

POUR POINT AND CLOUD POINT TESTING



Pour Point and Cloud Point Testing

Pour point and cloud point are the two most important low-temperature performance indicators for petroleum products, lubricants, and fuels. The cloud point marks the temperature at which dissolved wax crystals first appear in a cooling petroleum liquid, while the pour point defines the lowest temperature at which the product will still flow — critical parameters for cold-weather operability, storage, and transportation.

Accurate pour point and cloud point determination are mandatory for diesel fuels, lubricating oils, base oils, hydraulic fluids, and fuel oils intended for use in cold climates. Torontech offers both metal bath and fully automatic pour and cloud point testers, providing laboratories with a choice between established manual/semi-automatic approaches and fully automated, unattended testing.

APPLICATIONS

Application

Pour point and cloud point testing is applied across a wide range of petroleum products:

- Diesel fuel: Cloud point is a primary cold filter plugging risk indicator; pour point determines minimum storage and operability temperature for diesel in cold climates.
- Lubricating oils and engine oils: Pour point testing ensures oil will flow to the pump on cold starts; SAE low-temperature viscosity grades are correlated with pour point.
- Base oils: Pour point and cloud point characterize the wax content and cold-flow behavior of paraffinic, naphthenic, and synthetic base stocks.
- Hydraulic fluids: Pour point verification ensures hydraulic systems remain operational in cold environments, critical for construction, mining, and agricultural equipment.

- Fuel oils and heating oils: Pour point is specified to ensure fuel delivery and pumping reliability at low ambient temperatures.
- Aviation turbine fuels: Cloud point and freezing point data together define the cold soak performance of jet fuels at high-altitude temperatures.
- Crude oil: Pour point of crude oil determines pipeline operability and the need for pour point depressant additives in long-distance transportation.

FEATURES

Why Choose Torontech's Series for Your Pour Point and Cloud Point Testing?

Torontech's pour and cloud point testing instruments are designed for reliable, accurate low-temperature petroleum analysis:

- Dual Instrument Options: The metal bath pour and cloud point tester provides a robust, proven platform suitable for laboratories requiring method flexibility and manual control; the fully automatic tester eliminates observer subjectivity with automated cooling, optical detection, and result recording.
- Precise Cooling Control: Accurate temperature step-down control is critical for pour point and cloud point measurement accuracy. Torontech's instruments maintain the precise cooling rates and observation intervals specified by ASTM D97 (pour point) and ASTM D2500 (cloud point).
- Simultaneous Multi-Parameter Testing: Both pour point and cloud point can be determined on the same instrument, streamlining testing and reducing sample volume requirements.
- Optical Cloud Point Detection: The fully automatic tester uses optical sensors to objectively detect wax crystal formation at the cloud point, eliminating the visual judgment variability inherent in manual observation.
- Wide Temperature Range: Torontech's instruments cover the full range of pour point and cloud point values encountered in petroleum products, from tropical base oils to arctic-grade lubricants and cold-climate diesel fuels.



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