

KINEMATIC VISCOSITY TESTING



Kinematic Viscosity Testing

Kinematic viscosity is one of the most critical physical properties of petroleum products and lubricants. It defines how a fluid flows under gravity at a controlled temperature, directly influencing pumpability, lubrication film formation, fuel atomization, and energy efficiency across engines, hydraulic systems, and industrial machinery. Accurate kinematic viscosity measurement is a mandatory quality control parameter for virtually every category of petroleum product.

Torontech provides the most comprehensive range of kinematic viscosity testers available — from manual and semi-automatic systems for entry-level laboratory use to fully automatic single-bath and dual-bath instruments for high-throughput testing environments. Every Torontech kinematic viscosity tester is engineered for precision, repeatability, and compliance with ASTM D445 and related international standards.

APPLICATIONS

Application

Kinematic viscosity testing is required across the full spectrum of petroleum and lubricant products:

- Engine oils and lubricants: Viscosity grade verification (SAE J300, ACEA) and quality control throughout production and blending.
- Hydraulic fluids: ISO viscosity grade classification and conformance testing for hydraulic system compatibility.
- Diesel and fuel oils: Kinematic viscosity at 40°C ensures proper atomization and injector performance; kinematic viscosity at high temperature affects fuel system deposits.
- Transformer and insulating oils: Low viscosity requirements for electrical cooling systems are verified by kinematic viscosity tester.
- Aviation turbine oils: Strict kinematic viscosity limits at both high and low temperatures are mandatory for aviation safety compliance.

- Base oils and process oils: Viscosity is the primary classification parameter for base oil grades used in lubricant formulation.
- Low-temperature applications: Low temperature kinematic viscosity testing characterizes cold-weather pumpability of engine oils, gear oils, and arctic-grade lubricants.

FEATURES

Why Choose Torontech's Series for Your Kinematic Viscosity Testing?

Torontech's kinematic viscosity tester range is the most complete available, offering a solution for every laboratory scale and automation requirement:

- Full Automation Range: From manual kinematic viscosity baths for flexible, operator-controlled testing to fully automatic kinematic viscosity testers with automated sample loading, timing, and reporting — Torontech covers every throughput level.
- Dual-Bath Productivity: The dual-bath fully automatic kinematic viscosity tester allows simultaneous testing at two different temperatures, doubling throughput for busy petroleum QC laboratories.
- Low Temperature Capability: Torontech's dedicated low temperature kinematic viscosity tester extends measurement capability to the sub-zero temperatures required for cold-weather lubricant characterization per ASTM D445 at low temperature conditions.
- ASTM D445 Compliance: All instruments are designed and validated to meet the requirements of ASTM D445 (Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids), the globally recognized standard for petroleum product viscosity measurement.
- Precision Temperature Control: Accurate bath temperature control is fundamental to kinematic viscosity measurement accuracy. Torontech's instruments deliver temperature stability to $\pm 0.01^{\circ}\text{C}$ or better, ensuring results within method precision limits.
- Wide Viscosity Range: Torontech's kinematic viscosity testers accommodate a wide range of petroleum fluids, from light distillates to heavy gear oils and residual fuels.



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