically deposited in the numbered recesses. 6 pcs. in a standard box.

4.025.000



Pasteur pipettes, disposable. Capacity approx. 1.5 and 2 ml, with long tip. Capillary-inside diameter on the tip approx. 1 mm. Suction tube approx. 25 mm length. With mouth piece for cotton plugging, outside diameter of tube approx. 7 mm, body-length 90 mm, packed 250 pcs. in dispenser-box.

Type	Overall length/tip mm		With cotton plugging
short	150/50	4.100.150	4.100.151
long	230/120	4.100.230	4.100.231
long, thick walls	250/155	4.105.000	—



Disposable-Pasteur pipettes, graduated. PE. Unbreakable, 155 mm long.

Capacity	Standard pack	Carton	
ml	pcs.	pcs.	
0.5	500	3000	5.480.000
1	500	3000	5.480.001
3	500	3000	5.480.003



Disposable one-piece dropping pipettes (transfer pipettes).
No hazards from broken glass.

Capacity	Standard pack	Carton	
ml	pcs.	pcs.	
1.5	100	7000	5.484.001
4.0	100	3000	5.484.002

Dropping pipettes (eye droppers), made of glass.

Type	Dia. x L	
	mm	
Without bulb	7/8 x 80	9.900.801
With rubber teat	—	9.900.802
With bulb	7/8 x 80	9.900.803
With rubber teat	—	9.900.804



Pipette supports, hard-wood. Height adjustable, for volumetric and graduated pipettes, 2 decks, 185 mm dia., height of deck 50 mm.

For pipettes	
pcs.	
12	9.070.001
18	9.070.002
24	9.070.003



WITO-pipetting balls, approved for many years, problem-free use, for pipetting absolutely trouble-free. Fits all volumetric and graduated pipettes.

Standard and Universal with 3 valves. High chemical resistance. Easy to clean with standard cleansing agents such as WITO-NEX.

Flip with 2 pressure valves and 1 automatic valve for convenient handling. Inner surfaces can be cleaned easily by removing the automatic valve from the ball.

Type	
Short cone, Standard	3.965.000
Long cone , Universal	3.966.000
Flip	3.967.000

Pipette pumps „pi-pump“, PP. For pipettes up to 25 ml, with delivery valve-lever.

Capacity	Color-code	
ml		
0,2	yellow	7.032.001
2	blue	7.032.002
10	green	7.032.003
25	red	7.032.004
Stand for pi-pumps		7.032.111



Witoped-Pipet-Aid see section Liquid-Handling.

Pipette stand, PP. Holds up to 94 pipettes. The elastic material prevents pipette damage. Liquid residues drip form pipette to the slanted base plate.

7.081.001





Pipette sterilizing box, stretchable, aluminum. 280-420 mm length. 60 mm dia.. For pipettes with different lengths.

9.325.001

Pipette sterilizing boxes, 70x70mm, bottom and lid covered with silicone-rubber, made of non-corrosive metal.

Length mm	
170	9.326.001
270	9.326.002
380	9.326.003
450	9.326.004

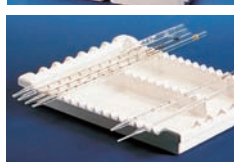


Sterilizing and storage boxes, aluminum. With overlapping cover for test tubes, centrifuge tubes, petri dishes, Pasteur pipettes, graduated pipettes, sterile instruments etc.

Height mm	Dia. mm	
270	140	9.328.001
170	170	9.328.002
175	120	9.328.003
120	120	9.328.004

Accessories:

Petri dish holder with handle for 10-12 petri dishes 80-120 mm dia., suitable for article no. 9.328.001	9.328.101
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Supports for pipettes, PVC.

Dimensions mm	Height mm	
For pipettes from 120 mm length		
220 x 300	38	7.097.001
Suitable for drawers, alongside subdivided in 4 shelves		
420 x 300	40	7.098.001
For drawers, alongside subdivided in 9 shelves, 25 mm wide		
355 x 300	45	7.099.001
Suitable for drawers with 5 places to keep		
410 x 300	70	7.101.001

Cleansing and storage system for pipettes, PE.

O.D. mm	Height mm	Basket-height mm	
Automatic pipette rinser			
165	650	—	7.034.001
165	1000	—	7.034.002
Pipette jars			
165	650	—	7.035.001
165	500	—	7.035.002
125	250	—	7.035.003
Pipette baskets			
130	650	300	7.036.001
130	495	300	7.036.002
Handle extension for pipette baskets			7.036.003



Pipettes rest (Instrument rest), for 12 instruments (pipettes), made of polished hardwood, with handle, height 300 mm.

Breadth mm	Length mm	
180	230	9.080.000



Pipette container, HDPE, for the dust-free storage of pipettes up to 400 mm length. With lid.

Base x height mm	I.D. mm	
100 x 420	83	7.635.004

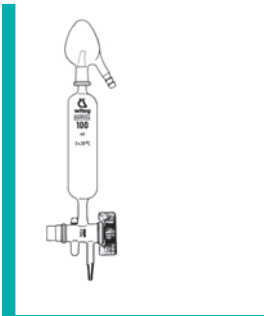


Automatic pipettes with 1 l reservoir bottle. With inscriptions.

- 1. Cone ST 29/32
- 2. Thread GL 45

**BEST
BUY**

Capacity ml	1. Complete	1. Attachment only	2. Complete	2. Attachment only
1	3.580.001	3.580.301	3.581.001	3.581.301
2	3.580.002	3.580.302	3.581.002	3.581.302
3	3.580.003	3.580.303	3.581.003	3.581.303
4	3.580.004	3.580.304	3.581.004	3.581.304
5	3.580.005	3.580.305	3.581.005	3.581.305
10	3.580.010	3.580.310	3.581.010	3.581.310
15	3.580.015	3.580.315	3.581.015	3.581.315
20	3.580.020	3.580.320	3.581.020	3.581.320
25	3.580.025	3.580.325	3.581.025	3.581.325
30	3.580.030	3.580.330	3.581.030	3.581.330
40	3.580.040	3.580.340	3.581.040	3.581.340
50	3.580.050	3.580.350	3.581.050	3.581.350
100	3.580.100	3.580.360	3.581.100	3.581.360
Spare reservoir bottle 1 l, ST 29/32	3.580.101	—	—	—
Spare bottle GL 45, with cap and seal	3.581.101	—	—	—

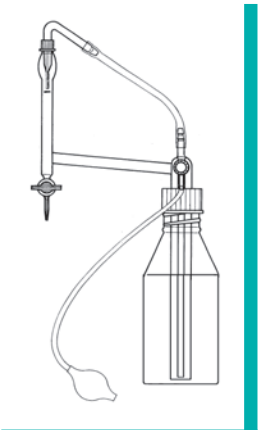


Automatic pipettes, Friedrichs. With automatic zero point.

Capacity ml	
5	3.585.005
10	3.585.010
25	3.585.025
50	3.585.050
100	3.585.100

Automatic volumetric pipettes (Dispenser burette). With automatic zero point, amber stain DIFFICO mark and inscriptions, 1 l reservoir bottle GL45, graduated, aspirator bulb, complete ready for use. With stopcock with ST glass plug, threaded detachable hose connection and changeable zero-tube for easier cleansing. (Other sizes on request).

Capacity ml	
3	3.590.003
5	3.590.005
10	3.590.010
15	3.590.015
20	3.590.020
25	3.590.025
30	3.590.030
40	3.590.040
50	3.590.050
100	3.590.100
125	3.590.125



Volumetric flasks, class DIN-B, Diffico brown.

1. Unstoppered neck suitable to take a stopper, but unground
2. With ST-PE-stoppers
3. With ST-hollow glass stoppers

Capacity ml	Tolerance ±ml	ST	1	2.	3.
5	0.060	10/19	3.652.015	3.654.015	3.658.015
10	0.060	10/19	3.652.012	3.654.012	3.658.012
20	0.060	10/19	3.652.002	3.654.002	3.658.002
25	0.060	10/19	3.652.003	3.654.003	3.658.003
50	0.090	12/21	3.652.005	3.654.005	3.658.005
50	0.090	14/23	3.652.006	3.654.006	3.658.006
100	0.150	12/21	3.652.010	3.654.010	3.658.010
100	0.150	14/23	3.652.011	3.654.011	3.658.011
200	0.250	14/23	3.652.020	3.654.020	3.658.020
250	0.250	14/23	3.652.025	3.654.025	3.658.025
500	0.400	19/26	3.652.050	3.654.050	3.658.050
1000	0.600	24/29	3.652.100	3.654.100	3.658.100
1000	0.600	29/32	3.652.101	3.654.101	3.658.101
2000	0.900	29/32	3.652.200	3.654.200	3.658.200
5000	1.800	34/35	3.652.500	3.654.500	3.658.500

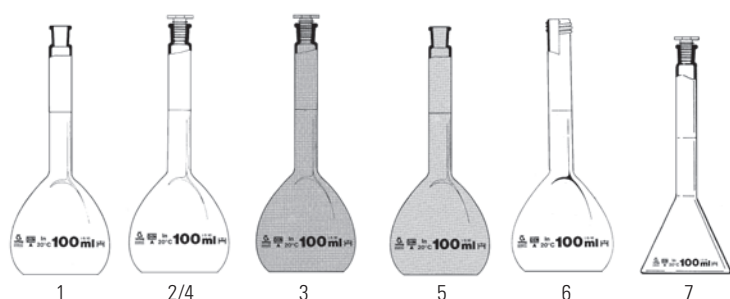

Volumetric flasks, class DIN-A. Conformity certified. DIN 12664 (ISO 1042). DURAN. With acid and alkali resistant ring marks and inscriptions, DIFFICO amber stain graduation. Other sizes on request.

1. Unstoppered neck, suitable to take a stopper, Diffico brown
2. With ST-PE-stoppers, Diffico brown
3. With ST-PE-stoppers, Diffico blue
4. With ST-hollow glass stoppers, Diffico brown
5. With ST-hollow glass stoppers, amber glass, Diffico white
6. With GL-screw caps and PTFE-washer, Diffico brown
7. With ST-PE-stoppers. trapezoidal, Diffico blue
8. With spout and PE-stoppers, Diffico blue

To order products with individual certificates please add an „IC“ at the end of the respective cat. no., e.g. *.***.***IC.
A batch certificate is included with any standard pack



Capacity ml	Tolerance ±ml	ST	1.	2.	3.	4.	5.	6.	7.	8.
1	0.025	7/16	—	—	—	—	—	—	3.669.000	—
2	0.025	7/16	—	—	—	—	—	—	3.669.001	—
3	0.025	7/16	—	—	—	—	—	—	3.669.002	—
5	0.025	7/16	3.662.000	3.664.000	3.664.000BL	3.668.000	3.670.000	3.642.000	3.669.003	—
5W	0.040	10/19	—	3.664.015	3.664.015BL	3.668.015	3.670.015	3.642.015	3.669.015	3.664.015A
10	0.025	7/16	3.662.001	3.664.001	3.664.001BL	3.668.001	3.670.001	3.642.001	3.669.005	—
10W	0.040	10/19	—	3.664.012	3.664.012BL	3.668.012	3.670.012	3.642.012	3.669.010	3.664.012A
20	0.040	10/19	3.662.002	3.664.002	3.664.002BL	3.668.002	3.670.002	3.642.002	3.669.020	3.664.002A
25	0.040	10/19	3.662.003	3.664.003	3.664.003BL	3.668.003	3.670.003	3.642.003	3.669.025	3.664.003A
25W	0.060	12/21	—	3.664.014	3.664.014BL	3.668.014	3.670.014	3.642.014	3.669.014	3.664.014A
50	0.060	12/21	3.662.005	3.664.005	3.664.005BL	3.668.005	3.670.005	3.642.005	3.669.050	3.664.005A
50	0.100	14/23	3.662.006	3.664.006	3.664.006BL	3.668.006	—	—	3.669.100	3.664.006A
100	0.100	12/21	3.662.010	3.664.010	3.664.010BL	3.668.010	3.670.010	3.642.010	3.669.200	3.664.010A
100	0.100	14/23	3.662.011	3.664.011	3.664.011BL	3.668.011	—	—	3.669.500	3.664.011A
200	0.150	14/23	3.662.020	3.664.020	3.664.020BL	3.668.020	3.670.020	3.642.020	—	3.664.020A
250	0.150	14/23	3.662.025	3.664.025	3.664.025BL	3.668.025	3.670.025	3.642.025	—	3.664.025A
500	0.250	19/26	3.662.050	3.664.050	3.664.050BL	3.668.050	3.670.050	3.642.050	—	3.664.050A
1000	0.600	24/29	3.662.100	3.664.100	3.664.100BL	3.668.100	3.670.100	3.642.100	—	3.664.100A
1000	0.400	29/32	3.662.101	3.664.101	3.664.101BL	3.668.101	—	—	—	3.664.101A
2000	0.600	29/32	3.662.200	3.664.200	3.664.200BL	3.668.200	3.670.200	3.642.200	—	3.664.200A
5000	1.200	34/35	3.662.500	3.664.500	3.664.500BL	—	3.668.500	3.642.500	—	3.664.500A





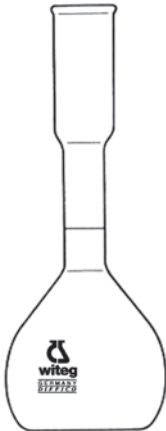
Volumetric flasks made of plastics. Narrow neck, with ringmark and ST-stopper.

Capacity ml	Height mm	ST- stopper	PP	PMP
25	125	12	7.021.001	—
50	150	14	7.021.002	7.022.001
100	180	14	7.021.003	7.022.002
250	235	19	7.021.004	7.022.003
500	270	19	7.021.005	7.022.004
1000	330	19	7.021.006	7.022.005



Volumetric flasks, acc. to Kohlrausch, for sugar analysis. Blue graduation. DURAN.

Capacity ml	
100	3.671.100
200	3.671.200

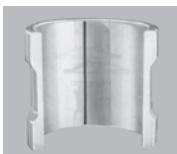
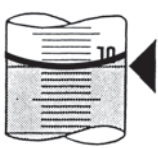
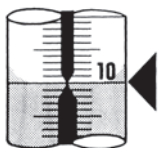
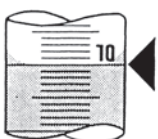
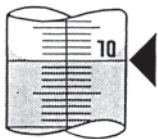


Viscosimeter flask, acc. to Engler. DURAN. 2 ring-marks, Capacity 100+100 ml ± 0.1 ml. Diffico blue

3.671.201

Volumetric flasks for sugar analysis. With 2 marks. DURAN.

Capacity ml	
50/55	3.672.050
100/110	3.672.100
200/220	3.672.200



Clip - the reading aid, PP, white. With grip deepening, unbreakable, with permanent clamping effect, resistant to acids and alkalis. For better recognizing and adjusting the liquid level into graduations and ring marks, packed 10 pcs. in plastic bags in a carton. Clip height 36 mm. Schellbach-Clip, white with blue line. For all measuring instruments made of glass. Contrast-Clip, black and white.

Clip dia. mm	For tube dia. from-to mm	Schellbach- clip	Contrast clip	Assortment
4.0	4.2-5.5	3.690.001	3.691.001	
6.0	6.1-7.5	3.690.002	3.691.002	
9.8	10.0-13.3	3.690.003	3.691.003	
13.5	13.8-17.0	3.690.004	3.691.004	
18.4	18.5-22.0	3.690.005	3.691.005	
24.8	25.0-29.5	3.690.006	3.691.006	
32.5	33.0-42.0	3.690.007	3.691.007	
„Medico Clip“, white				3.692.000
„Schellbach blue line“				3.693.000
„Contrast Clip“, black-white				3.694.000

Graduated cylinders, tall form, class DIN-B. Short line graduation, acc. to DIN 12680, „In“. With acid and alkali resistant DIFFICO amber stain graduation and inscriptions. Better than class B accuracy, within the tolerances for officially tested graduated cylinders.

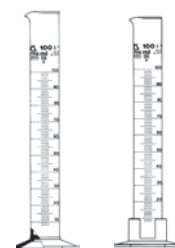
1. With hexagonal base. DURAN

2. With base and protection collar made of PP. Borosilicate glass

2a. Spare hexagonal base, made of PP

2b. Spare protection collar, made of PP

Capacity	Division	Tolerance	1.	2.	2a.	2b.
ml	ml	±ml				
5	0.1	0.08	3.705.000	3.700.000	3.701.000	3.702.000
10	0.2	0.15	3.705.001	3.700.001	3.701.001	3.702.001
25	0.5	0.40	3.705.003	3.700.003	3.701.003	3.702.003
50	1.0	1.00	3.705.005	3.700.005	3.701.005	3.702.005
100	1.0	1.00	3.705.010	3.700.010	3.701.010	3.702.010
250	2.0	1.50	3.705.025	3.700.025	3.701.025	3.702.025
500	5.0	4.00	3.705.050	3.700.050	3.701.050	3.702.050
1000	10.0	8.00	3.705.100	3.700.100	3.701.100	3.702.100
2000	20.0	15.00	3.705.200	—	—	—



Class DIN AS, conformity certified see next side

Graduated cylinders (Graduates), low shape, class DIN-B.

Short line graduation, „In“. With acid and alkali resistant DIFFICO amber stain graduation and inscriptions. With round base and spout. With hexagonal base. Borosilicate glass.

Capacity	Division	Tolerance	
ml	ml	±ml	
5	1.0	0.10	3.707.000
10	1.0	0.15	3.707.001
25	1.0	0.40	3.707.003
50	2.0	0.80	3.707.005
100	2.0	0.80	3.707.010
250	5.0	1.50	3.707.025
500	10.0	4.00	3.707.050
1000	20.0	8.00	3.707.100
2000	50.0	15.00	3.707.200



Graduated cylinders, low shape. From plastic.

1. PP. Transparent, prominent graduation

2. PMP. Crystal clear, prominent graduation

Capacity	Height	O.D.	1.	2.
ml	mm	mm		
10	87	16	7.006.000	7.007.100
25	107	22	7.006.001	7.007.101
50	143	29	7.006.002	7.007.102
100	177	34	7.006.003	7.007.103
250	263	46	7.006.004	7.007.104
500	302	56	7.006.005	7.007.105
1000	331	71	7.006.006	7.007.106
2000	370	92	7.006.007	7.007.107





Graduated cylinders, tall form, class DIN-AS. Conformity certified. Main point ring-graduation. With hexagonal base and spout. DIN 12680. „IN“. With acid and alkali resistant DIFFICO amber stain graduation and inscriptions.

Capacity ml	Division ml	Tolerance ±ml	DURAN Diffico brown	DURAN Diffico blue
5	0.1	0.05	3.715.000	3.715.000 BL
10	0.2	0.10	3.715.001	3.715.001 BL
25	0.5	0.25	3.715.003	3.715.003 BL
50	1.0	0.50	3.715.005	3.715.005 BL
100	1.0	0.50	3.715.010	3.715.010 BL
250	2.0	1.00	3.715.025	3.715.025 BL
500	5.0	2.50	3.715.050	3.715.050 BL
1000	10.0	5.00	3.715.100	3.715.100 BL
2000	20.0	10.00	3.715.200	3.715.200 BL



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A batch certificate is included with any standard pack

ISO 9000. It is a must for the documentation of any control of inspection, measuring and test equipment. witeg Labortechnik GmbH prints on all class A/AS volumetric instruments a date-coded batch number for perfect product identification.

Another advantage for your quality laboratory acc. to EN ISO 9000.



Graduated cylinders, tall shape. From plastic, ISO 6706, BS 5404.

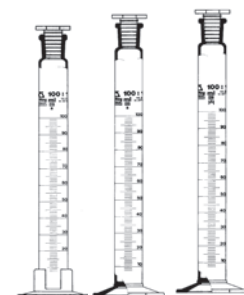
1. PP. Transparent, prominent graduated
2. PMP. Crystal clear, prominent graduated
3. PP. Transparent, blue graduated
4. PMP. Crystal clear, blue graduated

Capacity ml	Height mm	O.D. mm	1.	2.	3.	4.
10:0.2	140	13	7.000.001	7.002.001	7.003.001	7.004.001
25:0.5	195	18	7.000.002	7.002.002	7.003.002	7.004.002
50:1	200	25	7.000.003	7.002.003	7.003.003	7.004.003
100:1	250	30	7.000.004	7.002.004	7.003.004	7.004.004
250:2	315	41	7.000.005	7.002.005	7.003.005	7.004.005
500:5	331	55	7.000.006	7.002.006	7.003.006	7.004.006
1000:10	439	66	7.000.007	7.002.007	7.005.007	7.004.007
2000:20	531	84	7.000.008	7.002.008	7.005.008	7.004.008

Graduated cylinders, with ST-PE-stopper. DIN 12685. Borosilicat glass. With acid and alkali resistand DIFFICO amber stain gra-
duation and inscriptions, which form an integral, absolutely indelible part of the glass surface „IN“. With hexagonal base.

1. Class DIN-B. Short line graduation. Base from PP. Diffico brown
2. Class DIN-B. Short line graduation. Diffico brown
3. Class DIN-AS. Conformity certified, main point ring-graduation. Diffico brown
4. Class DIN-AS. Conformity certified, main point ring-graduation. Diffico blue

Capacity	Division	Class B/AS Tolerance	ST	1.	2.	3.	4.
ml	ml	±ml					
10	0.2	0.15/0.10	10/19	3.750.001	3.752.001	3.754.001	3.754.001BL
25	0.5	0.40/0.25	14/23	3.750.003	3.752.003	3.754.003	3.754.003BL
50	1.0	0.80/0.50	19/26	3.750.005	3.752.005	3.754.005	3.754.005BL
100	1.0	0.80/0.50	24/29	3.750.010	3.752.010	3.754.010	3.754.010BL
250	2.0	1.50/1.00	29/32	3.750.025	3.752.025	3.754.025	3.754.025BL
500	5.0	4.00/2.50	34/35	3.750.050	3.752.050	3.754.050	3.754.050BL
1000	10.0	8.00/5.00	45/40	3.750.100	3.752.100	3.754.100	3.754.100BL
2000	20.0	15.00/10.00	45/40	3.750.200	3.752.200	3.754.200	3.754.200BL

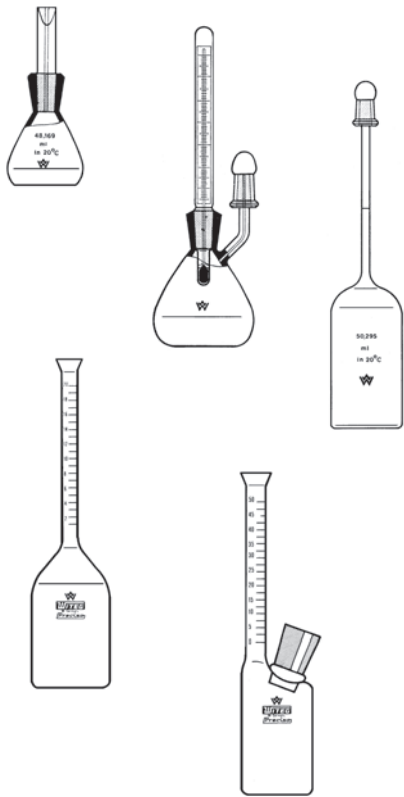


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A batch certificate is included with any standard pack

Measures. Conical shape, with round base, with spout, without handle, with acid and alkali resistant DIFFICO amber stain graduation, class DIN B-short line graduation. Borosilicate glass, or plastic with prominent graduation.

Capacity	Division	Division	Borosilicate-	PP	PMP
ml	plastic	glass	glass		
ml	ml	ml			
25	—	1	4.800.025	—	—
50	—	2	4.800.050	—	—
100	2	5	4.800.100	7.027.001	7.028.001
250	5	10	4.800.250	7.027.002	7.028.002
500	10	10	4.800.500	7.027.003	7.028.003
1000	20	20	4.800.001	7.027.004	7.028.004



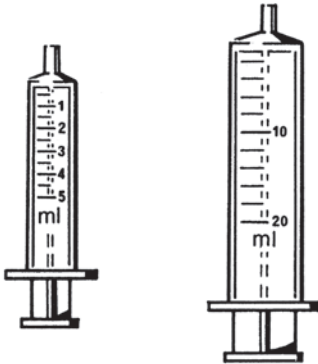


Pyknometers. Unadjusted with capacity mark indication at the bottom weighed out up to the 2. decimal place.

Capacity ml	Tolerance ±ml	Thermo- meter °C	Division °C	Unadjusted	Adjusted
Acc. to Gay-Lussac, with ground-in capillary stopper. DIN 12797*					
1	0.006	—	—	3.900.001	3.902.001
2	0.006	—	—	3.900.002	3.902.002
5	0.006	—	—	3.900.005	3.902.005
*10	0.008	—	—	3.900.010	3.902.010
*25	0.010	—	—	3.900.025	3.902.025
*50	0.016	—	—	3.900.050	3.902.050
100	0.024	—	—	3.900.100	3.902.100
With thermometer ST 10/19 and side tube ST 7/16 cap. DIN 12809*					
5	0.006	0-35	0.2	3.920.005	3.922.005
*10	0.008	0-35	0.2	3.920.010	3.922.010
*25	0.010	0-35	0.2	3.920.025	3.922.025
*50	0.016	0-35	0.2	3.920.050	3.922.050
100	0.024	0-35	0.2	3.920.100	3.922.100
Acc. to Reischauer, with cap ST 5/13, DIN 12801*					
5	0.006	—	—	—	3.930.005
10	0.008	—	—	—	3.930.010
*25	0.010	—	—	—	3.930.025
*50	0.016	—	—	—	3.930.050
100	0.024	—	—	—	3.930.100
For dairy products					
20	Cheese, Ice cream	0.2	—	3.935.001	—
50	Cheese	0.5	—	3.935.002	—
20	Ice cream	0.2	—	3.935.003	—
8	Milk	0.1	—	3.935.004	—
10	Milk	0.1	—	3.935.005	—
50	Cream	0.5	—	3.935.006	—

Sterile disposable syringes, single packed, without needle, pyrogenfree. Other sizes on request.

Capacity ml	Bag pcs.	Carton pcs.	
LUER/3-component, insulin/tuberkulin			
1	500	1000	5.484.100
LUER/2-component			
2	200	3000	5.484.202
5	150	1800	5.484.205
10	100	1200	5.484.210
20	80	960	5.484.220



Sterile disposable needles (LUER), Pravaz-sizes.

Color- code		Pravaz- sizes	Bag pcs.	Carton pcs.	
Yellow	Nr. 1.	20G 1 1/2" 0.9 x 40 mm	100	1000	5.484.301
Green	Nr. 2.	21G 1 1/2" 0.8 x 40 mm	100	1000	5.484.302
Black	Nr. 12.	22G 1 1/4" 0.7 x 30 mm	100	1000	5.484.303
Blue	Nr. 14.	23G 1 1/4" 0.6 x 30 mm	100	1000	5.484.304
Blue	Nr. 16.	23G 1" 0.6 x 25 mm	100	1000	5.484.305
Orange	Nr. 18.	25G 1" 0.5 x 25 mm	100	1000	5.384.306
Grey	Nr. 20.	27G 3/4" 0.4 x 19 mm	100	1000	5.484.307

Precision density hydrometers.

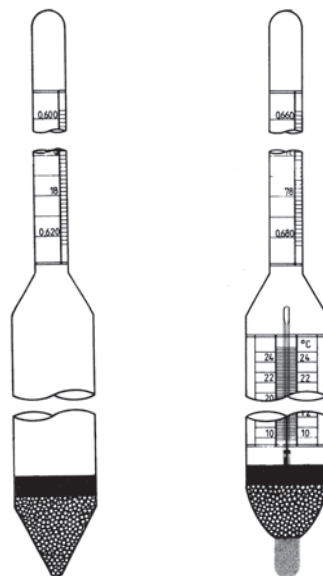
Range 0.20 g/ml in 0.0002 g/ml. Total length 430 mm.

Please specify surface tension. Colour code to DIN 12790 and ISO R649 = yellow / red / blue for low / medium / high surface tension.

1. DIN 12791, Tp. 20 °C, **Series L20**, without thermometer

2. DIN 12785, **Series L20 Th**, with thermometer +10 +25 °C

Range g/cm ³	Type L	Type L Th
0.600-0.620	8.585.001	8.586.001
0.620-0.640	8.585.002	8.586.002
0.640-0.660	8.585.003	8.586.003
0.660-0.680	8.585.004	8.586.004
0.680-0.700	8.585.005	8.586.005
0.700-0.720	8.585.006	8.586.006
0.720-0.740	8.585.007	8.586.007
0.740-0.760	8.585.008	8.586.008
0.760-0.780	8.585.009	8.586.009
0.780-0.800	8.585.010	8.586.010
0.800-0.820	8.585.011	8.586.011
0.820-0.840	8.585.012	8.586.012
0.840-0.860	8.585.013	8.586.013
0.860-0.880	8.585.014	8.586.014
0.880-0.900	8.585.015	8.586.015
0.900-0.920	8.585.016	8.586.016
0.920-0.940	8.585.017	8.586.017
0.940-0.960	8.585.018	8.586.018
0.960-0.980	8.585.019	8.586.019
0.980-1.000	8.585.020	8.586.020
1.000-1.020	8.585.021	8.586.021
1.020-1.040	8.585.022	8.586.022
1.040-1.060	8.585.023	8.586.023
1.060-1.080	8.585.024	8.586.024
1.080-1.100	8.585.025	8.586.025
1.100-1.120	8.585.026	8.586.026
1.120-1.140	8.585.027	8.586.027
1.140-1.160	8.585.028	8.586.028
1.160-1.180	8.585.029	8.586.029
1.180-1.200	8.585.030	8.586.030
1.200-1.220	8.585.031	8.586.031
1.220-1.240	8.585.032	8.586.032
1.240-1.260	8.585.033	8.586.033
1.260-1.280	8.585.034	8.586.034
1.280-1.300	8.585.035	8.586.035



Density hydrometers. DIN 12791. For officially testing. Series M50. Without thermometer. Surface-tension-categories: 0.600-1.000 (15-35 dyn/cm = mN/m) low = L = yellow COLOR-Code, 1.000-2.000 (75 dyn/cm = mN/m) high = H = blue Color-Code. TP 20 °C. With lead ballast.

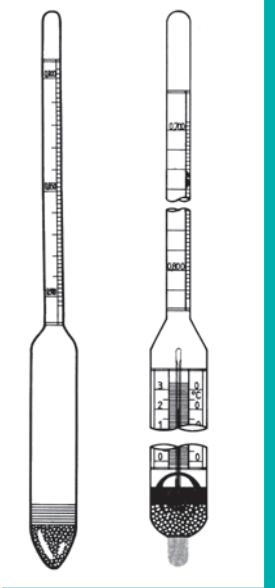
DIN-No.	Range g/cm ³	
M50-060	0.600-0.650	8.556.001
M50-065	0.650-0.700	8.556.002
M50-070	0.700-0.750	8.556.003
M50-075	0.750-0.800	8.556.004
M50-080	0.800-0.850	8.556.005
M50-085	0.850-0.900	8.556.006
M50-090	0.900-0.950	8.556.007
M50-095	0.950-1.000	8.556.008
M50-100	1.000-1.050	8.556.009
M50-105	1.050-1.100	8.556.010
M50-110	1.100-1.150	8.556.011
M50-115	1.150-1.200	8.556.012
M50-120	1.200-1.250	8.556.013
M50-125	1.250-1.300	8.556.014
M50-130	1.300-1.350	8.556.015
M50-135	1.350-1.400	8.556.016
M50-140	1.400-1.450	8.556.017
M50-145	1.450-1.500	8.556.018
M50-150	1.500-1.550	8.556.019
M50-155	1.550-1.600	8.556.020
M50-160	1.600-1.650	8.556.021
M50-165	1.650-1.700	8.556.022
M50-170	1.700-1.750	8.556.023
M50-175	1.750-1.800	8.556.024
M50-180	1.800-1.850	8.556.025
M50-185	1.850-1.900	8.556.026
M50-190	1.900-1.950	8.556.027
M50-195	1.950-2.000	8.556.028
Set of 14 hydrometers from 0.600-1.300		8.556.100
Set of 14 hydrometers from 1.300-2.000		8.556.200



Density hydrometers. DIN 12791. For officially testing. Series M100. Surface-tension-categories: 0.600-1.000 (15-35 dyn/cm = mN/m) low = L = yellow Color-Code, 1.000-2.000 (75 dyn/cm = mN/m) high = H = blue Color-Code. TP 20 °C. With lead ballast.
Division 0.002 g/cm³, division 90 mm, length 240 mm.

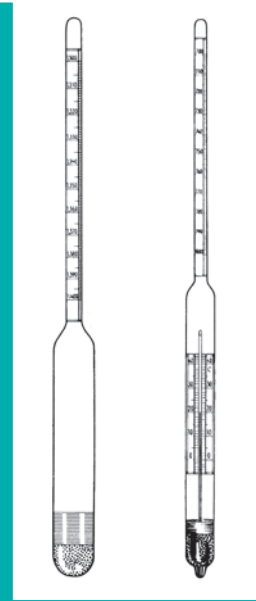
Type M100 without thermometer
Type M100Th with thermometer

DIN-No.	Range g/cm ³	Type M100	Type M100Th
M100-060	0.600-0.700	8.557.001	8.558.001
M100-070	0.700-0.800	8.557.002	8.558.002
M100-080	0.800-0.900	8.557.003	8.558.003
M100-090	0.900-1.000	8.557.004	8.558.004
M100-100	1.000-1.100	8.557.005	8.558.005
M100-110	1.100-1.200	8.557.006	8.558.006
M100-120	1.200-1.300	8.557.007	8.558.007
M100-130	1.300-1.400	8.557.008	8.558.008
M100-140	1.400-1.500	8.557.009	8.558.009
M100-150	1.500-1.600	8.557.010	8.558.010
M100-160	1.600-1.700	8.557.011	8.558.011
M100-170	1.700-1.800	8.557.012	8.558.012
M100-180	1.800-1.900	8.557.013	8.558.013
M100-190	1.900-2.000	8.557.014	8.558.014
Complete set of 14 hydrometers packed in velvet-lined case		8.857.200	8.558.200



Density hydrometers. 100 °C range. For light and heavy liquids, TP. 20 °C, commercial quality, with lead ballast. (Densimeter). DIN 12791. Division 0.001 g/cm³.
1. Without thermometer. Length 250 mm
2. With thermometer. Length 300 mm

Range g/cm ³	Without thermo- meter	With thermo- meter
0.600-0.700	8.559.001	8.560.001
0.700-0.800	8.559.002	8.560.002
0.800-0.900	8.559.003	8.560.003
0.900-1.000	8.559.004	8.560.004
1.000-1.100	8.559.005	8.560.005
1.100-1.200	8.559.006	8.560.006
1.200-1.300	8.559.007	8.560.007
1.300-1.400	8.559.008	8.560.008
1.400-1.500	8.559.009	8.560.009
1.500-1.600	8.559.010	8.560.010
1.600-1.700	8.559.011	8.560.011
1.700-1.800	8.559.012	8.560.012
1.800-1.900	8.559.013	8.560.013
1.900-2.000	8.559.014	8.560.014
Complete set of 14 hydrometers	8.559.100	—
Complete set of 14 hydrometers	8.559.200	8.560.200
Suchspindel, 0.700-2.000, 160 mm	8.559.300	—



Hydrometer cylinder (PP) 500 ml, with overflow vessel with octagonal base and spout I.D. x heigh 50 x 350 mm.
7.005.001

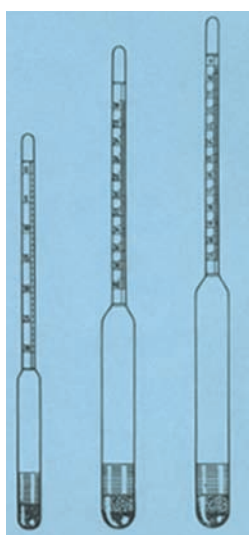
Density hydrometers. 60 °C range. For small quantities of liquids, for light and heavy liquids specific gravity. TP. 20 °C, commercial quality, with lead ballast. Desimeter. Division 0.001 g/cm³, division 50 mm, length 160 mm.

Range g/cm ³	
0.600-0.660	8.561.001
0.660-0.710	8.561.002
0.710-0.760	8.561.003
0.760-0.820	8.561.004
0.820-0.880	8.561.005
0.880-0.940	8.561.006
0.940-1.000	8.561.007
1.000-1.060	8.561.008
1.060-1.120	8.561.009
1.120-1.180	8.561.010
1.180-1.240	8.561.011
1.240-1.300	8.561.012
1.300-1.360	8.561.013
1.360-1.420	8.561.014
1.420-1.480	8.561.015
1.480-1.540	8.561.016
1.540-1.600	8.561.017
1.600-1.660	8.561.018
1.660-1.720	8.561.019
1.720-1.780	8.561.020
1.780-1.840	8.561.021
1.840-1.900	8.561.022
1.900-1.960	8.561.023
1.960-2.020	8.561.024
Thermo-range-finder	8.561.100
Complete set of 24 Hydrometer, with thermo-range-finder, packed in velvet-lined case.	8.561.200



Density hydrometers. Various ranges, for light and heavy liquids specific gravity. TP. 20 °C, commercial quality, with lead ballast.

Range	Division	Nominal range	Length	
g/cm ³	g/cm ³	mm	mm	
0.700-1.000	0.005	110	270	8.564.001
1.000-1.300	0.005	160	300	8.564.002
1.000-1.500	0.005	140	300	8.564.003
1.500-2.000	0.005	140	300	8.564.004
1.000-2.000	0.010	160	300	8.564.005
0.700-2.000	0.01/0.02	150	400	8.564.006



Sugar hydrometers. Saccharimeter acc. to Brix (1 Brix = 1% sugar solution).

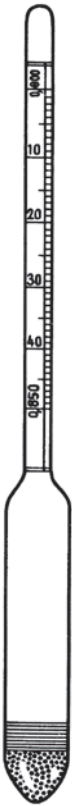
- Without thermometer 200-250 mm long
- With thermometer 300 mm long

Range Brix	1.	2.
0-10	8.565.101	8.565.111
0-30	8.565.102	—
10-20	—	8.565.113
20-30	—	8.565.114
30-40	—	8.565.115
30-60	8.565.106	—
40-50	—	8.565.117
50-60	—	8.565.118
60-70	—	8.565.119
60-90	8.565.110	—
70-80	—	8.565.121
80-90	—	8.565.122



Specific gravity hydrometers, acc. to ASTM E 100. For officially testing, for petroleum and other liquids with similar surface-tension, TP. 60/60 °F, with lead ballast.

ASTM	Scale	Division	Nominal scale	Length	
No.	sp. gr.	sp. gr.	mm	mm	
82H	0.650-0.700	0.0005	135	300	8.570.001
83H	0.700-0.750	0.0005	135	300	8.570.002
84H	0.750-0.800	0.0005	135	300	8.570.003
85H	0.800-0.850	0.0005	135	300	8.570.004
86H	0.850-0.900	0.0005	135	300	8.570.005
87H	0.900-0.950	0.0005	135	300	8.570.006
88H	0.950-1.000	0.0005	135	300	8.570.007
89H	1.000-1.050	0.0005	135	300	8.570.008
90H	1.050-1.100	0.0005	135	300	8.570.009
102H	0.650-0.700	0.0010	80	260	8.570.010
103H	0.700-0.750	0.0010	80	260	8.570.011
104H	0.750-0.800	0.0010	80	260	8.570.012
105H	0.800-0.850	0.0010	80	260	8.570.013
106H	0.850-0.900	0.0010	80	260	8.570.014
107H	0.900-0.950	0.0010	80	260	8.570.015
108H	0.950-1.000	0.0010	80	260	8.570.016
111H	1.000-1.050	0.0005	135	300	8.570.017
112H	1.050-1.100	0.0005	135	300	8.570.018
113H	1.100-1.150	0.0005	135	300	8.570.019
114H	1.150-1.200	0.0005	135	300	8.570.020
115H	1.200-1.250	0.0005	135	300	8.570.021
116H	1.250-1.300	0.0005	135	300	8.570.022
117H	1.300-1.350	0.0005	135	300	8.570.023
118H	1.350-1.400	0.0005	135	300	8.570.024
119H	1.400-1.450	0.0005	135	300	8.570.025
120H	1.450-1.500	0.0005	135	300	8.570.026
125H	1.000-1.050	0.0010	80	260	8.570.027
126H	1.050-1.100	0.0010	80	260	8.570.028
127H	1.100-1.150	0.0010	80	260	8.570.029
128H	1.150-1.200	0.0010	80	260	8.570.030
129H	1.200-1.250	0.0010	80	260	8.570.031
130H	1.250-1.300	0.0010	80	260	8.570.032
131H	1.300-1.350	0.0010	80	260	8.570.033
132H	1.350-1.400	0.0010	80	260	8.570.034
133H	1.400-1.450	0.0010	80	260	8.570.035
134H	1.450-1.500	0.0010	80	260	8.570.036
135H	1.500-1.550	0.0010	80	260	8.570.037
136H	1.550-1.600	0.0010	80	260	8.570.038
137H	1.600-1.650	0.0010	80	260	8.570.039
138H	1.650-1.700	0.0010	80	260	8.570.040
139H	1.700-1.750	0.0010	80	260	8.570.041
140H	1.750-1.800	0.0010	80	260	8.570.042
141H	1.800-1.850	0.0010	80	260	8.570.043



API gravity hydrometers, acc. to ASTM E 100. For officially testing. TP. 60 °F (60 / 60 °F), with lead ballast.

ASTM	Scale	Division	Nominal scale	Length	
No.	sp. gr.	sp. gr.	mm	mm	
1H	-1 to +11	0.1	135	330	8.571.001
2H	9 to 21	0.1	135	330	8.571.002
3H	19 to 31	0.1	135	330	8.571.003
4H	29 to 41	0.1	135	330	8.571.004
5H	39 to 51	0.1	135	330	8.571.005
6H	49 to 61	0.1	135	330	8.571.006
7H	59 to 71	0.1	135	330	8.571.007
8H	69 to 81	0.1	135	330	8.571.008
9H	79 to 91	0.1	135	330	8.571.009
10H	89 to 101	0.1	135	330	8.571.010



Hydrometers. Range 12° A. P. I. in 0.1° 60 °F, with thermometer +30 ... +220 °F in 2 °F, total length 380 mm.

Hydrometers. Range 12° A. P. I. in 0.1° 60 °F, with thermometer, total length 380 mm.

A. P. I.-No.	Scale	Thermometer
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With thermometer

71H-62	-1+11	+30 +220	8.583.001
72H-62	+9 +21	+30 +220	8.583.002
73H-62	+19 +31	+30 +220	8.583.003
74H-62	+29 +41	+30 +220	8.583.004
Case for sets of 4			8.583.005

With thermometer

51HL-62	-1 +11	0 +150	8.583.101
52HL-62	+9 +21	0 +150	8.583.102
53HL-62	+19 +31	0 +150	8.583.103
54HL-62	+29 +41	0 +150	5.583.104
55HL-62	+39 +51	0 +150	8.583.105
56HL-62	+49 +61	0 +150	8.583.106
57HL-62	+59 +71	0 +150	8.583.107
58HL-62	+69 +81	0 +150	8.583.108
59HL-62	+79 +91	0 +150	8.583.109
60HL-62	+89 +101	0 +150	8.583.110
51HM-62	-1 +11	+30 +180	8.583.111
52HM-62	+9 +21	+30 +180	8.583.112
53HM-62	+19 +31	+30 +180	8.583.113
54HM-62	+29 +41	+30 +180	8.583.114
55HM-62	+39 +51	+30 +180	8.583.115
56HM-62	+49 +61	+30 +180	8.583.116
57HM-62	+59 +71	+30 +180	8.583.117
58HM-62	+69 +81	+30 +180	8.583.118
59HM-62	+79 +91	+30 +180	8.583.119
60HM-62	+89 +101	+30 +180	8.583.120
51HH-62	-1 +11	+60 +220	8.583.121
52HH-62	+9 +21	+60 +220	8.583.122
53HH-62	+19 +31	+60 +220	8.583.123
54HH-62	+29 +41	+60 +220	8.583.124
55HH-62	+39 +51	+60 +220	8.583.125
56HH-62	+49 +61	+60 +220	8.583.126
57HH-62	+59 +71	+60 +220	8.583.127
58HH-62	+69 +81	+60 +220	8.583.128
59HH-62	+79 +91	+60 +220	8.583.129
60HH-62	+89 +101	+60 +220	8.583.130
Case of sets of 10			8.583.131



Hydrometers. Range 12° A. P. I. in 0.1° 60 °F, without thermometer, total length 330 mm.

A. P. I.-No.	Scale	
1H-62	-1 +11	8.584.001
2H-62	+9 +21	8.584.002
3H-62	+19 +31	8.584.003
4H-62	+29 +41	8.584.004
5H-62	+39 +51	8.584.005
6H-62	+49 +61	8.584.006
7H-62	+59 +71	8.584.007
8H-62	+69 +81	8.584.008
9H-62	+79 +91	8.584.009
10H-62	+89 +101	8.584.010
Case for sets of 10		8.584.012



Hydrometers acc. to Baumé. Without thermometer, shot-weighted, 15 °C.

Range	Divisions	Length	
Bé	Bé	mm	
0-1	0.1	260	8.558.201
0-2	0.1	260	8.558.202
0-3	0.1	260	8.558.203
0-5	0.1	260	8.558.205
0-10	1.0	230	8.558.210
0-15	1.0	230	8.558.215
0-20	1.0	230	8.558.220
0-30	1.0	250	8.558.230
0-40	1.0	250	8.558.240
0-50	1.0	280	8.558.250
0-70	1.0	280	8.558.270



Alcoholmeters, acc. to Richter and Tralles. % by weight and by volume. TP. 20 °C, packed in a plastic tube, shot-weighted, without thermometer. Length 260 mm. Divisions 0.1 %.

Range % vol.	
0-5	8.558.101
5-10	8.558.102
10-15	8.558.103
15-20	8.558.104
20-25	8.558.105
25-30	8.558.106
30-35	8.558.107
35-40	8.558.108
40-45	8.558.109
45-50	8.558.110
50-55	8.558.111
55-60	8.558.112
60-65	8.558.113
65-70	8.558.114
70-75	8.558.115
75-80	8.558.116
80-85	8.558.117
85-90	8.558.118
90-95	8.558.119
95-100	8.558.120
98-103	8.558.121



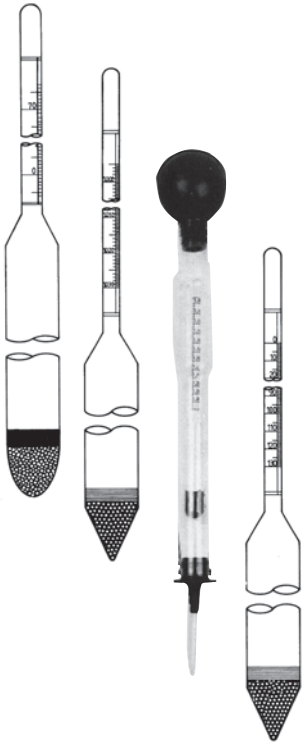
Density-thermo-hydrometers for petroleum. For officially testing, with thermometer -10 to +40 °C : 1 °C, TP. 15 °C. Conformity certified. Divisions 0.001 g/cm³. Nominal range 155 mm. Length 425 mm.

Range g/cm ³	
0.610-0.700	8.568.001
0.680-0.770	8.568.002
0.750-0.840	8.568.003
0.820-0.910	8.568.004



Various hydrometers.

Range	Divisions mm	Nominal scale mm	Length mm	
For boiler feed-water acc. to Dr. Ing. Ammer, TP. 20 °C, with lead ballast				
1-0-1	0.1	45	280	8.572.001
1-0-2	0.1	65	280	8.572.002
0.5-0-0.5	0.1	80	400	8.572.003
Oechsle , TP. 20 °C, with lead ballast, without thermometer				
0-120 % Vol.	1/1	120	270	8.575.000
For Ca(OH)₂ , without thermometer, 20 °C				
0-340 g/l	—	—	500	8.577.101
For salt acc. to Bischoff, without thermometer				
0-27	—	—	240	8.577.201
% hydrometer , without thermometer				
KOH	—	—	270	8.577.301
0-35 % NH ₃	—	—	250	8.577.302
0-27 % NaOH	—	—	250	8.577.303
0-10 % NaOH	—	—	250	8.577.304
0-47 % HNO ₃	—	—	250	8.577.305
0-39 % HCL	—	—	250	8.577.306
0-45 % H ₂ SO ₄	—	—	250	8.577.307
0-30 % H ₂ O ₂	—	—	250	8.577.308
For testing accumulators 1.10-1.30, with glass tubing and rubber ball				
1.10-1.30	—	—	—	8.578.100
Spare hydrometer				
—	—	—	—	8.578.200
For soil acc. to Casagrande. DIN 18123.				
Without thermometer, 20 °C				
0.995-1.030	0.0005	—	350	8.580.100



Hydrometers for determining the s.g. of urine samples acc. to Vogel, 1.000-1.060 g/cm³, 20 °C

1. Without thermometer
2. With thermometer

Scale divisions g/cm ³	1.	2.
0.001	8.580.900	8.580.910
0.002	8.580.902	8.580.912

