psl rheotek

UKAS CALIBRATION
0247

# Precision Glass Capillary Viscometers

## ASTM Ubbelohde

**Suitable for measuring transparent liquids. High precision & easy to use. Nominal overall length 283 mm; approximate sample volume 18 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1643/01 | O | 0.001 | 0.3 to 1 |
| 1643/02 | OC | 0.003 | 0.6 to 3 |
| 1643/03 | OB | 0.005 | 1 to 5 |
| 1643/04 | 1 | 0.01 | 2 to 10 |
| 1643/05 | 1C | 0.03 | 6 to 30 |
| 1643/06 | 1B | 0.05 | 10 to 50 |
| 1643/07 | 2 | 0.1 | 20 to 100 |
| 1643/08 | 2C | 0.3 | 60 to 300 |
| 1643/09 | 2B | 0.5 | 100 to 500 |
| 1643/10 | 3 | 1.0 | 200 to 1,000 |
| 1643/11 | 3C | 3.0 | 600 to 3,000 |
| 1643/12 | 3B | 5.0 | 1,000 to 5,000 |
| 1643/13 | 4 | 10 | 2,000 to 10,000 |
| 1643/14 | 4C | 30 | 6,000 to 30,000 |
| 1643/15 | 4B | 50 | 10,000 to 50,000 |
| 1643/16 | 5 | 100 | 20,000 to 100,000 |

## U-Tube Reverse Flow Viscometers

**Suitable for measuring opaque liquids. Type BS/IP/RF. Nominal overall length 275 mm; approximate sample volume 12-25 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1637/01 | 1 | 0.003 | 0.6 to 3 |
| 1637/02 | 2 | 0.01 | 2 to 10 |
| 1637/03 | 3 | 0.03 | 6 to 30 |
| 1637/04 | 4 | 0.1 | 20 to 100 |
| 1637/05 | 5 | 0.3 | 60 to 300 |
| 1637/06 | 6 | 1.0 | 200 to 1,000 |
| 1637/07 | 7 | 3.0 | 600 to 3,000 |
| 1637/08 | 8 | 10 | 2,000 to 10,000 |
| 1637/09 | 9 | 30 | 6,000 to 30,000 |
| 1637/10 | 10 | 100 | 20,000 to 100,000 |
| 1637/11 | 11 | 300 | 60,000 to 300,000 |

## Cannon-Fenske Routine

**Suitable for measuring transparent liquids. Calibration data stated at 40 & 100°C. Nominal overall length 250 mm; approximate sample volume 7 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1634/01 | 25 | 0.002 | 0.5 to 2 |
| 1634/02 | 50 | 0.004 | 0.8 to 4 |
| 1634/03 | 75 | 0.008 | 1.6 to 8 |
| 1634/04 | 100 | 0.015 | 3 to 15 |
| 1634/05 | 150 | 0.035 | 7 to 35 |
| 1634/06 | 200 | 0.1 | 20 to 100 |
| 1634/07 | 300 | 0.25 | 50 to 250 |
| 1634/08 | 350 | 0.5 | 100 to 500 |
| 1634/09 | 400 | 1.2 | 240 to 1,200 |
| 1634/10 | 450 | 2.5 | 500 to 2,500 |
| 1634/11 | 500 | 8 | 1,600 to 8,000 |
| 1634/12 | 600 | 20 | 4,000 to 20,000 |
| 1634/13 | 650 | 50 | 10,000 to 50,000 |
| 1634/14 | 700 | 100 | 20,000 to 100,000 |

## Cannon-Fenske Opaque

**Suitable for measuring opaque liquids. Calibration data stated at 40 & 100°C. Nominal overall length 295 mm; approximate sample volume 12 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1641/01 | 25 | 0.002 | 0.4 to 2 |
| 1641/02 | 50 | 0.004 | 0.8 to 4 |
| 1641/03 | 75 | 0.008 | 1.6 to 8 |
| 1641/04 | 100 | 0.015 | 3 to 15 |
| 1641/05 | 150 | 0.035 | 7 to 35 |
| 1641/06 | 200 | 0.1 | 20 to 100 |
| 1641/07 | 300 | 0.25 | 50 to 250 |
| 1641/08 | 350 | 0.5 | 100 to 500 |
| 1641/09 | 400 | 1.2 | 240 to 1,200 |
| 1641/10 | 450 | 2.5 | 500 to 2,500 |
| 1641/11 | 500 | 8 | 1,600 to 8,000 |
| 1641/12 | 600 | 20 | 4,000 to 20,000 |
| 1641/13 | 650 | 50 | 10,000 to 50,000 |
| 1641/14 | 700 | 100 | 20,000 to 100,000 |

**PSL Rheotek offers a comprehensive range of precision calibrated glass capillary viscometers. Viscometers are made by our experienced glass blowers from high grade borosilicate glass tubing. PSL Rheotek viscometers are used by refinery, testing and research laboratories throughout the world and enjoy a high reputation for quality workmanship and accuracy of calibration.**



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## Cannon-Ubbelohde Viscometers

**Suitable for transparent liquids. Nominal overall length 335mm, approximate sample size 11 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1647/01 | 25 | 0.002 | 0.5 to 2 |
| 1647/02 | 50 | 0.004 | 0.8 to 4.0 |
| 1647/03 | 75 | 0.008 | 1.6 to 8.0 |
| 1647/04 | 100 | 0.015 | 3 to 15 |
| 1647/05 | 150 | 0.035 | 7 to 35 |
| 1647/06 | 200 | 0.1 | 20 to 100 |
| 1647/07 | 300 | 0.25 | 50 to 250 |
| 1647/08 | 350 | 0.5 | 100 to 500 |
| 1647/09 | 400 | 1.2 | 240 to 1,200 |
| 1647/10 | 450 | 2.5 | 500 to 2,500 |
| 1647/11 | 500 | 8.0 | 1,600 to 8,000 |
| 1647/12 | 600 | 20 | 4,000 to 20,000 |
| 1647/13 | 650 | 45 | 9,000 to 45,000 |
| 1647/14 | 700 | 100 | 20,000 to 100,000 |

## Suspended-Level Viscometers

**Suitable for measuring transparent liquids. Type BS/IP/SL – Nominal overall length 330mm; approximate sample volume 22-40 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1625/01 | 1 | 0.01 | 3.5 to 10 |
| 1625/02 | 1A | 0.03 | 6 to 30 |
| 1625/03 | 2 | 0.1 | 20 to 100 |
| 1625/04 | 2A | 0.3 | 60 to 300 |
| 1625/05 | 3 | 1.0 | 200 to 1,000 |
| 1625/06 | 3A | 3.0 | 600 to 3,000 |
| 1625/07 | 4 | 10 | 2,000 to 10,000 |
| 1625/08 | 4A | 30 | 6,000 to 30,000 |
| 1625/09 | 5 | 100 | 20,000 to 100,000 |

## Suspended-Level Viscometers, Shortened Form

**Suitable for measuring transparent liquids. Type BS/IP/SL – Nominal overall length 250mm; approximate sample volume 10 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1628/01 | 1 | 0.0008 | 1.05 min |
| 1628/02 | 2 | 0.003 | 2.1 to 3 |
| 1628/03 | 3 | 0.01 | 3.8 to 10 |
| 1628/04 | 4 | 0.03 | 6 to 30 |
| 1628/05 | 5 | 0.10 | 20 to 100 |
| 1628/06 | 6 | 0.3 | 60 to 300 |
| 1628/07 | 7 | 1.0 | 200 to 1,000 |
| 1628/08 | 8 | 3.0 | 600 to 3,000 |
| 1628/09 | 9 | 10 | 2,000 to 10,000 |

## Miniature Suspended-Level Viscometers

**Suitable for measuring transparent liquids. Type BS/IP/MSL – Nominal overall length 345mm; approximate sample volume 4 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1631/01 | 1 | 0.003 | 0.6 to 3 |
| 1631/02 | 2 | 0.01 | 2 to 10 |
| 1631/03 | 3 | 0.03 | 6 to 30 |
| 1631/04 | 4 | 0.1 | 20 to 100 |
| 1631/05 | 5 | 0.3 | 60 to 300 |
| 1635/06 | 6 | 1.0 | 200 to 1,000 |
| 1635/07 | 7 | 3.0 | 600 to 3,000 |

**Viscometer calibration is performed on-site by our UKAS accredited ISO 17025 calibration laboratory. The PSL Calibration Laboratory maintains a master viscometer scale in accordance with ASTM D2162. All calibration data us directly traceable to international standards.**



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## Cannon-Manning Vacuum Capillary Viscometer

**Suitable for measuring the dynamic viscosity of bituminous binders. Nominal overall length 245 mm. Calibrated in accordance with EN 12596 and ASTM D2171.**

| Part No. | Size | Constant | Range (Pa.s) |
|---|---|---|---|
| 1676/01 | 4 | 0.0002 | 0.0036 to 0.08 |
| 1676/02 | 5 | 0.0006 | 0.012 to 0.24 |
| 1676/03 | 6 | 0.002 | 0.036 to 0.8 |
| 1676/04 | 7 | 0.01 | 0.12 to 2.4 |
| 1676/05 | 8 | 0.02 | 0.36 to 8.0 |
| 1676/06 | 9 | 0.06 | 1.2 to 24 |
| 1676/07 | 10 | 0.2 | 3.6 to 80 |
| 1676/08 | 11 | 0.6 | 12 to 240 |
| 1676/09 | 12 | 2.0 | 36 to 800 |
| 1676/10 | 13 | 6.0 | 120 to 2400 |
| 1676/11 | 14 | 20.0 | 360 to 8000 |
| Note: | Nominal constant for bulb "B" is shown for illustration purposes. | | |

## Asphalt Institute Vacuum Capillary Viscometer

**Suitable for measuring the dynamic viscosity of bituminous binders. Nominal overall length 245 mm. Calibrated in accordance with EN 12596 and ASTM D2171.**

| Part No. | Size | Constant | Range (Pa.s) |
|---|---|---|---|
| 1677/01 | 25 | 0.2 | 4.2 to 80 |
| 1677/02 | 50 | 0.8 | 18 to 320 |
| 1677/03 | 100 | 3.2 | 60 to 1280 |
| 1677/04 | 200 | 12.8 | 240 to 5200 |
| 1677/05 | 400 | 50 | 960 to 20000 |
| 1677/06 | 400Rc | 50 | 960 to 140000 |
| 1677/07 | 800Rc | 200 | 3800 to 580000 |
| Note: | Nominal constant for bulb "B" is shown for illustration purposes. | | |

## Modified Koppers Vacuum Capillary Viscometer

**Suitable for measuring the dynamic viscosity of bituminous binders. Nominal overall length 270 mm. Calibrated in accordance with EN 12596 and ASTM D2171.**

| Part No. | Size | Constant | Range (Pa.s) |
|---|---|---|---|
| 1678/01 | 25 | 0.2 | 4.2 to 80 |
| 1678/02 | 50 | 0.8 | 18 to 320 |
| 1678/03 | 100 | 3.2 | 60 to 1280 |
| 1678/04 | 200 | 12.8 | 240 to 5200 |
| 1678/05 | 400 | 50 | 960 to 20000 |
| Note: | Nominal constant for bulb "B" is shown for illustration purposes. | | |

## Vacuum System for bituminous binders

**Complete with vacuum controller, vacuum pump, valve control module and glass bottle.**

| Part No. | Description |
|---|---|
| 20700/01 | Bitumen Vacuum System 240V / 50Hz |
| 20700/02 | Bitumen Vacuum System 110V / 60Hz |

**PSL Rheotek bitumen viscometers are suitable for measuring a wide range of liquid asphalts, bituminous binders and asphalt cements. For vacuum capillary viscometers, a bitumen vacuum system is available. Other accessories include viscometer bath, silicone bath oil and viscosity oil standards.**



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## U-Tube Viscometers

**Suitable for measuring transparent liquids. Type BS/U - Nominal overall length 300 mm, approximate sample volume 13-40 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1619/00 | O | 0.001 | 0.3 to 1 |
| 1619/01 | A | 0.003 | 0.9 to 3 |
| 1619/02 | B | 0.01 | 2.0 to 10 |
| 1619/03 | C | 0.03 | 6 to 30 |
| 1619/04 | D | 0.1 | 20 to 100 |
| 1619/05 | E | 0.3 | 60 to 300 |
| 1619/06 | F | 1.0 | 200 to 1,000 |
| 1619/07 | G | 3.0 | 600 to 3,000 |
| 1619/08 | H | 10 | 2,000 to 10,000 |

## Cannon Manning Semi-Micro Viscometers

**Type ASTM – Suitable for transparent liquids. Nominal overall length 275 mm; approximate sample volume 1 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1659/01 | 25 | 0.002 | 0.4 to 2.0 |
| 1659/02 | 50 | 0.004 | 0.8 to 4.0 |
| 1659/03 | 75 | 0.008 | 1.6 to 8.0 |
| 1659/04 | 100 | 0.015 | 3 to 15 |
| 1659/05 | 150 | 0.035 | 7 to 35 |
| 1659/06 | 200 | 0.1 | 20 to 100 |
| 1659/07 | 300 | 0.25 | 50 to 250 |
| 1659/08 | 350 | 0.5 | 100 to 500 |
| 1659/09 | 400 | 1.2 | 240 to 1,200 |
| 1659/10 | 450 | 2.5 | 500 to 2,500 |
| 1659/11 | 500 | 8.0 | 1,600 to 8,000 |
| 1659/12 | 600 | 20 | 4,000 to 20,000 |

## Miniature U-Tube Viscometers

**Suitable for measuring transparent liquids. Type BS/U/M - Nominal overall length 250 mm, approximate sample volume 4 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1622/01 | M1 | 0.001 | 0.2 to 1 |
| 1622/02 | M2 | 0.005 | 1 to 5 |
| 1622/03 | M3 | 0.015 | 3 to 15 |
| 1622/04 | M4 | 0.04 | 8 to 40 |
| 1622/05 | M5 | 0.1 | 20 to 100 |

## Zeitfuchs Cross-Arm Viscometers

**Type ASTM – Nominal overall length 305 mm; approximate sample volume up to 3 ml. Complete with ISO 17025 certificate of calibration.**

| Part No. | Size | Constant | Range (mm²/s) |
|---|---|---|---|
| 1663/01 | 1 | 0.003 | 0.6 to 3 |
| 1663/02 | 2 | 0.01 | 2 to 10 |
| 1663/03 | 3 | 0.03 | 6 to 30 |
| 1663/04 | 4 | 0.1 | 20 to 100 |
| 1663/05 | 5 | 0.3 | 60 to 300 |
| 1663/06 | 6 | 1.0 | 200 to 1,000 |
| 1663/07 | 7 | 3.0 | 600 to 3,000 |
| 1663/08 | 8 | 10 | 2,000 to 10,000 |
| 1663/09 | 9 | 30 | 6,000 to 30,000 |
| 1663/10 | 10 | 100 | 20,000 to 100,000 |

**PSL Rheotek glass capillary viscometers are suitable for a wide range of applications. Applicable petroleum testing methods include ASTM D445, D446, D2162, D2170, D2171, ISO 3104 & ISO3105. Other applications include polymers, cellulose, blood and plasma.**



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## Viscometer Baths and Chillers

**TCB-7 Viscometer Bath**
Part No. 20402

**Visibility Bath**
Part No. 20405

**Mini Chiller**
Part No. RP00023 (230v 50/60Hz)
RP00024 (115v 60Hz)

## Digital Thermometers

**F100 Precision Digital Thermometer**
Part No. F100/A

**TT3 Precision Digital Thermometer**
Part No. TT3/A

## Metal Viscometer Holders and Bench Stand

| Part No. | Specifications |
|---|---|
| 1850/A1 | Universal Viscometer Holder |
| 1818/A1 | U-Tube Viscometer Holder Size O to F |
| 1818/A2 | U-Tube Viscometer Holder Size G & H |
| 1821/A1 | Min. U-Tube Viscometer Holder Size M1 to M4 |
| 1824/A1 | Suspended-Level Viscometer Holder Size 1 to 4 |
| 1824/A2 | Suspended-Level Viscometer Holder Size 4A & 5 |
| 1827/A1 | Suspended-Level Short Form Viscometer Holder |
| 1833/A1 | Cannon-Fenske Routine Viscometer Holder |
| 1836/A1 | U-Tube Reverse Flow Viscometer Holder |
| 1840/A1 | Cannon-Fenske Opaque Viscometer Holder |
| 1842/A1 | Ubbelohde Viscometer Holder Size 0 to 4 |
| 1842/A2 | Ubbelohde Viscometer Holder Size 4C to 5 |
| 1863/A1 | Zeitfuchs Viscometer Holder |
| 1876/A1 | Cannon-Manning Vacuum Viscometer Holder |
| 1877/A1 | Asphalt Institute Vacuum Viscometer Holder |
| 1878/A1 | Modified Koppers Vacuum Viscometer Holder |
| 1890/A1 | Master Ubbelohde Viscometer holder |

**Viscometer Bench Stand**
Part No. 20430

**Metal Viscometer Holder**
Part No. See above

## Plastic and Rubber Viscometer Holders

| Part No. | Specifications |
|---|---|
| 1934/A1 | Plastic holder for CF Routine & Opaque |
| 1943/A1 | Plastic holder for ASTM Ubbelohde (sizes O to 4) |

| Part No. | Specifications |
|---|---|
| 1976/A1 | Rubber holder for Cannon-Manning Vacuum |
| 1977/A1 | Rubber holder for Asphalt Institute Vacuum |

**Plastic Viscometer Holder**
Part No. See above



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