



Viscol 10 Series

Automatic Kinematic Viscometer





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Viscosity is defined as the rate of a fluid's internal resistance to the force that is required to flow. Intermolecular force, molecular mass and temperature of a fluid is considered as the three main factors effecting the viscosity. Fluids such as water, air, oil etc. that have directly proportional flow rate with friction resistance are called as Newtonian fluids.

Best method to measure viscosity of Newtonian fluids is by using capillary viscometers. With capillary viscometers, viscosity is determined based on the flow time of a fluid which is kept at a specific temperature inside a capillary with known diameter and length.

Viscol-10 Series, fully-automatic kinematic viscometers, equipped by the latest temperature control, detector, chronometer and washing specifications with different models for oil, fuel, bitumen, polymer, paper, food and similar industrial demands. Viscol-10 Series viscometers provide the most reliable results for research, development and quality control practices without any user intervention.

General Specifications

- Adjustable bath temperature between -30°C to 170°C
- Sensitive temperature control ($\pm 0.001^{\circ}\text{C}$)
- Flow detection sensitivity of 0.001 seconds
- Built-in rapid-cooling unit
- Preheating unit for solid and heavy samples
- Analysis capacity from 0,5 cSt to 25.000 cSt
- Low solvent consumption and waste output
- Fully-automatic measuring, washing and drying functions
- Built-in single and dual solvent washing function
- Windows-based integrated touch-screen IPC
- USB data transfer
- Leakage and high temperature warning system
- Benchtop, easy-to-operate, ergonomic structure





Viscol 10A

Oil & Fuel Viscometer

**ASTM D445, ASTM D446,
ISO 3104, ISO 3105, IP 71, DIN 51562**

Viscol 10A, developed to automatically measure kinematic viscosity of oils and fuels at 40°C and 100°C in a single high precision bath with all necessary components including rapid cooling unit.

Areas of Use

- Mineral and Base Oils
- Used and Waste Oils
- Light and Heavy Fuels
- Crude Oil
- Marine Fuels

Technical Specifications

Viscosity Measurement Range	0.5 - 25000 mm ² /s (cSt)
Flow Time Detection Sensitivity	0,001 s
Temperature Range	From ambient to 130°C
Temperature Sensitivity	0,001°C
Sample and Solvent Amount	12 ml sample - 10 ml solvent/test
Dual Solvent Function	Standard
User Interface	Touch-Screen Windows IPC
Operating Conditions	10°C - 35°C
Dimensions (WxLxH)	300x500x800 mm
Weight	40 kg
Power Supply	110 - 240 VAC - 50/60 Hz

Viscol 10P

Plastic/Polymer Viscometer

**ASTM D2857, ASTM D789,
ASTM D4603, ASTM D1243,
ASTM D1795, ASTM D4243,
ASTM D871, ISO 1628, ISO 307,
ISO 5351, IEC 60450, TAPPI 230**

Viscol 10P, developed with acid resistive teflon and glass components for various polymer and plastic applications to measure viscosity values between 10°C - 140°C without any user intervention.

Relative, specific, reduced and intrinsic viscosity values

Areas of Use

- Plastic Applications
- Polymer Applications
- Paper / Cellulose



Technical Specifications

Viscosity Measurement Range	0.5 - 25000 mm ² /s (cSt)
Flow Time Detection Sensitivity	0,001 s
Temperature Range	10°C - 140°C
Temperature Sensitivity	0,001°C
Sample and Solvent Amount	12 ml sample - 10 ml solvent/test
Dual Solvent Function	Standard
User Interface	Touch-Screen Windows IPC
Operating Conditions	10°C - 35°C
Dimensions (WxLxH)	300x500x800 mm
Weight	40 kg
Power Supply	110 - 240 VAC - 50/60 Hz

Viscol 10B

Asphalt/Bitumen Viscometer

**ASTM D445/D446, ASTM D2170,
ISO 3104, ISO 3105, IP 71, DIN 51562**

Viscol 10B is suitable for viscosity measurements of heavy samples as asphalt, bitumen and etc. up to 170°C with its integrated and external preheating options.

Areas of Use

- Mineral and Base Oils
- Used and Waste Oils
- Light and Heavy Fuels
- Crude Oil
- Marine Fuels
- Asphalt/Bitumen



Technical Specifications

Viscosity Measurement Range	0.5 - 25000 mm ² /s (cSt)
Flow Time Detection Sensitivity	0,001 s
Temperature Range	From ambient to 170°C
Temperature Sensitivity	0,001°C
Sample and Solvent Amount	12 ml sample - 10 ml solvent/test
Dual Solvent Function	Standard
User Interface	Touch-Screen Windows IPC
Operating Conditions	10°C - 35°C
Dimensions (WxLxH)	300x500x800 mm
Weight	40 kg
Power Supply	110 - 240 VAC - 50/60 Hz

Viscol 10J

Low Temperature Viscometer

**ASTM D445, ASTM D446,
ISO 3104, ISO 3105,**

Viscol 10J is suitable for sensitive viscosity measurements down to -30°C for jet fuels and similar applications.

Special BKS washing and drying system

Areas of use

- Jet fuels
- Transmission oils
- Hydraulic oils

Technical Specifications

Viscosity Measurement Range	0.5 - 25000 mm ² /s (cSt)
Flow Time Detection Sensitivity	0,001 s
Temperature Range	-30°C - 130°C
Temperature Sensitivity	0,001°C
Sample and Solvent Amount	12 ml sample - 10 ml solvent/test
Dual Solvent Function	Standard
User Interface	Touch-Screen Windows IPC
Operating Conditions	10°C - 35°C
Dimensions (WxLxH)	300x500x800 mm
Weight	40 kg
Power Supply	110 - 240 VAC - 50/60 Hz



Options

- Preheating unit for intensive and solid samples
- Cooling unit for below ambient applications
- Up to 170°C for high temperature applications

Replacement Parts & Consumables

- Multi-folds viscometer capillary tubes
- Certified viscosity reference standards
- Silicon bath oil
- Sample containers PE, glass and metal
- Wash solvent

Standards

		Viscol 10A	Viscol 10P	Viscol 10B	Viscol 10J
ASTM D445	Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)	✓	✓	✓	✓
ASTM D446	Standard Specifications and Operating Instructions for Glass Capillary Kinematic Viscometers	✓	✓	✓	✓
ASTM D789	Standard Test Method for Determination of Relative Viscosity of Concentrated Polyamide (PA) Solutions		✓		
ASTM D871	Standard Test Methods of Testing Cellulose Acetate		✓		
ASTM D1243	Standard Test Method for Dilute Solution Viscosity of Vinyl Chloride Polymers		✓		
ASTM D1601	Standard Test Method for Dilute Solution Viscosity of Ethylene Polymers		✓		
ASTM D1795	Standard Test Method for Intrinsic Viscosity of Cellulose		✓		
ASTM D2170	Standard Test Method for Kinematic Viscosity of Asphalts (Bitumens)	✓		✓	
ASTM D2857	Standard Practice for Dilute Solution Viscosity of Polymers		✓		
ASTM D4243	Standard Test Method for Measurement of Average Viscometric Degree of Polymerization of New and Aged Electrical Papers and Boards		✓		
ASTM D4603	Standard Test Method for Determining Inherent Viscosity of Poly(Ethylene Terephthalate) (PET) by Glass Capillary Viscometer		✓		
ISO 307	Plastics -- Polyamides -- Determination of viscosity number		✓		
ISO 1628	Plastic -- Determination of the viscosity of polymers in dilute solution using capillary viscometers		✓		
ISO 3104	Petroleum products -- Transparent and opaque liquids -- Determination of kinematic viscosity and calculation of dynamic viscosity	✓	✓	✓	✓
ISO 5351	Pulps -- Determination of limiting viscosity number in cupri-ethylenediamine (CED) solution		✓		
IP 71	Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity	✓	✓	✓	
TAPPI 230	Viscosity of polp (capillary viscometer method)		✓		
IEC 60450	Measurement of the average viscometric degree of polymerization of new and aged cellulosic electrically insulating materials		✓		
DIN 51562	Viscometry - Measurement of kinematic viscosity by means of the Ubbelohde viscometer	✓	✓	✓	✓



BASE & MINERAL OILS

Oil viscosity and automatic viscosity index (VI) in accordance to ASTM D445



POLYMER

Determining all relative, specific and other values in the range of 20°C-140°C suitable for Polymer applications



LIQUID FUELS

Calculating viscosity values of all heavy and light liquid fuels up to 150°C in accordance with the related standards



PAPER/CELLULOSE

Determining viscosities of paper and paper pulp in accordance with ISO and TAPPI standards



IN-SERVICE-OIL ANALYSIS

Determining viscosity values of in-service-oils. Used in machinery predictive maintenance techniques



CRUDE OIL

Determining the viscosities of crude oil samples at low and high temperatures



ASPHALT/BITUMEN

Calculating the viscosity values of asphalt and bitumen samples at high temperature

