1

1 Moisture meter HumidCheck Mini

Easy to use: remove protection cap, press measuring button and insert measuring electrodes in object.

- scale for construction materials and wood
- automatic instrument test
- with clip

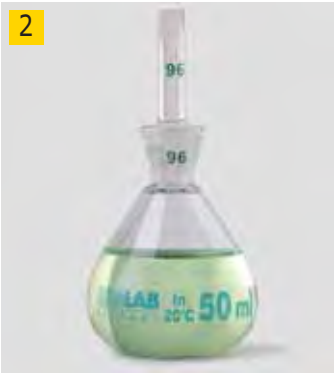
Applications:
Used to measure the moisture level in sawn timber and construction materials. Suitable for field work.

Specifications

Measuring principle:	electrical resistance
Measuring range wood:	6 to 42%
Accuracy wood:	<30% ±2%; >30% ±4%
Measuring construction materials:	0.2 to 2.0%
Accuracy construction materials:	<1.4% ±0.1%; >1.4% ±0.2%
Temperature range:	0 to 40°C (32 to 104°F)
Batteries:	4 x coin cell (LR44)
Housing:	impact-resistant plastic
Dimensions:	80 x 40 x 20mm
Weight:	80g (incl. packaging)

Type	PK	Cat. No.
HumidCheck Mini	1	**9.726 406**

2



2 Pycnometers, calibrated, Borosilicate glass 3.3.

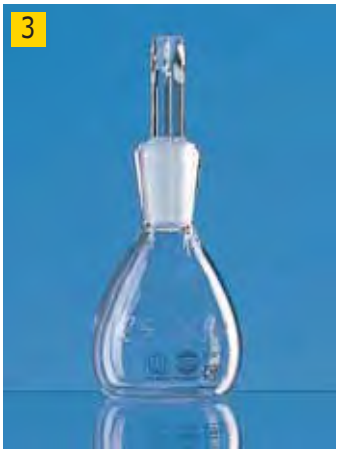
NEW!

Isolab

DIN 12797. Individually calibrated to contain (In) to 0.001ml. Net volume capacity is engraved on the body. Each bottle is calibrated together with its stopper. In order to differentiate easily, both the body and the stopper have the same code numbers printed on themselves.

Capacity ml	PK	Cat. No.
5	1	**4.008 327**
10	1	**6.241 602**
25	1	**4.008 328**
50	1	**6.241 603**
100	1	**4.008 329**

3



3 Pycnometers, BLAUBRAND®, Borosilicate glass 3.3.

BRAND

DIN ISO 3507, guy-lussac type . Including individual certificate. Adjusted.
With NS10/19 capillary stopper. Stopper top ground and polished. Inscription in highly contrasting blue enamel. The volume in cm³ is specified to a precision of 3 decimal places. Calibrated to contain. Every pycnometer is calibrated with its own stopper; hence, stoppers are not interchangeable. Each bottle and its stopper is marked with an unique matching identification number.

Nom. capacity cm³	PK	Cat. No.
5	1	**9.277 305**
10	1	**9.277 310**
25	1	**9.277 325**
50	1	**9.277 350**
100	1	**9.277 400**

1 Pycnometers, BLAUBRAND®, with thermometer and side capillary, Borosilicate glass 3.3.

DIN ISO 3507, guy-lussac type . Including individual certificate. Adjusted. With thermometer and side capillary. Calibrated to contain. The volume in cm³ is specified to a precision of 3 decimal places. Inscription in highly contrasting blue enamel. Thermometer with translucent glass scale, with conical ground joint 10/19. Measuring range 10 to 35°C (0.2°C increments), mercury filled. Side capillary with conical ground joint cap 7/16. Every pycnometer is calibrated with its own stopper; hence, stoppers are not interchangeable. Each bottle and its stopper is marked with an unique matching identification number. *BRAND*

Nom. capacity cm³	PK	Cat. No.
10	1	**9.277 410**
25	1	**9.277 425**
50	1	**9.277 450**
100	1	**9.277 500**

1

2 LLG-Precison-Hydrometer

NEW!

2

Saccharometers
Measuring range, graduation: 0.1% mas, with thermometer: 0 to +35°C, graduation: 1°C, calibrated at 20°C. Filling: Hg. Overall length: 350mm. Optional available with official calibration certificate, works certificate or DKD-calibation certificate.
Please specify with order.

Type	Measuring range % mas	PK	Cat. No.
1	0 - 10	1	**9.236 770**
2	10 - 20	1	**9.236 771**
3	20 - 30	1	**9.236 772**
4	30 - 40	1	**9.236 773**
5	40 - 50	1	**9.236 774**
6	50 - 60	1	**9.236 775**
7	60 - 70	1	**9.236 776**
8	70 - 80	1	**9.236 777**
9	80 - 90	1	**9.236 778**

3 LLG-Precison-Hydrometers

NEW!

3

Alcoholmeters
Measuring range, graduation: 0.1% vol, with thermometer 0 to +30°C, graduation: 0.5°C, calibrated at 20°C. Filling: blue. Overall length: 380mm
Optional available with official calibration certificate, works certificate or DKD-calibation certificate.
Please specify with order.

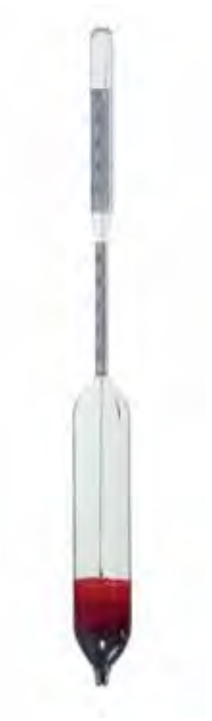
Type	Measuring range % vol	PK	Cat. No.
1	0 - 10	1	**9.236 810**
2	10 - 20	1	**9.236 811**
3	20 - 30	1	**9.236 812**
4	30 - 40	1	**9.236 813**
5	40 - 50	1	**9.236 814**
6	50 - 60	1	**9.236 815**
7	60 - 70	1	**9.236 816**
8	70 - 80	1	**9.236 817**
9	80 - 90	1	**9.236 818**
10	90 - 100	1	**9.236 819**

1 Lactodensimeter

Measuring range, graduation 0.0005g/cm³.
Optional available with official calibration certificate, works certificate or DKD-calibation certificate.
Please specify with order.

Type	Measuring range g/cm³	Graduations °C	Measuring range Thermometer °C	Charge	Overall length mm	PK	Cat. No.
0	1015 - 1040	1	0 to +35	blue	260	1	**9.236 830**
0	1025 - 1036	1	+5 to +40	Hg	370	1	**9.236 831**
1	1020 - 1040	0.5	+10 to +30	Hg	320	1	**9.236 832**
2	1025 - 1036	1	+5 to +40	Hg	370	1	**9.236 833**
3	1020 - 1040	without	without	without	230	1	**9.236 834**
0	1015 - 1040	without	without	without	210	1	**9.236 835**
1	1015 - 1040	1	0 to +40	blue	270	1	**9.236 836**
0	1020 - 1040	1	0 to +35	Hg	250	1	**9.236 837**

1



2

2 Hydrometers, relative density (S.G.)

Shot poised. Without thermometer.

Measuring range g / ml	Sub-divisions g / ml	Length mm	PK	Cat. No.
0.600 - 0.800	0.002	300	1	**9.004 006**
0.800 - 1.000	0.002	300	1	**9.004 008**
1.000 - 1.200	0.002	300	1	**9.004 010**
1.200 - 1.400	0.002	300	1	**9.004 012**
1.400 - 1.600	0.002	300	1	**9.004 014**
1.600 - 1.800	0.002	300	1	**9.004 016**
0.700 - 1.000	0.005	300	1	**9.004 057**
1.000 - 1.500	0.005	300	1	**9.004 060**
1.500 - 2.000	0.005	300	1	**9.004 065**

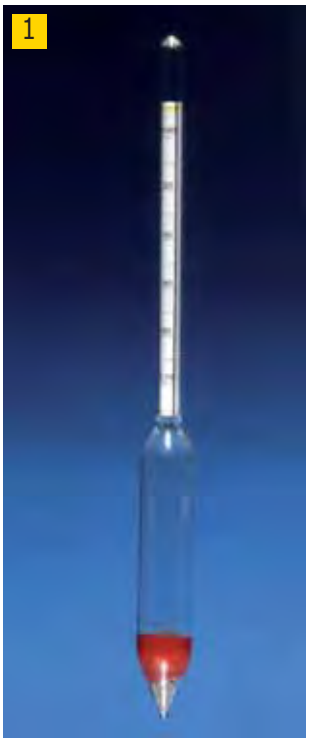
Further models availlable on request.

1 Hydrometers, density, M 100 series

DIN 12791 (and BS718). Adjustable. M100 series. Shot poised.
Without thermometer. Reference temperature: +20°C.

Measuring range g / ml	Sub-divisions g / ml	Length mm	PK	Cat. No.
0.800 - 0.900	0.002	250	1	**9.004 108**
0.900 - 1.000	0.002	250	1	**9.004 109**
1.000 - 1.100	0.002	250	1	**9.004 110**
1.100 - 1.200	0.002	250	1	**9.004 111**
1.200 - 1.300	0.002	250	1	**9.004 112**
1.300 - 1.400	0.002	250	1	**9.004 113**
1.400 - 1.500	0.002	250	1	**9.004 114**
1.500 - 1.600	0.002	250	1	**9.004 115**

Further models availllable on request.

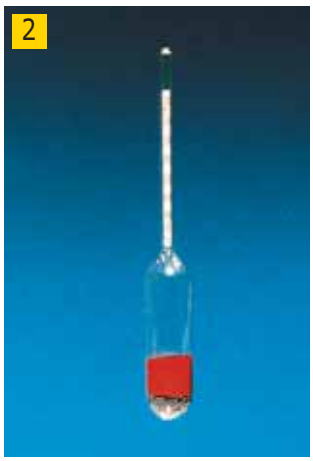


2 Hydrometers, density

Shot poised. Without thermometer. Reference temperature: +20°C.

Measuring range g / ml	Sub-divisions g / ml	Length mm	PK	Cat. No.
0,760 - 0,820	0.001	160	1	**9.004 153**
0,820 - 0,880	0.001	160	1	**9.004 154**
0,880 - 0,940	0.001	160	1	**9.004 155**
0,940 - 1,000	0.001	160	1	**9.004 156**
1,000 - 1,060	0.001	160	1	**9.004 157**
1,060 - 1,120	0.001	160	1	**9.004 158**
1,120 - 1,180	0.001	160	1	**9.004 159**
1,180 - 1,240	0.001	160	1	**9.004 160**
1,240 - 1,300	0.001	160	1	**9.004 161**
1,300 - 1,360	0.001	160	1	**9.004 162**
1,360 - 1,420	0.001	160	1	**9.004 163**

Further models availllable on request.

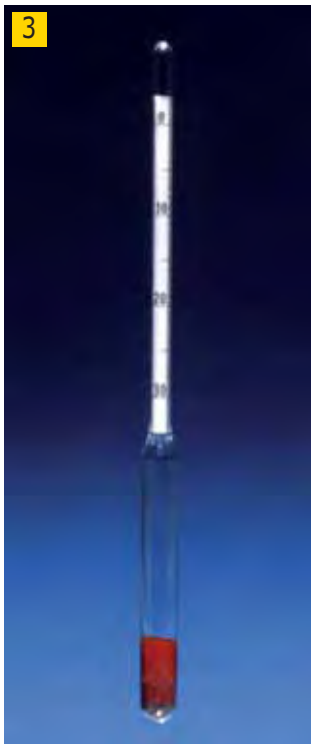


3 Hydrometers, Baumé

Baumé type. Shot poised. Without thermometer. Reference temperature: +15°C.

Measuring range Bé	Sub-divisions Bé	Length mm	PK	Cat. No.
0 - 5	0,1	260	1	**9.004 305**
0 - 10	1,0	220	1	**9.004 310**
0 - 15	1,0	230	1	**9.004 315**
0 - 20	1,0	230	1	**9.004 320**
0 - 30	1,0	250	1	**9.004 330**
0 - 40	1,0	250	1	**9.004 340**
0 - 50	1,0	280	1	**9.004 350**
0 - 70	1,0	300	1	**9.004 370**

Further models availllable on request.



1 Hydrometers, mineral oil

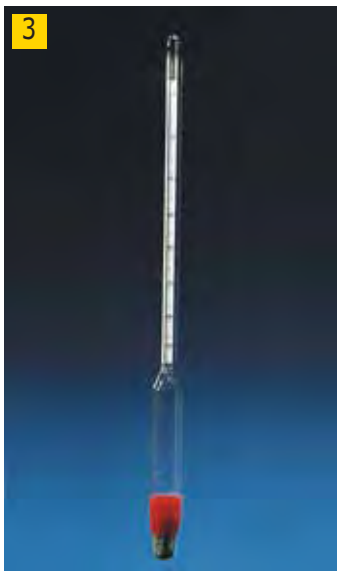
With -10 to +60°C thermometer.
Adjustable.
Reference temperature: +15°C.

Measuring range g / ml	Sub-divisions g / ml	Length mm	PK	Cat. No.
0,610 - 0,700	0,001	390	1	**9.004 561**
0,680 - 0,770	0,001	390	1	**9.004 568**
0,750 - 0,840	0,001	390	1	**9.004 575**
0,820 - 0,910	0,001	390	1	**9.004 582**
0,890 - 0,990	0,001	390	1	**9.004 589**

2 Hydrometers, Dr. Ammer

Dr. Ammer type.
For testing boiler feedwater.
With integral thermometer and temperature correction.
Reference temperature +20°C.

Measuring range Bé	Length mm	PK	Cat. No.
-1 / 0 / +1	290	1	**9.004 601**
-1 / 0 / +2	290	1	**9.004 602**



3 Hydrometers, lime water $Ca(OH)_2$

For lime water $Ca(OH)_2$.
Without thermometer.
Reference temperature: +20°C.

Measuring range	Length mm	PK	Cat. No.
0 - 340 g/l	300	1	**9.004 640**

1 Salinometers, Bischoff type

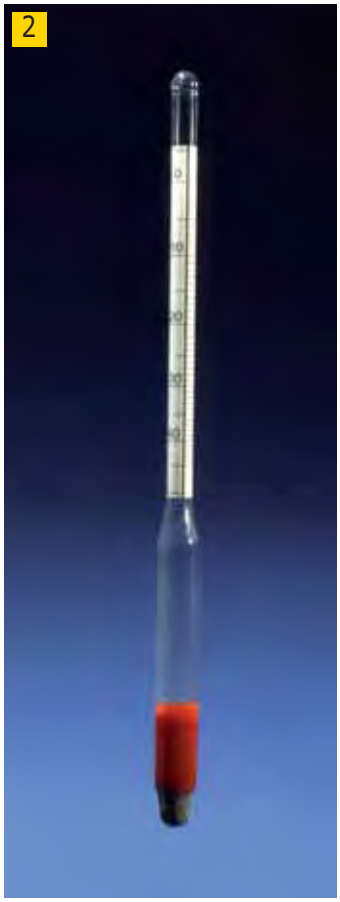
For common salt.
Without thermometer.

Measuring range g / ml	Length mm	PK	Cat. No.
0 - 27	240	1	**9.004 650**

2 Hydrometers for special applications

Without thermometer.
Total length: 250 to 280mm

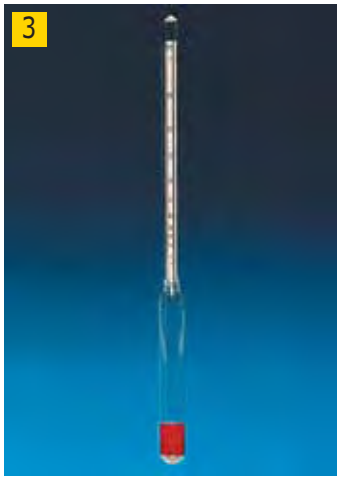
For	Measuring range	PK	Cat. No.
Ammonia	0 to 35 x 0.5 %	1	**9.004 651**
Sodium hydroxide	0 to 27 x 1 %	1	**9.004 652**
Sodium hydroxide	0 to 10 x 0.1 %	1	**9.004 653**
Nitric acid	0 to 47 x 1 %	1	**9.004 654**
Hydrochloric acid	0 to 39 x 1 %	1	**9.004 655**
Sulphuric acid	0 to 45 x 1 %	1	**9.004 656**
Hydrogen peroxide	0 to 30 x 1 %	1	**9.004 657**



3 Alcoholometer

Richter-Tralles type.
0 to 100% at reference temperature: +20°C.
Without thermometer.

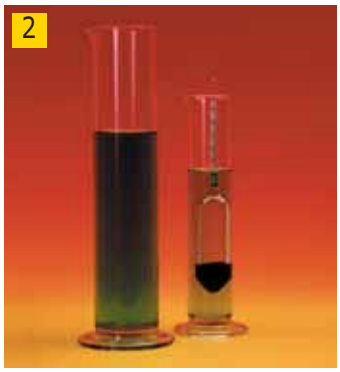
Type	PK	Cat. No.
Alcoholometer	1	**9.004 400**



1 Hydrometer jars

PP. *BRAND*
With overflow chamber so that hydrometer can be read when cylinder is completely full.
Impact resistant and flexible. With spout.

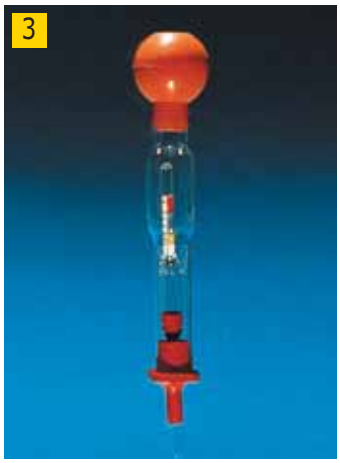
Capacity ml	Int. dia. mm	Height mm	PK	Cat. No.
500	50	350	1	**9.004 900**



2 Hydrometer jars

Glass, with spout and base.

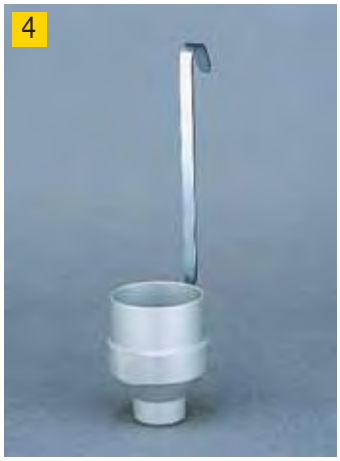
Height mm	Dia. mm	PK	Cat. No.
150	38	1	**9.950 034**
200	38	1	**9.950 035**
200	50	1	**9.950 036**
250	50	1	**9.950 037**
300	50	1	**9.950 038**
350	63	1	**9.950 039**



3 Battery hydrometer

Battery acid tester 1.10 to 1.30.
Boxed complete with glass tube, rubber bulb and hydrometer.

Type	PK	Cat. No.
Battery hydrometer	1	**9.004 710**



4 Dipping flow cups Frikmar

Aluminium. DIN 53211 viscometer.
For all types of liquid chemicals, varnishes, fluid enamels, gravure printing inks
and leather dyes, oils, fats, foodstuffs etc.
With 4mm flow nozzle. Accessory 2, 3, 5, 6, 7 and 8mm nozzles are available on request.

Type	PK	Cat. No.
Dipping flow cups Frikmar	1	**9.149 898**

Flow cups

DIN 53211.
With fixed nozzle, 4mm.
(Also available with 2, 3, 5, 6, 7 and 8mm nozzles - details on request)

Type	PK	Cat. No.
Flow cups	1	**9.149 862**

1 Flow cups, without nozzles

1

For 2, 3, 4, 5, 6, 7 and 8mm outlet detachable nozzles.

Type	PK	Cat. No.
Flow cups	1	**9.149 860**

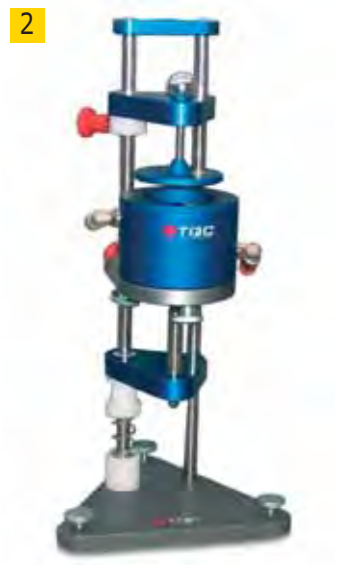
Flow cup nozzles

Flow cup nozzles to DIN 53211. For flow cup 9.149 860.

Int. bore dia. mm	PK	Cat. No.
2	1	**9.149 872**
3	1	**9.149 873**
4	1	**9.149 874**
5	1	**9.149 875**
6	1	**9.149 876**
7	1	**9.149 877**
8	1	**9.149 878**

2 Flow cup stand, adjustable

2

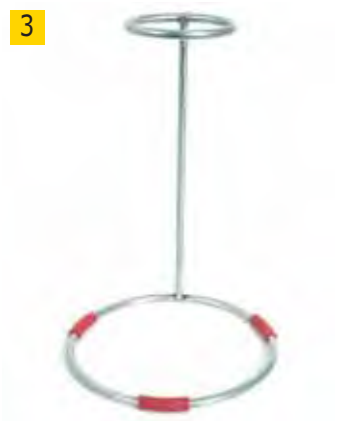


With adjustable cup holder. For 9.149 862 and 9.149 860.

Type	PK	Cat. No.
Flow cup stand, adjustable	1	**9.149 887**

3 Flow cup stand, ring stand

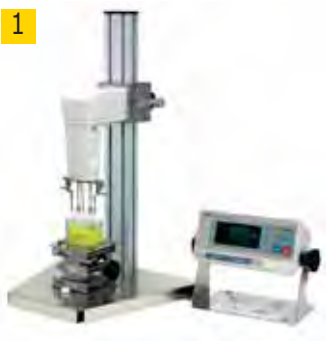
3



Stainless steel.

Type	PK	Cat. No.
Flow cup stand, ring stand	1	**9.149 881**

1



1 Viscometer SV-10/SV-100

A&D Inst.

Sine-wave Vibro Viscometer SV-10/SV-100 measures viscosity by detecting the driving electric current necessary to resonate the two sensor plates at constant frequency of 30Hz and amplitude of less than 1mm.
- wide range of measurements
- temperature measurements: 0 to 160°C
- high accuracy: ±1% of measured value
- small sample size of 35ml and optional 10ml sample vial or 13ml quartz glass vial
- easy cleaning of stainless steel sensor plates and temperature sensor (all gold plated)
- WinCT-Viscosity is software to import the measured data of viscosity and temperature to a PC and graphically display the changes in real-time for your analysis
- easy calibration with distilled water (SV-10)
- sample heating or cooling with "Water Jacket"
- approved measuring method acc. to JCSS (Japan Calibration Service Systems)

Type	Measuring range	Unit	PK	Cat. No.
SV-10	0.3 to 10000 mPAs	mPAs, Pas, cP, P	1	**9.901 560**
SV-100	1 to 100 Pas	Pas, P	1	**9.901 561**

2

2 Viscometers, glass, kinematic, Ubbelohde

SI Analytics GmbH

To ISO/DIS 3105. DIN 51562. BS 188. NF T 60 to 100.
Without documentation of the constants.
For manual and automatic relative measurements.

Type	Capillary	Constant K	PK	Cat. No.
53001	0a	0.005	1	**9.268 301**
53003	0c	0.003	1	**9.268 303**
53010	I	0.01	1	**9.268 310**
53013	Ic	0,03	1	**9.268 313**
53020	II	0.1	1	**9.268 320**
53023	IIc	0.3	1	**9.268 323**
53030	III	1	1	**9.268 330**
53033	IIIc	3	1	**9.268 333**
53040	IV	10	1	**9.268 340**

3

3 Viscometers Ubbelohde, glass, kinematic

SI Analytics GmbH

To ISO/DIS 3105. DIN 51562. BS 188. NF T 60 to 100.
For manual or automatic measurements.
Constants documented in manufacturer's certificate.

Type	Capillary	Capillary i.d. mm	Constant K	Measuring range mm² / sec	PK	Cat. No.
501 00	0	0.36	0.001	0.2 to 1	1	**9.268 100**
501 03	0c	0.47	0.003	0 to 3	1	**9.268 103**
501 01	0a	0.53	0.005	0.8 to 5	1	**9.268 101**
501 10	I	0.63	0.01	1.2 to 10	1	**9.268 110**
501 13	Ic	0.84	0.03	3 to 30	1	**9.268 113**
501 11	Ia	0.95	0.05	5 to 50	1	**9.268 111**
501 20	II	1.13	0.1	10 to 100	1	**9.268 120**
501 23	IIc	1.50	0.3	30 to 300	1	**9.268 123**
501 21	IIa	1.69	0.5	50 to 500	1	**9.268 121**
501 30	III	2.01	1	100 to 1000	1	**9.268 130**
501 33	IIIc	2.65	3	300 to 3000	1	**9.268 133**
501 31	IIIa	3.00	5	500 to 5000	1	**9.268 131**
501 40	IV	3.60	10	1000 to 10000	1	**9.268 140**
532 10	I	0.63	0.01	1.2 to 10	1	**9.268 210**
532 13	Ic	0.84	0.03	3 to 30	1	**9.268 213**
532 20	II	1.13	0.1	10 to 100	1	**9.268 220**
532 23	IIc	1.50	0.3	30 to 300	1	**9.268 223**
532 30	III	2.65	3	300 to 3000	1	**9.268 230**
532 33	IIIc	3.60	10	1000 to 10000	1	**9.268 233**

4

4 Viscometer holders

SI Analytics GmbH

Type 05392. VA steel.
Suitable for all Ubbelohde viscometers without TC sensors. For manual and automatic measurements. Holds the viscometer perpendicularly. Accuracy <1°. Protects the viscometer from damage.

Type	PK	Cat. No.
05392	1	**9.268 790**

1 Viscometer heating jacket

1

With support plate for Ubbelohde and capillary viscometers. *SI Analytics GmbH*
Can be thermoregulated in mantles in the temperature range 0 to 180°C.

Type	PK	Cat. No.
Viscometer heating jacket	1	**9.269 420**

2 Automatic viscometer ViscoClock

2

Introductory model for automatic viscosity analysis. *SI Analytics GmbH*
For determining absolute and relative viscosity.

The most precise method for determining the viscosity of liquids is to measure it in capillary viscometers. The ViscoClock works in accordance with this method. Optical fibres precisely determine the liquid meniscus on two measuring planes, the running time is determined and displayed with a resolution of 0.01 secs. Since the measuring process runs automatically, subjective sources of error are reliably excluded. The 0.01% accuracy of the measured time for calculating the absolute and relative viscosity is given as a measuring uncertainty with a confidence level of 95 %.

The ViscoClock was designed to use of Ubbelohde, micro Ubbelohde or micro Ostwald viscometers and can be operated in all thermostatic baths with transparent tanks.

Measuring range:	Up to 999.99 secs./resolution 0.01 sec.
Timing accuracy:	±0.01 sec. ±1 digit, but not more accurate than 0.1%, given as measuring uncertainty with a confidence level of 95%
Measuring range viscosity:	0.35 to 10000 mm²/sec. (cSt) The absolute, kinematic viscosity is also dependent on the uncertainty of the numerical value of the viscometer constants and on the measuring environment, in particular the measuring temperature
RS 232C interface:	For connecting a printer with a serial interface or a computer (PC) for documenting the data
Operating temperature:	Stand: -40 to +150°C Electronic measuring unit: +10 to +40°C
Dimensions (WxDxH):	approx. 95 x 50 x 490 mm
Weight:	approx. 450g (without viscometer) Power pack approx. 220g
Viscometers accepted:	Ubbelohde (DIN, ISO, ASTM, micro), micro Ostwald.

Type	PK	Cat. No.
ViscoClock	1	**9.269 480**

3 Laboratory Viscometer ProRheo R180

3

ProRheo R180 is both a portable and "stand alone" rotational viscometer.
- rugged instrument housing
- easy to use and wide measurement range
- relevant parameters can be stored
- measuring systems according to DIN 53019
- measurement accuracy: < 1 %
- measurement range: 5 mPas to 540.000 mPas
- Torque: 0.25 to 10 mNm ±0.01 mNm
- rotational speed: 5 to 1000 rpm
- Measurement programmes: 8 measurement points at different shear rates: 2 predefined test set-ups, 8 programmable test set-ups.

R180 viscometer includes:
- Power supply
- stand
- measuring tubes 1, 2 and 3
- measuring bobs 1, 2 and 3
- tube caps 1, 2 and 3
- Instrument case
- Operating instructions

Application table for measuring tubes and bobs

Type	Measuring system	Tube dia. mm	External body dia. mm	Viscosity min. mPa.	Viscosity max. mPa.	Capacity ml	PK	Cat. No.
R180*	11	32.5	30	5	10000	approx. 24	1	**9.106 650**
R180*	22	26.1	24	10	20000	approx. 16	1	**9.106 650**
R180*	33	15.2	14	20	100000	approx. 9	1	**9.106 650**

* All applications are done with the same instrument.