



TORONTECH



POUR POINT & SOLIDIFYING POINT TESTER

Pour Point & Solidifying Point Tester – ToronPP™ PSP 97

ToronPP™ PSP 97 is a fully automatic pour point and solidifying point tester designed and manufactured in accordance with ASTM D97, ASTM D2386, and equivalent international standards for the determination of low-temperature flow properties in lubricating oils and dark petroleum products.

The instrument features a 10-inch true-color LCD display, a high-precision temperature control system capable of regulating sample temperatures from +50°C to –70°C, automatic optical fiber photoelectric signal detection for pour point and solidifying point determination, and a fully compliant automatic pour point and cloud point tilt mechanism.

Two detection positions allow simultaneous measurement of two samples, while the high-performance compressor refrigeration system ensures extended service life and measurement repeatability (freezing point ±2°C, pour point ±3°C). Multiple LIMS-compatible communication interfaces (Ethernet, RS-232, USB) provide seamless integration into laboratory information management systems.

ToronPP™ PSP 97	ToronPP™ FPC 1000
✓ Pour point (ASTM D97)	✓ Pour point (ASTM D97)
✓ Solidifying point	✓ Freezing point (ASTM D2386)
✗ No CFPP function	✓ Cold filter point (ASTM D6371, EN 116)
→ For lubricating oils & dark petroleum	→ For diesel, aviation fuel, biodiesel
→ 800 × 650 × 650 mm	→ 800 × 600 × 650 mm

APPLICATIONS

Pour Point & Solidifying Point Tester - ToronPP™ PSP 97 Applications

- Pour point determination of lubricating base oils, formulated lubricants, and mineral oils per ASTM D97
- Solidifying point (freezing point) measurement of petroleum products and crude oil fractions
- Cloud point testing for petroleum products and wax-containing oils
- Low-temperature flow properties assessment for engine oils, hydraulic fluids, and gear oils
- Quality control in lubricant manufacturing, refinery operations, and petroleum product blending
- Research and development testing of pour point depressant additive performance
- Standardized dual-sample testing for high-throughput quality control laboratories



Standards & Compliance

- ASTM D97: Standard Test Method for Pour Point of Petroleum Products
- ASTM D2386: Standard Test Method for Freezing Point of Aviation Fuels

FEATURES

Pour Point & Solidifying Point Tester - ToronPP™ PSP 97 Key Features

- 10-inch true-color touch control LCD with a user-friendly human-machine interface for easy daily operation
- High-precision temperature control system capable of regulating sample temperature from +50°C to –70°C for comprehensive low-temperature petroleum testing
- Automatic optical fiber signal detection for high-accuracy, objective pour point and solidifying point determination with excellent repeatability
- Fully compliant automatic pour point and cloud point tilt mechanism per ASTM D97 standardized tilt procedure
- High-performance compressor refrigeration system with extended service life and sustained cooling capacity for reliable long-term operation
- Multiple testing modes for rapid detection and standard method compliance in diverse laboratory workflows
- Integrated fault diagnostics with real-time operational alerts for proactive maintenance and reduced downtime
- Expandable Cold Filter Plugging Point (CFPP) unit with simple and quick connection for added functionality
- Multiple communication interfaces (Ethernet, RS-232, USB) for LIMS system integration across various laboratory protocols
- Dual detection positions allow simultaneous measurement of two samples, improving throughput
- Measurement repeatability: freezing point $\pm 2^{\circ}\text{C}$, pour point $\pm 3^{\circ}\text{C}$

THEORY & METHOD

Theory and Method

The ToronPP™ PSP 97 determines pour point and solidifying point using a standardized tilt-observation method consistent with ASTM D97. The sample is loaded into a standardized test jar and cooled at a controlled rate by the high-performance compressor refrigeration system, which maintains precise temperature control from +50°C to –70°C with ±1°C measurement accuracy and 0.1°C resolution.

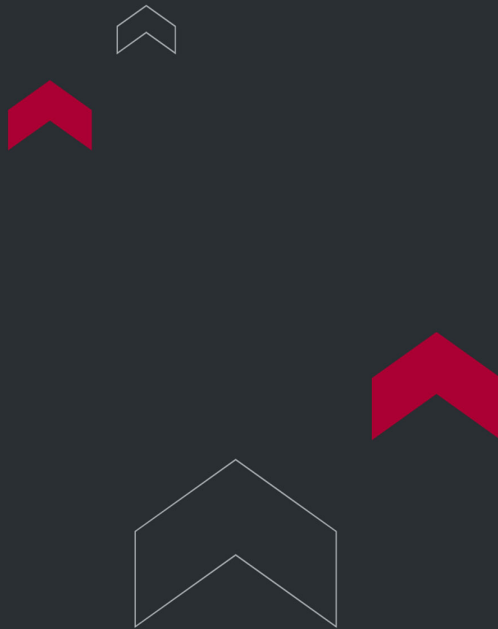
At each test temperature interval, the standardized automatic tilt mechanism tilts the test jar to determine whether the sample has ceased to flow — in full compliance with the ASTM D97 5-second tilt observation requirement. The pour point is reported as the lowest temperature at which the sample remains pourable. Solidifying point is determined as the temperature at which the sample surface no longer moves after tilting, detected by the automatic optical fiber photoelectric signal system. Two detection positions enable simultaneous testing of two samples, maximizing throughput without compromising method fidelity.

TECHNICAL SPECIFICATIONS

Pour Point & Solidifying Point Tester - ToronPP™ PSP 97 Technical Specifications

Parameter	Specification
Measuring Range	Room temperature to -70 °C
Measurement Accuracy	± 1 °C
Resolution	0.1 °C
Detection Positions	2 (can be measured simultaneously)

Parameter	Specification
Detection Method	Photoelectric
Repeatability	Freezing point: $\pm 2\text{ }^{\circ}\text{C}$; Pour point: $\pm 3\text{ }^{\circ}\text{C}$
Display	10-inch True Color LCD
Power Consumption	$\leq 1000\text{ W}$
Main Unit Size (W × D × H)	800 × 650 × 650 mm
Weight	80 kg
Communication	Ethernet, RS-232, USB
Voltage	AC 220 V $\pm 10\%$, 50 Hz $\pm 10\%$ (110V is also available)
Relative Humidity	< 80% RH
Ambient Temperature	5 – 40 $^{\circ}\text{C}$
Other Notes	No strong vibration, airflow, strong electromagnetic interference, or corrosive gases near instrument



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