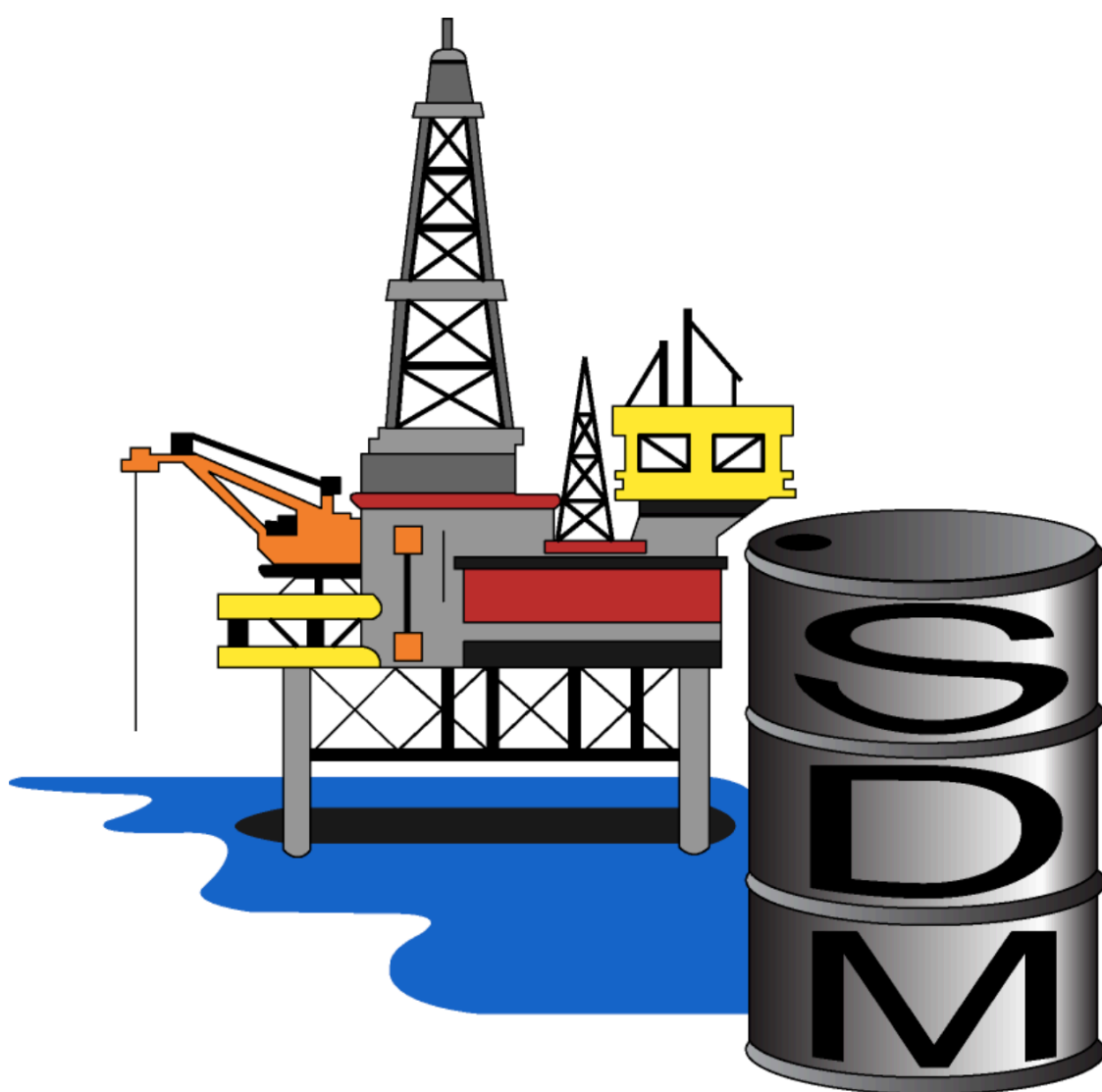


S.D.M.[®] VISCOSITY 2020



With this catalogue we are pleased to present our line of viscosity laboratory instruments conforming to ASTM IP EN ISO DIN and related international methods and furthermore custom solutions on your request.

S.D.M.® design and manufacture the control instruments are used petrochemical, food, cosmetics and pharmaceutical industries.

In addition to the classic 230V power supply specifications, we can also produce instrumentation with your local power service.

This catalog is subject to changes and updates therefore the information shown may not be correct.
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IP 70 (obs) REDWOOD VISCOSITY

No.1 Determines viscosity of oils not exceeding 2000 seconds at the test temperature.
No.2 Determines viscosity of oils exceeding 2000 seconds at the test temperature

DESCRIPTION

The sample is heated to a temperature near to that of the test and placed in the oil cup. It is then adjusted exactly to the test temperature in the bath of the instrument. The time for 50 ml of the sample to flow through the jet into a receiver below is then measured.

Structure made of stainless steel, with front opened jacket, equipped with: calibrated brass oil cup with orifice, fitted with closing- ball-ended rod. Temperature regulation by digital thermoregulator PID with PT100 probe class A and over-temperature alarm, stainless steel heater, cooling coil, motor stirrer, insulated double wall, drain cock and safety internal level for low liquid with warning lamp.

Technical specifications:

- Temperature: No.1 from ambient to 95°C (203°F)
No.2 from ambient to 250°C (482°F)
- Stability: ±0.1°C
- Bath capacity: 7 about liters
- Power supply: 230V ±10% 50/60Hz
- Power: No.1 800W
No.2 1200W
- Dimensions: No.1 40x29x64 cm
No.2 40x29x61 cm
- Weight: 12 kg

P/N

120 REDWOOD VISCOMETER NO.1

With orifice no.1, 1 position

120/2 REDWOOD VISCOMETER NO.1

With orifice no.1, 2 positions

120/3 REDWOOD VISCOMETER NO.1

With orifice no.1, 3 positions

122 REDWOOD VISCOMETER NO.2

With orifice no.2, 1 position

122/2 REDWOOD VISCOMETER NO.2

With orifice no.2, 2 positions

122/3 REDWOOD VISCOMETER NO.2

With orifice no.2, 3 positions

ACCESSORIES ON REQUEST

10-0103 KOHLRAUSCH RECEIVING FLASK

50 ml, pack of 3 pcs

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

10-0371/50 SILICONE OIL 50 cSt

For temperature from 100°C (212°F) to 200°C (392°F), pack of 20 kg

10-0371/350 SILICONE OIL 350 cSt

For temperature from 150°C (302°F) to 250°C (482°F), pack of 20 kg

T-IP8C/B THERMOMETER IP 8C

Scale 0 +45°C, div.0,2°, imm.65 mm, l=340 mm, blue liquid

T-IP9C/B THERMOMETER IP 9C

Scale 40 +85°C, div.0,2°, imm.65 mm, l=340 mm, blue liquid

CONSUMABLES

15-0105 O-RING

Pack of 5 pcs

SPARE PARTS

15-0101 CALIBRATED OIL CUP NO.1

Made of brass, with orifice no.1

15-0101 CALIBRATED OIL CUP NO.2

Made of brass, with orifice no.2

15-0104 CLOSING-BALL-ENDED ROD

Made of brass

14-0001 PROBE PT100A

11-0008 HEATER 800W

For 120

11-0012/13 HEATER 1200W

For 122

15-0003/VER LEVEL SWITCH

16-0005 DIGITAL THERMOREGULATOR

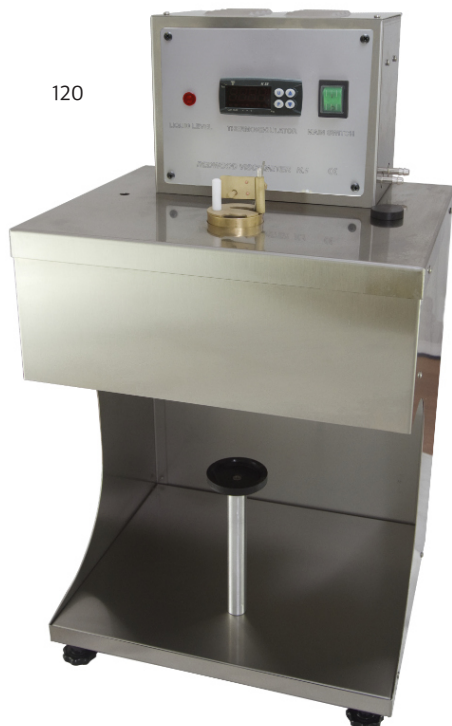
15-0015 STATIC RELAY

15-0004 BIPOLAR GREEN SWITCH

12-0001 MOTOR STIRRER

15-0002/R RED PILOT LAMP

15-0016/MINI RELAY



10-0103



IP 72 VISCOSITY CUTBACK BITUMEN

Measure of the viscosity by determining the time of efflux of 50 ml of a cutback bitumen, at 40°C (104°F), through a 10 mm orifice with efflux times in the range 15 to 500 sec.

EN 12846-1 DETERMINATION OF EFFLUX TIME BY THE EFFLUX VISCOMETER - BITUMINOUS EMULSIONS

For the determination of the efflux time at 40°C (104°F) of bituminous emulsions in seconds using an efflux viscometer. Alternative test temperature is 50°C (122°F)

EN 12846-2 DETERMINATION OF EFFLUX TIME BY THE EFFLUX VISCOMETER - CUT-BACK AND FLUXED BITUMINOUS

For the determination of the efflux time at 25°C (77°F) of petroleum cut-back and fluxed bituminous binders in seconds using an efflux viscometer. Alternative test temperatures are 40°C (104°F) 50°C (122°F) and 60°C (140°F)

EN 13357 DETERMINATION OF THE EFFLUX TIME OF PETROLEUM CUT-BACK AND FLUXED BITUMENS

Specifies a method for the determination of the efflux time of petroleum cut-back and fluxed bitumens in seconds using an efflux viscometer

DESCRIPTION

The oil cup in the bath is filled with the warm sample and maintained at test temperature for at least 1,5 h. The time of efflux of 50 ml through a 10 4 or 2 mm orifice is then determined.

Structure made of stainless steel, with front opened jacket, equipped with: bath with capacity of about 7 liters, calibrated brass oil cup with orifice Ø10 mm, fitted with closing-ball-ended rod and level indicator. Temperature regulation by digital thermoregulator PID with PT100 probe class A and over-temperature alarm, stainless steel heater, cooling coil, motor stirrer, insulated double wall, drain cock and safety internal level for low liquid with warning lamp.

Technical specifications:

- Temperature: from ambient to 60°C (140°F)
- Stability: ±0.1°C
- Bath capacity: 7 about liters
- Power supply: 230V ±10% 50/60Hz
- Power: 800W
- Dimensions: 40x29x64 cm
- Weight: 12 kg

P/N

140 STV (TAR) VISCOMETER

1 position

140/2 STV (TAR) VISCOMETER

2 positions

140/3 STV (TAR) VISCOMETER

3 positions

140/4 STV (TAR) VISCOMETER

4 positions



10-0143



ACCESSORIES ON REQUEST

10-0143 RECEIVER

100 ml calibrated to 20, 25 and 75 ml, pack of 3 pcs

10-0140 CALIBRATED CUP WITH ORIFICE

Made of brass, Ø2 mm, with closing-ball-ended rod

10-0141 CALIBRATED CUP WITH ORIFICE

Made of brass, Ø4 mm, with closing-ball-ended rod

10-0146 GO/NOT GO GAUGE

Ø2 mm

10-0144 GO/NOT GO GAUGE

Ø4 mm

10-0145 GO/NOT GO GAUGE

Ø10 mm

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS17C/B THERMOMETER ASTM 17C

Scale 19 +27°C, div.0,1°, total imm., l=max 280 mm, blue liquid

T-AS19C/B THERMOMETER ASTM 19C

Scale 49 +57°C, div.0,1°, total imm., l=max 280 mm, blue liquid

T-IP8C/B THERMOMETER IP 8C

Scale 0 +45°C, div.0,2°, imm.65 mm, l=340 mm, blue liquid

CONSUMABLES

15-0140 O-RING

Pack of 5 pcs

SPARE PARTS

15-0142 CALIBRATED CUP WITH ORIFICE

Made of brass, Ø10 mm

15-0147/2 CLOSING-BALL-ENDED ROD

Ø2 mm

15-0147/4 CLOSING-BALL-ENDED ROD

Ø4 mm

15-0147/10 CLOSING-BALL-ENDED ROD

Ø10 mm

14-0001 PROBE PT100A

11-0008 HEATER 800W

15-0003/VER LEVEL SWITCH

16-0005 DIGITAL THERMOREGULATOR

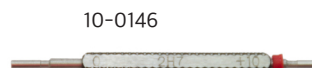
15-0015 STATIC RELAY

15-0004 BIPOLAR GREEN SWITCH

12-0001 MOTOR STIRRER

15-0002/R RED PILOT LAMP

15-0016/MINI RELAY



10-0146

15-0142



15-0147/10



ASTM D88 SAYBOLT VISCOSITY

Covers the empirical procedures for determining the Saybolt Universal or Saybolt Furol viscosities of petroleum products at specified temperatures between 21 and 99°C (70 and 210°F).

ASTM E102 SAYBOLT FUROL VISCOSITY OF BITUMINOUS MATERIALS AT HIGH TEMPERATURES

This test method covers the empirical procedures for determining the Saybolt Furol viscosities of bituminous materials at specified temperatures between 120 and 240°C (248 and 464°F).

DESCRIPTION

The efflux time in seconds of 60 ml of sample, flowing through a calibrated orifice, is measured under carefully controlled conditions.

Structure made of stainless steel, with front opened jacket, equipped with: bath with capacity of about 10 liters, calibrated brass oil cup with stainless steel orifice, polished and calibrated Ø1,76 mm Universal and Ø3,15 mm Furol, orifice wrench and thermometer support. Temperature regulation by digital thermoregulator PID with PT100 probe class A and over-temperature alarm, stainless steel heater, cooling coil, motor stirrer, insulated double wall, drain cock and safety internal level for low liquid with warning lamp.

Technical specifications:

- Temperature: from ambient to 240°C (464°F)
- Stability: ±0.1°C
- Bath capacity: 10 about liters
- Power supply: 230V ±10% 50/60Hz
- Power: 1200W
- Dimensions: 40x29x61 cm
- Weight: 12 kg

P/N

180 SAYBOLT VISCOMETER

1 position

180/2 SAYBOLT VISCOMETER

2 positions

180/3 SAYBOLT VISCOMETER

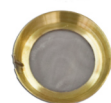
3 positions

180/4 SAYBOLT VISCOMETER

4 positions



180



10-0161

ACCESSORIES ON REQUEST

10-0161 FILTER FUNNEL

With interchangeable 150 µm (No.100) and 75 µm (No.200) wire cloth

10-0162 SAYBOLT FLASK

60 ml

10-0164 WITHDRAWAL TUBE

Made of brass

10-0167 DISPLACEMENT RING ASTM E102

10-0168 SUCTION PIPETTE

Made of glass

10-0169 CUP COVER

10-0171 CUP CLEANING PLUNGER

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

10-0371/50 SILICONE OIL 50 cSt

For temperature from 100°C (212°F) to 200°C (392°F), pack of 20 kg

10-0371/350 SILICONE OIL 350 cSt

For temperature from 150°C (302°F) to 250°C (482°F), pack of 20 kg

For ASTM D88

T-AS17C/B THERMOMETER ASTM 17C

Scale 19 +27°C, div.0,1°, total imm., l=max 280 mm, blue liquid

T-AS18C/B THERMOMETER ASTM 18C

Scale 34 +42°C, div.0,1°, total imm., l=max 305 mm, blue liquid

T-AS19C/B THERMOMETER ASTM 19C

Scale 49 +57°C, div.0,1°, total imm., l=max 280 mm, blue liquid

T-AS20C/B THERMOMETER ASTM 20C

Scale 57 +65°C, div.0,1°, total imm., l=max 280 mm, blue liquid

T-AS21C/B THERMOMETER ASTM 21C

Scale 79 +87°C, div.0,1°, total imm., l=max 280 mm, blue liquid

T-AS22C/B THERMOMETER ASTM 22C

Scale 95 +103°C, div.0,1°, total imm., l=max 305 mm, blue liquid

For ASTM E102

T-AS77F/B THERMOMETER ASTM 77F

Scale 245 +265°F, div.0,5°, total imm., l=max 280 mm, blue liquid

T-AS78F/B THERMOMETER ASTM 78F

Scale 295 +315°F, div.0,5°, total imm., l=max 280 mm, blue liquid

T-AS79F/G THERMOMETER ASTM 79F

Scale 345 +365°F, div.0,5°, total imm., l=275 mm, gallium liquid

T-AS80F/G THERMOMETER ASTM 80F

Scale 395 +415°F, div.0,5°, total imm., l=275 mm, gallium liquid

T-AS81F/G THERMOMETER ASTM 81F

Scale 445 +465°F, div.0,5°, total imm., l=275 mm, gallium liquid

T-AS108F/B THERMOMETER ASTM 108F

Scale 270 +290°F, div.0,5°, total imm., l=max 280 mm, blue liquid

T-AS109F/B THERMOMETER ASTM 108F

Scale 320 +340°F, div.0,5°, total imm., l=375 mm, blue liquid

CONSUMABLES

15-0180 O-RING

Pack of 5 pcs

SPARE PARTS

15-0161 FUNNEL SUPPORT FOR WIRE CLOTH

15-0161/100 WIRE CLOTH 150 μm (No.100)

15-0161/200 WIRE CLOTH 75 μm (No.200)

15-0163 SUPPORT FOR THERMOMETER

15-0165/W ORIFICE WRENCH

15-0165 UNIVERSAL ORIFICE

$\varnothing 1,76 \text{ mm}$

15-0166 FUROL ORIFICE

$\varnothing 3,15 \text{ mm}$

15-0167 CORK STOPPER

15-0168 SAFETY PIPETTE VALVE

15-0172 CALIBRATED OIL CUP

Without orifice

14-0001 PROBE PT100A

11-0012/13 HEATER 1200W

15-0003/VER LEVEL SWITCH

16-0005 DIGITAL THERMOREGULATOR

15-0015 STATIC RELAY

15-0004 BIPOLAR GREEN SWITCH

12-0001 MOTOR STIRRER

15-0002/R RED PILOT LAMP

15-0016/MINI RELAY

10-0169



10-0167



10-0162



10-0164



15-0161



15-0165/W



15-0161/100



15-0163



ASTM D1665 IP 212 DIN 51560 ENGLER SPECIFIC GRAVITY VISCOSITY OF TAR PRODUCTS

Covers the determination of specific viscosity of tars and their fluid products. It does not determine absolute viscosity but is an empirical flow test

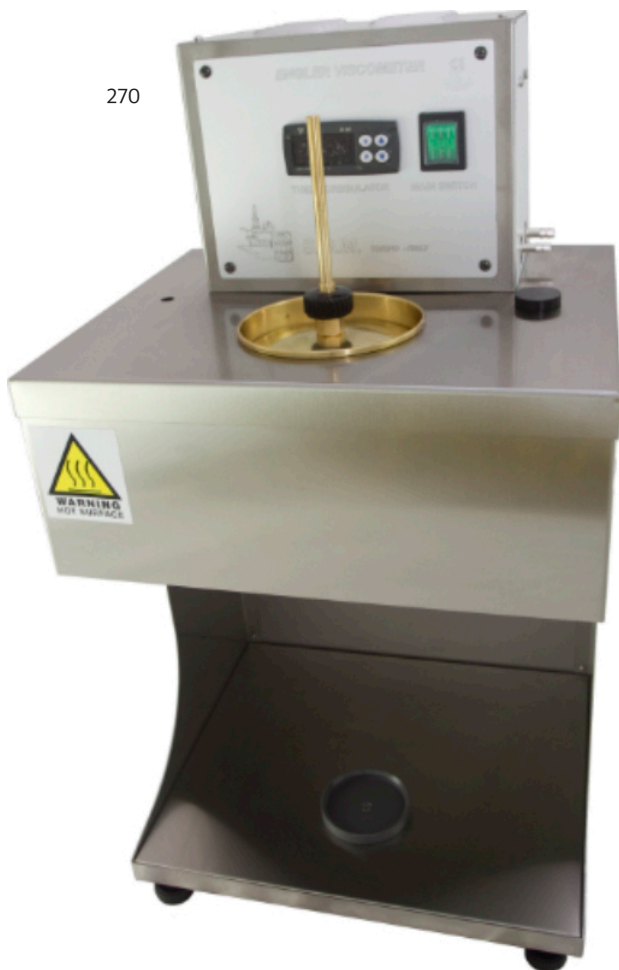
DESCRIPTION

The time in seconds is measured for a fixed volume of liquid material to flow through an efflux cup under an accurately reproducible head and at a closely controlled temperature. Structure made of stainless steel, with front opened jacket, equipped with: bath with capacity of about 7 liters, calibrated brass cup with stainless steel level-control of capillary flow outcropping, lid with PTFE tipped rod for closing the capillary hole. Temperature regulation by digital thermoregulator PID with PT100 probe class A and over-temperature alarm, stainless steel heater, cooling coil, motor stirrer, insulated double wall, drain cock and safety internal level for low liquid with warning lamp.

Technical specifications:

- Temperature: from ambient to 100°C (212°F)
- Stability: $\pm 0.1^\circ\text{C}$
- Bath capacity: 7 about liters
- Power supply: 230V $\pm 10\%$ 50/60Hz
- Power: 800W
- Dimensions: 40x29x64 cm
- Weight: 12 kg

P/N 270 ENGLER VISCOMETER



270

ACCESSORIES ON REQUEST

10-0261 SIEVE

300 μm (No.50) $\varnothing 75$ mm

10-0265 TESTING FLASK

50 ml, graduate calibrated at 20°C, pack of 3 pcs

10-0267 CALIBRATION FLASK KOHLRAUSCH

200 ml, graduation mark calibrated at 20°C, pack of 3 pcs

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS23C/B THERMOMETER ASTM 23C

Scale 18 +28°C, div.0,2°, imm. 90 mm, l=max 217 mm, blue liquid

T-AS24C/B THERMOMETER ASTM 24C

Scale 39 +54°C, div.0,2°, imm. 90 mm, l=max 242 mm, blue liquid

T-AS25C/B THERMOMETER ASTM 25C

Scale 95 +105°C, div.0,2°, imm. 90 mm, l=max 217 mm, blue liquid

T-IP76C/B THERMOMETER IP 76C

Scale 10 +55°C, div.0,5°, imm. 93 mm, l=240 mm, blue liquid

CONSUMABLES

15-0260 O-RING

Pack of 5 pcs

SPARE PARTS

15-0270 ENGLER CUP

15-0271 ENGLER LEVEL CONTROL

15-0272 BRASS CLOSING ROD

With PTFE tipped

15-0273 ENGLER CUP

14-0001 PROBE PT100A

11-0008 HEATER 800W

15-0003/VER LEVEL SWITCH

16-0005 DIGITAL THERMOREGULATOR

15-0015 STATIC RELAY

15-0004 BIPOLAR GREEN SWITCH

12-0001 MOTOR STIRRER

15-0002/R RED PILOT LAMP

15-0016/MINI RELAY

15-0273



15-0272



DESCRIPTION

Brass test cup with stainless steel level-control of capillary flow outcropping, lid with PTFE tipped rod for closing the capillary hole, hand stirrer, bath with stainless steel heater regulated by table electronic regulator, tripod stand.

Technical specifications:

- Temperature: from ambient to 100°C (212°F)
- Stability: $\pm 1^\circ\text{C}$
- Power supply: 230V $\pm 10\%$ 50/60Hz
- Power: 300W

P/N

260 CONVENTIONAL ENGLER VISCOMETER

ACCESSORIES ON REQUEST

10-0261 SIEVE

300 μm (No.50) $\varnothing 75$ mm

10-0265 TESTING FLASK

50 ml, graduate calibrated at 20°C, pack of 3 pcs

10-0267 CALIBRATION FLASK KOHLRAUSCH

200 ml, graduation mark calibrated at 20°C, pack of 3 pcs

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS23C/B THERMOMETER ASTM 23C

Scale 18 +28°C, div.0,2°, imm. 90 mm, l=max 217 mm, blue liquid

T-AS24C/B THERMOMETER ASTM 24C

Scale 39 +54°C, div.0,2°, imm. 90 mm, l=max 242 mm, blue liquid

T-AS25C/B THERMOMETER ASTM 25C

Scale 95 +105°C, div.0,2°, imm. 90 mm, l=max 217 mm, blue liquid

T-IP76C/B THERMOMETER IP 76C

Scale 10 +55°C, div.0,5°, imm. 93 mm, l=240 mm, blue liquid

CONSUMABLES

15-0260 O-RING

Pack of 5 pcs

SPARE PARTS

15-0270 ENGLER CUP

15-0271 ENGLER LEVEL CONTROL

15-0272 BRASS CLOSING ROD

With PTFE tipped

15-0273 ENGLER CUP

15-0110 ELECTRONIC REGULATOR

11-0261 HEATER 300W



ASTM D333 STANDARD GUIDE FOR CLEAR AND PIGMENTED LACQUERS

These test methods cover procedures for testing lacquers and lacquer coatings

ASTM D365 STANDARD GUIDE FOR CLEAR AND PIGMENTED LACQUERS

This guide covers the testing of soluble nitrocellulose base solutions that are made by dispersing various kinds and concentrations of soluble nitrocellulose (cellulose nitrate) in various solvent mixtures

ASTM D1200 VISCOSITY BY FORD VISCOSITY CUP

Covers the determination of the viscosity of Newtonian or near-Newtonian paints, varnishes, lacquers and related liquid materials

DESCRIPTION

The Ford viscosity cup is filled level full with the liquid under test and the time for the material to flow through one of the standard orifices is measured.

Made of anodized aluminium, without orifice.

P/N

200 FORD FLOW CUP

ACCESSORIES ON REQUEST

10-0200/1 ORIFICE ASTM NO.1

Made of stainless steel, Ø1.9 mm

10-0200/2 ORIFICE ASTM NO.2

Made of stainless steel, Ø2.53 mm

10-0200/3 ORIFICE ASTM NO.3

Made of stainless steel, Ø3.4 mm

10-0200/4 ORIFICE ASTM NO.4

Made of stainless steel, Ø4.12 mm

10-0200/5 ORIFICE ASTM NO.5

Made of stainless steel, Ø5.2 mm

10-0203 FLAT GLASS PLATE

10-0204 FLOW CUP STAND

With spirit level

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS17C/B THERMOMETER ASTM 17C

Scale 19 +27°C, div.0,1°, total imm., l=max 280 mm, blue liquid



200



10-0203

FORMULA TO CONVERT THE TIME OF FLOW IN SECONDS TO KINEMATIC VISCOSITY cSt		
ORIFICE NO.	APPROX. CUP VISCOSITY RANGE (cSt)	cSt =
1	10 - 50	$0,49 \cdot (t-35)$
2	25 - 120	$1,44 \cdot (t-18)$
3	49 - 220	$2,31 \cdot (t-6,58)$
4	70 - 370	$3,85 \cdot (t-4,49)$
5	200 - 1200	$12,1 \cdot (t-2)$

ASTM D5125 VISCOSITY OF PAINTS AND RELATED MATERIALS BY ISO FLOW CUPS

This test method covers the determination of the flow time (viscosity) of Newtonian and near-Newtonian paints, and related coatings and products using ISO capillary flow cups.

EN 535 (obs) DETERMINATION OF FLOW TIME OF PAINTS BY USE OF FLOW CUPS

ISO 2431 PAINTS AND VARNISHES - DETERMINATION OF FLOW TIME BY USE OF FLOW CUPS

DIN 53224 (obs) TESTING OF PAINTS, VARNISHES AND SIMILAR PRODUCTS; DETERMINATION OF THE FLOW TIME BY THE ISO CUP

P/N

220/3 ISO FLOW CUP

Made of anodized aluminium cup, stainless steel orifice Ø3 mm

220/4 ISO FLOW CUP

Made of anodized aluminium cup, stainless steel orifice Ø4 mm

220/5 ISO FLOW CUP

Made of anodized aluminium cup, stainless steel orifice Ø5 mm

220/6 ISO FLOW CUP

Made of anodized aluminium cup, stainless steel orifice Ø6 mm

220/8 ISO FLOW CUP

Made of anodized aluminium cup, stainless steel orifice Ø8 mm

ACCESSORIES ON REQUEST

10-0203 FLAT GLASS PLATE

10-0204 FLOW CUP STAND

With spirit level

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS17C/B THERMOMETER ASTM 17C

Scale 19 +27°C, div.0,1°, total imm., l=max 280 mm, blue liquid



220



10-0203

FORMULA TO CONVERT THE TIME OF FLOW IN SECONDS TO KINEMATIC VISCOSITY cSt		
ORIFICE Ø (mm)	APPROX. CUP VISCOSITY RANGE (cSt)	cSt =
3	7 - 42	$0,443 \cdot t - (200/t)$
4	35 - 135	$1,37 \cdot t - (200/t)$
5	91 - 325	$3,28 \cdot t - (220/t)$
6	188 - 684	$6,9 \cdot t - (570/t)$
8	600 - 2000	$21,78 \cdot t - (306/t)$

DIN 53211 (obs) PAINTS, VARNISHES AND SIMILAR COATING MATERIALS DETERMINATION OF FLOW TIME USING THE DIN FLOW CUP

P/N

210 DIN FLOW CUP

Made of anodized aluminium, without orifice.

ACCESSORIES ON REQUEST

10-0210/2 ORIFICE NO.2

Made of stainless steel, $\varnothing 2$ mm

10-0210/3 ORIFICE NO.3

Made of stainless steel, $\varnothing 3$ mm

10-0210/4 ORIFICE NO.4

Made of stainless steel, $\varnothing 4$ mm

10-0210/5 ORIFICE NO.5

Made of stainless steel, $\varnothing 5$ mm

10-0210/6 ORIFICE NO.6

Made of stainless steel, $\varnothing 6$ mm

10-0210/7 ORIFICE NO.7

Made of stainless steel, $\varnothing 7$ mm

10-0210/8 ORIFICE NO.8

Made of stainless steel, $\varnothing 8$ mm

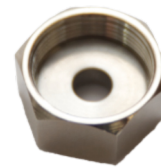
10-0204 FLOW CUP STAND

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm



210



10-0210/4

ACCESSORIES ON REQUEST

10-0203 FLAT GLASS PLATE

10-0204 FLOW CUP STAND

With spirit level

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS17C/B THERMOMETER ASTM 17C

Scale 19 +27°C, div.0,1°, total imm., l=max 280 mm, blue liquid

ASTM D816 RUBBER CEMENTS

Tests to measure the properties of adhesives, commonly called rubber cements, that may be applied in plastic or fluid form and that are manufactured from natural rubber, reclaimed rubber, synthetic elastomers, or combinations of these materials

ASTM D1084 VISCOSITY OF ADHESIVES

This test method cover the determination of the viscosity of free-flowing adhesives

ASTM D4212 VISCOSITY BY DIP-TYPE VISCOSITY CUPS

This test method covers the determination of viscosity of paints, varnishes, lacquers, inks, and related liquid materials by dip-type viscosity cups

P/N

190/1 ZAHN FLOW CUP NO.1

Made of brass, Ø2,0 mm

190/2 ZAHN FLOW CUP NO.2

Made of brass, Ø2,7 mm

190/3 ZAHN FLOW CUP NO.3

Made of brass, Ø3,8 mm

190/4 ZAHN FLOW CUP NO.4

Made of brass, Ø4,3 mm

190/5 ZAHN FLOW CUP NO.5

Made of brass, Ø5,3 mm

ACCESSORIES ON REQUEST

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS17C/B THERMOMETER ASTM 17C

Scale 19 +27°C, div.0,1°, total imm., l=max 280 mm, blue liquid



FORMULA TO CONVERT THE TIME OF FLOW IN SECONDS TO KINEMATIC VISCOSITY cSt		
ORIFICE NO.	APPROX. CUP VISCOSITY RANGE (cSt)	cSt =
1	5 - 60	1,1 · (t-29)
2	20 - 250	3,5 · (t-14)
3	100 - 800	11,7 · (t-7,5)
4	200 - 1200	14,8 · (t-5)
5	400 - 1800	23 · (t-0)

DIN 53015 MEASUREMENT OF VISCOSITY USING THE HÖPPLER FALLING-BALL VISCOMETER

This standard specifies a method of determining the dynamic viscosity of Newtonian liquids using the Höppler falling-ball viscometer, the range is from 0,6 to 250000 mPa·s at temperatures from -20° to 120°C.

DESCRIPTION

The time taken by a ball to traverse a distance delineated by marks under the influence of gravity is measured in an inclined cylindrical tube filled with the liquid examined. Mounted on support with leveling screws and bubble level, fitted with stop pin which allows the viscometer to reverse. Calibrated fall tube, tube with two maximum level notches and an intermediate-level one, equipped with 6 gauged balls: 1+2=borosilicate glass, 3+4=Ni-Fe, 5+6=steel. Pyrex glass jacket for thermostatic bath with covers, neoprene gaskets, connections for the circulation of the thermostated liquid from the thermostatic bath. With certificate at 20°C.

Technical specifications:

- Temperature: from -20 to 120°C (-4 to 248°F) (with external unit)

P/N

320 HÖPPLER VISCOMETER



ACCESSORIES ON REQUEST

722/P CIRCULATING BATH ±0.02°C

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-0332 THERMOMETER 19° +21°C, DIV. 0.02°

T-0333 THERMOMETER -1° +26°C, DIV. 0.1°

T-0334 THERMOMETER 24° +51°C, DIV. 0.1°

T-0335 THERMOMETER 49° +76°C, DIV. 0.1°

T-0336 THERMOMETER 74 +101°C, DIV.0.1°

T-0337 THERMOMETER 99 +126°C, DIV.0.1°

T-0338 THERMOMETER 124 +151°C, DIV.0.1°

CONSUMABLES

15-0324 GASKET

Pack of 5 pcs

SPARE PARTS

15-0321 CALIBRATED FALL TUBE

15-0322 CALIBRATED BALLS

15-0322



BALL NO.	MATERIAL	CALIBRATION CONSTANT K, IN mPa·s·cm ³ /g·s	VISCOSITY MEASUREMENT RANGE, IN mPa·s
1	Borosilicate glass	0,007	0,6 to 10
2	Borosilicate glass	0,09	9 to 140
3	Ni/iron	0,09	40 to 700
4	Ni/iron	0,7	150 to 5000
5	Ni/iron	7	1500 to 50000
6	Ni/iron	35	Above 7500

DESCRIPTION

Mounted on support with leveling screws and bubble level, fitted with stop pin which allows the viscometer to reverse. Calibrated fall tube, tube with two maximum level notches and an intermediate-level one, equipped with 6 gauged balls: 1+2=borosilicate glass, 3+4=Ni-Fe, 5+6=steel. Pyrex glass jacket for thermostatic bath with covers, neoprene gaskets, connections for the circulation of the thermostated liquid from the thermostatic bath and heater element regulated by electronic regulator. With certificate at 20°C.

Technical specifications:

- Temperature: from -20 to 120°C (-4 to 248°F) (with external unit for cooling)
- Power supply: 230V ±10% 50/60Hz
- Power: 110W

P/N

330 HÖPPLER HEATED VISCOMETER

ACCESSORIES ON REQUEST

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-0332 THERMOMETER 19° +21°C, DIV. 0.02°

T-0333 THERMOMETER -1° +26°C, DIV. 0.1°

T-0334 THERMOMETER 24° +51°C, DIV. 0.1°

T-0335 THERMOMETER 49° +76°C, DIV. 0.1°

T-0336 THERMOMETER 74° +101°C, DIV.0.1°

T-0337 THERMOMETER 99° +126°C, DIV.0.1°

T-0338 THERMOMETER 124° +151°C, DIV.0.1°

CONSUMABLES

15-0324 GASKET

Pack of 5 pcs

SPARE PARTS

15-0321 CALIBRATED FALL TUBE

15-0322 CALIBRATED BALLS

11-0331 HEATER 110W

15-0110 ELECTRONIC REGULATOR



330

ASTM D445 IP 71 ISO 3104 KINEMATIC VISCOSITY OF TRANSPARENT AND OPAQUE LIQUIDS (AND CALCULATION OF DYNAMIC VISCOSITY)

This test method specifies a procedure for the determination of the kinematic viscosity, ν , of liquid petroleum products, both transparent and opaque, by measuring the time for a volume of liquid to flow under gravity through a calibrated glass capillary viscometer. The dynamic viscosity, η , can be obtained by multiplying the kinematic viscosity, ν , by the density, ρ , of the liquid.

ASTM D446 IP 71 ISO 3105 STANDARD SPECIFICATIONS AND OPERATING INSTRUCTIONS FOR GLASS CAPILLARY KINEMATIC VISCOMETERS

ASTM D2170 IP 319 KINEMATIC VISCOSITY OF ASPHALTS (BITUMENS)

This test method covers procedures for the determination of kinematic viscosity of liquid asphalts, road oils, and distillation residues of liquid asphalts all at 60 °C [140 °F] and of liquid asphalt binders at 135 °C (275 °F) in the range from 6 to 100.000 mm²/s (cSt)

EN 12595 KINEMATIC VISCOSITY OF BITUMEN AND BITUMINOUS BINDERS

For the determination of the kinematic viscosity of bituminous binders at 60°C and 135 °C in the range from 6 to 300.000 mm²/s (cSt).

Bituminous Emulsions are not covered within the scope of this method.

DESCRIPTION

The time is measured for a fixed volume of liquid to flow under gravity through the capillary of a calibrated viscometer under a reproducible driving head and at a closely controlled and known temperature. The kinematic viscosity is the product of the measured flow time and the calibration constant of the viscometer.

Borosilicate tank, cover with 5 holes 50.8mm, PT100 probe class A, stainless steel heater, cooling coil for improved control near to ambient temperature, motor stirrer, safety internal level for low liquid, containment chamber.

Plate base painted with antacid epoxy products which houses LCD touch display 4.3" with PID controller, independent timer for each position (total 5), set up constant and automatic viscosity in cSt result, over-temperature alarm.

With stand-by stainless steel covers and back led light.

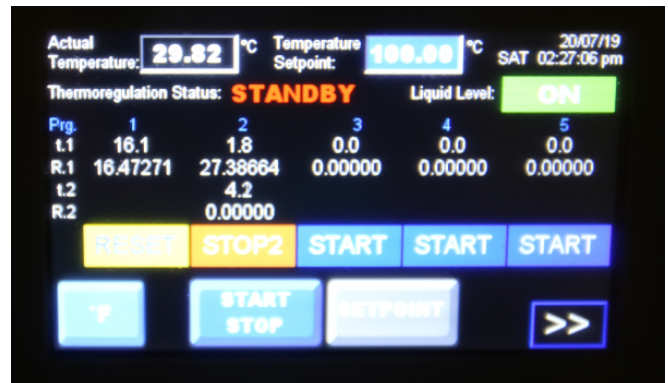
Technical specifications:

- Temperature: from ambient to 150°C (302°F)
- Stability: up to +100°C (212°F) ±0.02°C over ±0.05°C
- Bath capacity: about 15 liters
- Power: 1300W
- Dimensions: 60x34x60 cm
- Weight: 27 Kg

P/N 390 VISCOMETER BATH



390



ACCESSORIES ON REQUEST

10-0371/10 SILICONE OIL 10 cSt

For temperature from ambient to 100°C (212°F), pack of 20 l

10-0371/50 SILICONE OIL 50 cSt

For temperature from 100°C (212°F) to 200°C (392°F), pack of 20 kg

10-0372 VISCOSITY TEMPERATURE CHARTS

For liquid petroleum products, charts I thru VII

10-0373 FILTER

75 µm

10-0374 STOPPER FOR GLASS CAPILLARY VISCOMETER

Made of silicone, pack of 5 pcs

10-0375 METALLIC SYRINGE

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

T-AS128C/B THERMOMETER ASTM 128C

Scale -1,4 +1,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS44C/B THERMOMETER ASTM 44C

Scale 18,6 +21,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS45C/B THERMOMETER ASTM 45C

Scale 23,6 +26,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS118C/B THERMOMETER ASTM 118C

Scale 28,6 +31,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS28C/B THERMOMETER ASTM 28C

Scale 36,6 +39,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS120C/B THERMOMETER ASTM 120C

Scale 38,6 +41,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS46C/B THERMOMETER ASTM 46C

Scale 48,6 +51,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS29C/B THERMOMETER ASTM 29C

Scale 52,6 +55,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS47C/B THERMOMETER ASTM 47C

Scale 58,6 +61,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-IP100C/B THERMOMETER IP 100C

Scale 78,6 +81,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS48C/B THERMOMETER ASTM 48C

Scale 80,6 +83,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS129C/B THERMOMETER ASTM 129C

Scale 91,6 +94,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS121C/B THERMOMETER ASTM 121C

Scale 98,6 +101,4°C, div.0,05°, total imm., l=max 310 mm, blue liquid

T-AS110C/B THERMOMETER ASTM 110C

Scale 133,6 +136,4°C, div.0,05°, total imm., l=305 mm, blue liquid

T-AS132C/G THERMOMETER ASTM 132C

Scale 148,6 +151,4°C, div.0,05°, total imm., l=max 310 mm, gallium liquid

SPARE PARTS

14-0002 PROBE PT100A

11-0012/19 HEATER 1200W

15-0003/VER LEVEL SWITCH

15-0015 STATIC RELAY

15-0004 BIPOLAR GREEN SWITCH

15-0004 BIPOLAR YELLOW SWITCH

12-0001 MOTOR STIRRER

15-0371 LED LAMP

16-0050 THERMOREGULATOR

16-0051 PT100 CONVERTER

16-0001/8050 TOUCH SCREEN

18-0001 JAR

15-SUG/30302 CORK TOP

10-0372



10-0373



10-0375



DESCRIPTION

For the determination of the kinematic viscosity with glass capillary viscometer.
Borosilicate tank, cover with 5 holes 50.8 mm (2 in), leakage protection vessel supplied with cork disk supporting and stainless steel base, stainless steel control box on the cover, temperature controlled by digital thermoregulator PID with PT100 probe class A and over-temperature alarm, stainless steel heater, cooling coil for improved control near to ambient temperature, motor stirrer, safety internal level for low liquid with warning lamp. With stand-by stainless steel covers.

Technical specifications:

- Temperature: from ambient to 150°C (302°F)
- Stability: $\pm 0.1^\circ\text{C}$
- Bath capacity: 15 about liters
- Power supply: 230V $\pm 10\%$ 50/60Hz
- Power: 1200W
- Dimensions: 35x35x52 cm
- Weight: 15 kg

P/N

370 VISCOMETER BATH

ACCESSORIES ON REQUEST

10-0371/10 SILICONE OIL 10 cSt

For temperature from ambient to 100°C (212°F), pack of 20 l

10-0371/50 SILICONE OIL 50 cSt

For temperature from 100°C (212°F) to 200°C (392°F), pack of 20 kg

10-0372 VISCOSITY TEMPERATURE CHARTS

For liquid petroleum products, charts I thru VII

10-0373 FILTER, 75 MICRON

10-0375 METALLIC SYRINGE

10-0332 DIGITAL STOPWATCH

7 digit LCD, max.10 hours, 1/100 sec, digit h=8 mm

10-0371 BACK LIGHT

SPARE PARTS

14-0002 PROBE PT100A

11-0012/19 HEATER 1200W

15-0003/VER LEVEL SWITCH

16-0005 DIGITAL THERMOREGULATOR

15-0015 STATIC RELAY

15-0004 BIPOLAR GREEN SWITCH

12-0001 MOTOR STIRRER

15-0002/R RED PILOT LAMP

15-0016/MINI RELAY

18-0001 JAR

18/0003/CONT/330 LEAKAGE PROTECTION VESSEL

15-SUG/30302 CORK TOP

370



10-0371



VISCOMETER TUBE CLEANER AND DRYER P/N 380

VISCOSITY

DESCRIPTION

Solvent cleaning-unit for washing and drying capillary-glass-tube viscometers. Washes and dries up to 6 capillary tubes at a time.

Stainless steel case with 6 independent regulation valves fitted with holding-down spring, air filters, pressure regulator and pressure gauge, to be feed from one external air source. 7.5 liters capacity internal solvent tank with level indicator. Protection cover in stainless steel and window check.

Technical specifications:

- Capacity: about 7.5 liters
- Dimensions: 72x34x82 cm
- Weight: 32 kg.

P/N

380 VISCOMETER TUBE CLEANER AND DRYER

ACCESSORIES ON REQUEST

2460/SC5 PUMP

Inlet capacity 5 m³/h, final pressure 120 mbar, motor power 0,12 kW, noise level 59 dB, dimensions 226x139x138 mm, weight 5,4 kg

COVER OPEN

380



2460/SC5



GLASS CAPILLARY VISCOMETERS P/N 350/... 360/...

VISCOSITY

CANNON®-FENSKE ROUTINE VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 203 mm, minimum
sample volume 7 ml.

On request uncalibrated with item 350/.../U, where
"..." Is the size.

ACCESSORIES ON REQUEST

10-0350/P VISCOMETER HOLDER

Made of plastic

10-0350/R VISCOMETER HOLDER

Made of rubber

10-0350/M VISCOMETER HOLDER

Made of metal



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
350/25	25	0,002	0,5-2
350/50	50	0,004	0,8-4
350/75	75	0,008	1,6-8
350/100	100	0,015	3-15
350/150	150	0,035	7-35
350/200	200	0,1	20-100
350/300	300	0,25	50-250
350/350	350	0,5	100-500
350/400	400	1,2	240-1200
350/450	450	2,5	500-2500
350/500	500	8	1600-8000
350/600	600	20	4000-20000
350/650	650	45	9000-45000
350/700	700	100	20000-100000

CANNON®-FENSKE OPAQUE VISCOMETER ASTM D445 D446 D2170 IP 71 ISO 3104 ISO 3105

Reverse flow type, for opaque liquids, used to
measure kinematic viscosity of liquid (cutback)
asphalts and road oils at 60°C (140°F) in range of 30
to 6000 cSt, with certificate
Require liquid bath depth of 229 mm, minimum
sample volume 12 ml.

On request uncalibrated with item 360/.../U, where
"..." Is the size.

ACCESSORIES ON REQUEST

10-0350/P VISCOMETER HOLDER

Made of plastic

10-0350/R VISCOMETER HOLDER

Made of rubber

10-0350/M VISCOMETER HOLDER

Made of metal



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
360/25	25	0,002	0,5-2
360/50	50	0,004	0,8-4
360/75	75	0,008	1,6-8
360/100	100	0,015	3-15
360/150	150	0,035	7-35
360/200	200	0,1	20-100
360/300	300	0,25	50-250
360/350	350	0,5	100-500
360/400	400	1,2	240-1200
360/450	450	2,5	500-2500
360/500	500	8	1600-8000
360/600	600	20	4000-20000
360/650	650	45	9000-45000
360/700	700	100	20000-100000

GLASS CAPILLARY VISCOMETERS P/N 340/... 341/...

VISCOSITY

UBBELOHDE VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 241 mm, minimum
sample volume 11 ml.

On request uncalibrated with item 340/.../U, where
"..." is the size.

ACCESSORIES ON REQUEST 10-0340 VISCOMETER HOLDER Made of metal



P/N	SIZE	APPROX. CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
340/0	0	0,001	0,3-1
340/0C	0C	0,003	0,6-3
340/0B	0B	0,005	1-5
340/1	1	0,01	2-10
340/1C	1C	0,03	6-30
340/1B	1B	0,05	10-50
340/2	2	0,1	20-100
340/2C	2C	0,3	60-300
340/2B	2B	0,5	100-500
340/3	3	1	200-1000
340/3C	3C	3	600-3000
340/3B	3B	5	1000-50000
340/4	4	10	2000-10000
340/4C	4C	30	6000-300000
340/4B	4B	50	10000-500000
340/5	5	100	200000-100000

CANNON®-UBBELOHDE VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, also used for
evaluating jet and hydraulic lubricants. Especially
suited for use at temperatures above 93°C (200°F)
or below -18°C (0°F), with certificate
Require liquid bath depth of 241 mm, minimum
sample volume 11 ml.

On request uncalibrated with item 341/.../U, where
"..." is the size.

ACCESSORIES ON REQUEST 10-0341/P VISCOMETER HOLDER Made of plastic 10-0341/R VISCOMETER HOLDER Made of rubber 10-0341/M VISCOMETER HOLDER Made of metal



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
341/25	25	0,002	0,5-2
341/50	50	0,004	0,8-4
341/75	75	0,008	1,6-8
341/100	100	0,015	3-15
341/150	150	0,035	7-35
341/200	200	0,1	20-100
341/300	300	0,25	50-250
341/350	350	0,5	100-500
341/400	400	1,2	240-1200
341/450	450	2,5	500-2500
341/500	500	8	1600-8000
341/600	600	20	4000-20000
341/650	650	45	9000-45000
341/700	700	100	20000-100000

GLASS CAPILLARY VISCOMETERS P/N 343/... 345/...

VISCOSITY

CANNON®-UBBELOHDE SEMI-MICRO VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For small sample of transparent liquids, with certificate
Require liquid bath depth of 240 mm, minimum sample volume 1 ml.

On request uncalibrated with item 343/.../U, where "... " Is the size.

ACCESSORIES ON REQUEST

10-0341/P VISCOMETER HOLDER

Made of plastic

10-0341/R VISCOMETER HOLDER

Made of rubber

10-0341/M VISCOMETER HOLDER

Made of metal



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
343/25	25	0,002	0,5-2
343/50	50	0,004	0,8-4
343/75	75	0,008	1,6-8
343/100	100	0,015	3-15
343/150	150	0,035	7-35
343/200	200	0,1	20-100
343/300	300	0,25	50-250
343/350	350	0,5	100-500
343/400	400	1,2	240-1200
343/450	450	2,5	500-2500
343/500	500	8	1600-8000
343/600	600	20	4000-20000

CANNON®-UBBELOHDE DILUTION VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For intrinsic viscosity of transparent liquids, with certificate
Require liquid bath depth of 305 mm, minimum sample volume 8 ml can be diluted at 40 ml

On request uncalibrated with item 345/.../U, where "... " Is the size.

ACCESSORIES ON REQUEST

10-0341/P VISCOMETER HOLDER

Made of plastic

10-0341/R VISCOMETER HOLDER

Made of rubber

10-0341/M VISCOMETER HOLDER

Made of metal



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
345/25	25	0,002	0,5-2
345/50	50	0,004	0,8-4
345/75	75	0,008	1,6-8
345/100	100	0,015	3-15
345/150	150	0,035	7-35
345/200	200	0,1	20-100
345/300	300	0,25	50-250
345/350	350	0,5	100-500
345/400	400	1,2	240-1200
345/450	450	2,5	500-2500
345/500	500	8	1600-8000
345/600	600	20	4000-20000

GLASS CAPILLARY VISCOMETERS P/N 347/... 349/...

VISCOSITY

CANNON®-UBBELOHDE FOUR-BULB SHEAR DILUTION VISCOMETER (FIVE-FOLD DILUTION TYPE)
ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For measurement of intrinsic viscosities extrapolated to zero shear rate, with certificate
Require liquid bath depth of 280 mm, minimum sample volume 20 ml.

On request uncalibrated with item 347/.../U, where "... " is the size.

P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)	SHEAR RATE AT WALL, RECIPROCAL SECONDS
347/25	25	0,002	0,4-2	82-3300
347/50	50	0,004	0,8-4	45-1800
347/75	75	0,008	1,6-8	24-960
347/100	100	0,015	3-15	15-600
347/150	150	0,035	7-35	8-320

ACCESSORIES ON REQUEST

10-0341/P VISCOMETER HOLDER

Made of plastic

10-0341/R VISCOMETER HOLDER

Made of rubber

10-0341/M VISCOMETER HOLDER

Made of metal



CANNON®-UBBELOHDE FOUR-BULB SHEAR DILUTION VISCOMETER (TEN-FOLD DILUTION TYPE)
ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For measurement of intrinsic viscosities extrapolated to zero shear rate, with certificate
Require liquid bath depth of 430 mm, minimum sample volume 20 ml.

On request uncalibrated with item 349/.../U, where "... " is the size.

P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)	SHEAR RATE AT WALL, RECIPROCAL SECONDS
349/25	25	0,002	0,5-2	82-1650
349/50	50	0,004	0,8-4	45-900
349/75	75	0,008	1,6-8	24-480
349/100	100	0,015	3-15	15-300
349/150	150	0,035	7-35	8-160

ACCESSORIES ON REQUEST

10-0341/P VISCOMETER HOLDER

Made of plastic

10-0341/R VISCOMETER HOLDER

Made of rubber

10-0341/M VISCOMETER HOLDER

Made of metal



GLASS CAPILLARY VISCOMETERS P/N 352/... 353/...

VISCOSITY

CANNON®-MANNING SEMI-MICRO VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For small samples of transparent liquids, with certificate.

Require liquid bath depth of 200 mm, approximately sample volume 1 ml.

On request uncalibrated with item 352/.../U, where "... " is the size.

ACCESSORIES ON REQUEST

110-0350/P VISCOMETER HOLDER

Made of plastic

10-0350/R VISCOMETER HOLDER

Made of rubber



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
352/25	25	0,002	0,5-2
352/50	50	0,004	0,8-4
352/75	75	0,008	1,6-8
352/100	100	0,015	3-15
352/150	150	0,035	7-35
352/200	200	0,1	20-100
352/300	300	0,25	50-250
352/350	350	0,5	100-500
352/400	400	1,2	240-1200
352/450	450	2,5	500-2500
352/500	500	8	1600-8000
352/600	600	20	4000-20000

CANNON®-MANNING SEMI-MICRO EXTRA LOW CHARGE VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For small samples of transparent liquids, with certificate.

Require liquid bath depth of 200 mm, approximately sample volume 0,5 ml.

On request uncalibrated with item 353/.../U, where "... " is the size.



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
353/25	25	0,002	0,5-2
353/50	50	0,004	0,8-4
353/75	75	0,008	1,6-8
353/100	100	0,015	3-15
353/150	150	0,035	7-35
353/200	200	0,1	20-100
353/300	300	0,25	50-250
353/350	350	0,5	100-500
353/400	400	1,2	240-1200
353/450	450	2,5	500-2500
353/500	500	8	1600-8000
353/600	600	20	4000-20000

VISCOMETERS P/N 364/... 366/... 367/...

ZEITFUCHS® TRANSPARENT VISCOMETER (ROUND METAL HOLDER) ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 292 mm,
approximately sample volume 15 ml.

On request uncalibrated with item 366/.../U, where
"..." is the size.



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
366/1	1	0,003	0,6-3
366/2	2	0,01	2-10
366/3	3	0,03	6-30
366/4	4	0,1	20-100
366/5	5	0,3	60-300
366/6	6	1	200-1000
366/7	7	3	600-3000

ZEITFUCHS® TRANSPARENT VISCOMETER (RECTANGULAR METAL HOLDER) ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 292 mm,
approximately sample volume 15 ml.

On request uncalibrated with item 367/.../U, where
"..." is the size.

P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
367/1	1	0,003	0,6-3
367/2	2	0,01	2-10
367/3	3	0,03	6-30
367/4	4	0,1	20-100
367/5	5	0,3	60-300
367/6	6	1	200-1000
367/7	7	3	600-3000

ZEITFUCHS® VISCOMETER CROSS-ARM ASTM D445 D446 ASTM D2170 IP 71 ISO 3104 ISO 3105

For transparent and opaque liquids, also used to
measure of liquid (cutback) asphalts and road oils at
60°C (140°F) and asphalt cements at 135°C (275°F)
in the range of 30 to 6000 cSt, with certificate
Require liquid bath depth of 230 mm, minimum
sample volume 1 to 3 ml

ACCESSORIES ON REQUEST
10-0364/R VISCOMETER HOLDER
Made of rubber
10-0364/M VISCOMETER HOLDER
Made of metal



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
364/1	1	0,003	0,6-3
364/2	2	0,01	2-10
364/3	3	0,03	6-30
364/4	4	0,1	20-100
364/5	5	0,3	60-300
364/6	6	1	200-1000
364/7	7	3	600-3000
364/8	8	10	2000-10000
364/9	9	30	6000-30000
364/10	10	100	20000-100000

GLASS CAPILLARY VISCOMETERS P/N 362/... 363/...

VISCOSITY

ZEITFUCHS® VISCOMETER CROSS-ARM (ROUND METAL HOLDER) ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent and opaque liquids, also used to measure of liquid (cutback) asphalts and road oils at 60°C (140°F) and asphalt cements at 135°C (275°F) in the range of 30 to 6000 cSt, with certificate Require liquid bath depth of 230 mm, minimum sample volume 1 to 3 ml



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
362/1	1	0,003	0,6-3
362/2	2	0,01	2-10
362/3	3	0,03	6-30
362/4	4	0,1	20-100
364/5	5	0,3	60-300
362/6	6	1	200-1000
362/7	7	3	600-3000
362/8	8	10	2000-10000
362/9	9	30	6000-30000
362/10	10	100	20000-100000

ZEITFUCHS® VISCOMETER CROSS-ARM (RECTANGULAR METAL HOLDER) ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent and opaque liquids, also used to measure of liquid (cutback) asphalts and road oils at 60°C (140°F) and asphalt cements at 135°C (275°F) in the range of 30 to 6000 cSt, with certificate Require liquid bath depth of 230 mm, minimum sample volume 1 to 3 ml



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
363/1	1	0,003	0,6-3
363/2	2	0,01	2-10
363/3	3	0,03	6-30
363/4	4	0,1	20-100
363/5	5	0,3	60-300
363/6	6	1	200-1000
363/7	7	3	600-3000
363/8	8	10	2000-10000
363/9	9	30	6000-30000
363/10	10	100	20000-100000

GLASS CAPILLARY VISCOMETERS P/N 342/... 344/...

VISCOSITY

BS/IP/MSL MINIATURE SUSPENDED LEVEL VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 305 mm, minimum
sample volume 4 ml.

ACCESSORIES ON REQUEST 10-0342 VISCOMETER HOLDER Made of metal



P/N	SIZE	APPROX. CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
342/1	1	0,003	0,6-3
342/2	2	0,01	2-10
342/3	3	0,03	6-30
342/4	4	0,1	20-100
342/5	5	0,3	60-300
342/6	6	1	200-1000
342/7	7	3	600-3000

BS/IP/SL SUSPENDED LEVEL VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 250 mm, minimum
sample volume 11 ml.

ACCESSORIES ON REQUEST 10-0342 VISCOMETER HOLDER Made of metal



P/N	SIZE	APPROX. CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
344/1	1	0,01	3,5-10
344/1A	1A	0,03	6-30
344/2	2	0,1	20-100
344/2A	2A	0,3	60-300
344/3	3	1	200-1000
344/3A	3A	3	600-3000
344/4	4	10	2000-10000
344/4A	4A	30	6000-30000
342/5	5	100	20000-100000

GLASS CAPILLARY

VISCOSITY

VISCOMETERS P/N 346/... 348/... 354/...

BS/IP/SL(S) VISCOMETER

ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 230 mm, minimum
sample volume 10 ml.

ACCESSORIES ON REQUEST

10-0342 VISCOMETER HOLDER

Made of metal



P/N	SIZE	APPROX. CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
354/1	1	0,0008	1,05 minimum
354/2	2	0,003	2,1-3
354/3	3	0,01	3,8-10
354/4	4	0,03	6-30
354/5	5	0,1	20-100
354/6	6	0,3	60-300
354/7	7	1	200-1000
354/8	8	3	600-3000
354/9	9	10	2000-10000

BS/U/M MINIATURE U-TUBE VISCOMETER

ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 230 mm, minimum
sample volume 2 ml.



P/N	SIZE	APPROX. CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
346/M1	M1	0,001	0,2-1
346/M2	M2	0,005	1-5
346/M3	M3	0,015	3-15
346/M4	M4	0,04	8-40
346/M5	M5	0,1	20-100

BS/U-TUBE VISCOMETER

ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For transparent liquids, with certificate
Require liquid bath depth of 280 mm, minimum
sample volume 7 ml is sizes A to C, 12 ml in sizes D
to F, 23 ml in sizes G to H



P/N	SIZE	APPROX. CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
348/A	A	0,003	0,9-3
348/B	B	0,01	2-10
348/C	C	0,03	6-30
348/D	D	0,1	20-100
348/E	E	0,3	60-300
348/F	F	1	200-1000
348/G	G	3	600-3000
348/H	H	10	2000-10000

GLASS CAPILLARY VISCOMETERS P/N 351/... 361/...

VISCOSITY

BS/IP/RF U-TUBE REVERSE FLOW VISCOMETER ASTM D445 D446 IP 71 ISO 3104 ISO 3105

For opaque liquids, with certificate
Require liquid bath depth of 280 mm, sample
volume 7 ml.

ACCESSORIES ON REQUEST 10-0361 VISCOMETER HOLDER Made of rubber



P/N	SIZE	APPROX CONSTANT mm ² /s ² (cSt/s)	KINEMATIC VISCOSITY RANGE mm ² /s (cSt)
361/1	1	0,003	0,6-3
361/2	2	0,01	2-10
361/3	3	0,03	6-30
361/4	4	0,1	20-100
361/5	5	0,3	60-300
361/6	6	1	200-1000
361/7	7	3	600-3000
361/8	8	10	2000-10000
361/9	9	30	6000-30000
361/10	10	100	20000-100000
361/11	11	300	60000-300000

CANNON®-MANNING VACUUM VISCOMETER ASTM D2171

For measurement of viscosity of highly viscous
materials such as asphalt cement at 60°C (140°F).
Require liquid bath depth of 180 mm, minimum
sample volume 6 ml.

ACCESSORIES ON REQUEST 10-0351 VISCOMETER HOLDER Made of rubber



P/N	SIZE	VISCOSITY RANGE, poise	APPROX CONSTANT Poise/second at 300 mm Hg vacuum	
			Bulb B	Bulb C
351/4	4	0,036-0,8	0,002	0,0006
351/5	5	0,12-2,4	0,006	0,002
351/6	6	0,36-8	0,02	0,006
351/7	7	1,2-24	0,06	0,02
351/8	8	3,6-80	0,2	0,06
351/9	9	12-240	0,6	0,2
351/10	10	36-800	2	0,6
351/11	11	120-2400	6	2
351/12	12	360-8000	20	6
351/13	13	1200-24000	60	20
351/14	14	3600-80000	200	60

GLASS CAPILLARY VISCOMETERS P/N 355/... 357/... 359/...

VISCOSITY

CANNON®-MANNING VACUUM VISCOMETER (ROUND METAL HOLDER) ASTM D2171

For measurement of viscosity of highly viscous materials such as asphalt cement at 60°C (140°F). Require liquid bath depth of 180 mm, minimum sample volume 6 ml.

P/N	SIZE	VISCOSITY RANGE, poise	APPROX CONSTANT Poise/second at 300 mm Hg vacuum	
			Bulb B	Bulb C
355/4	4	0,036-0,8	0,002	0,0006
355/5	5	0,12-2,4	0,006	0,002
355/6	6	0,36-8	0,02	0,006
355/7	7	1,2-24	0,06	0,02
355/8	8	3,6-80	0,2	0,06
355/9	9	12-240	0,6	0,2
355/10	10	36-800	2	0,6
355/11	11	120-2400	6	2
355/12	12	360-8000	20	6
355/13	13	1200-24000	60	20
355/14	14	3600-80000	200	60

ASPHALT INSTITUTE VACUUM VISCOMETER ASTM D2171

For measurement of viscosity of highly viscous materials such as asphalt cement at 60°C (140°F). Require liquid bath depth of 180 mm, minimum sample volume 3 ml.

ACCESSORIES ON REQUEST 10-0351 VISCOMETER HOLDER Made of rubber



P/N	SIZE	VISCOSITY RANGE, poise	APPROX CONSTANT Poise/second at 300 mm Hg vacuum		
			at B	at C	at D
357/25	25	42-800	2	1	0,7
357/50	50	180-3200	8	4	3
357/100	100	600-12800	32	16	10
357/200	200	2400-52000	128	64	40
357/400	400R	9600-1400000	500	250	160
357/800	800R	38000-5800000	2000	1000	640

ASPHALT INSTITUTE VACUUM VISCOMETER (ROUND METAL HOLDER) ASTM D2171

For measurement of viscosity of highly viscous materials such as asphalt cement at 60°C (140°F). Require liquid bath depth of 180 mm, minimum sample volume 3 ml.

P/N	SIZE	VISCOSITY RANGE, poise	APPROX CONSTANT Poise/second at 300 mm Hg vacuum		
			at B	at C	at D
359/25	25	42-800	2	1	0,7
359/50	50	180-3200	8	4	3
359/100	100	600-12800	32	16	10
359/200	200	2400-52000	128	64	40
359/400	400R	9600-1400000	500	250	160
359/800	800R	38000-5800000	2000	1000	640

GLASS CAPILLARY VISCOMETERS P/N 365/...

VISCOSITY

CANNON® MODIFIED KOPPERS VACUUM VISCOMETER ASTM D2171

For measurement of viscosity of asphalt at 60°C (140°F).
Require liquid bath depth of 178 mm, minimum sample volume 2 ml.



P/N	SIZE	VISCOSITY RANGE, poise	APPROX CONSTANT Poise/second at 300 mm Hg vacuum		
			at B	at C	at D
365/25	25	42-800	2	1	0,7
365/50	50	180-3200	8	4	3
365/100	100	600-12800	32	16	10
365/200	200	2400-52000	128	64	40
365/400	400	9600-200000	500	250	160