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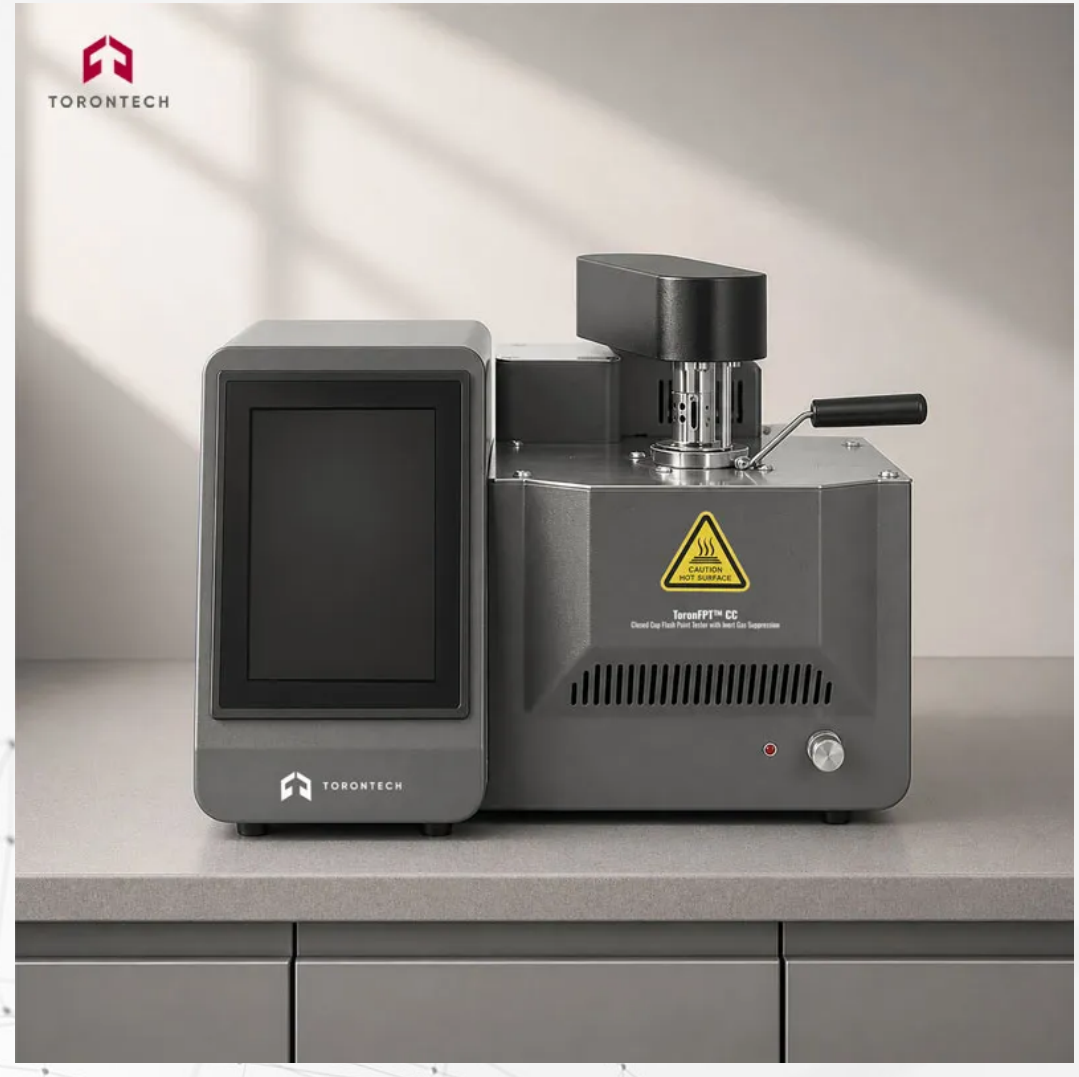


CLOSED CUP FLASH POINT TESTER WITH INERT GAS SUPPRESSION

Closed Cup Flash Point Tester with Inert Gas Suppression – ToronFPT™ CC

ToronFPT™ CC is an automatic closed cup flash point tester designed and manufactured in accordance with ASTM T261-2008 and ASTM D93 standards. The instrument features a high degree of automation, automatically opening the cover, automatically lifting, automatically controlling temperature, automatic ignition, automatic measurement, automatic printing, automatic flame detection and fire extinguishing, intelligent flame maintenance, and automatic forced cooling — providing a complete, safe, and repeatable closed cup flash point test cycle for petroleum products and flammable chemicals.

The ToronFPT™ CC closed cup flash point tester incorporates an inert gas spray fire extinguishing system for automatic fire suppression upon flash detection. It features a silicon nitride ignition head with automatic ignition capability, eliminating the need for manual gas gun operation and significantly extending ignition head service life through intelligent flame detection and automatic re-ignition.

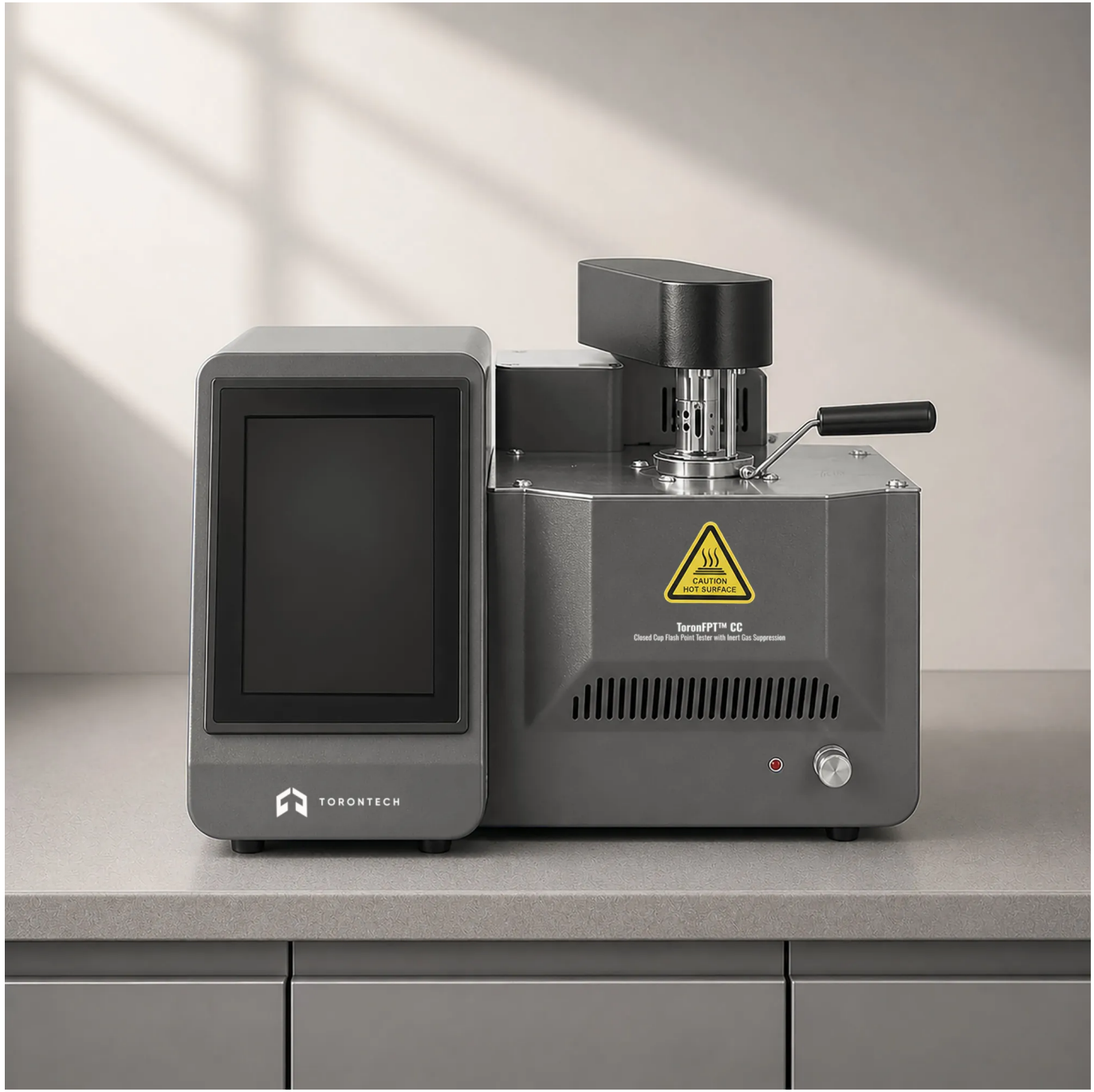
APPLICATIONS

Closed Cup Flash Point Tester with Inert Gas Suppression – ToronFPT™ CC Applications

The ToronFPT™ CC automatic closed cup flash point tester is used across petroleum product safety testing, quality control, and regulatory compliance:

- Petroleum distillates and fuel products: ASTM D93 closed cup flash point testing for diesel, kerosene, jet fuel, and heating oils
- Solvents and chemicals: flash point classification for workplace safety, storage, and transportation hazard labeling
- Paints, coatings, and varnishes: regulatory closed cup flash point testing for SDS compliance

- Lubricating oils and metalworking fluids: flash point safety verification for product specification and workplace safety programs
- Petroleum refinery and blending QC: closed cup flash point monitoring for process safety and product release
- Independent testing laboratories: ASTM D93-compliant flash point testing as a commercial petroleum and chemical testing service
- Regulatory compliance: GHS, DOT, and WHMIS flammable liquid hazard category classification


CAUTION
HOT SURFACE
ToronFPT™ CC
Closed Cup Flash Point Tester with Inert Gas Suppression
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Applicable Standards

The ToronFPT™ CC closed cup flash point tester is designed to support testing in compliance with the following international standards:

- ASTM D93: Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester

FEATURES

Closed Cup Flash Point Tester with Inert Gas Suppression – ToronFPT™ CC Key Features

The ToronFPT™ CC automatic closed cup flash point tester delivers a comprehensive feature set for accurate, safe, and fully automated closed cup flash point testing:

- 8-Inch Full HD Color LCD Touchscreen Interface: intuitive 8-inch color HD LCD touch screen interface with all-Chinese human-computer dialogue for straightforward operation and parameter management.
- Customizable Test Process Parameters: setting rate, stirring rate, ignition frequency, advance ignition temperature, and other parameters are fully customizable to accommodate different sample types and method requirements.
- Real-Time Temperature and Time Function Curve: accurate simulation tracking with real-time temperature and test time function curve display, with software misoperation modification prompts.
- Atmospheric Pressure Correction: built-in atmospheric pressure sensor automatically corrects flash point results for barometric pressure variation as required by ASTM D93.
- Fast Mode for Unfamiliar Samples: optional fast mode (10–15°C/min) enables quick estimation of flash point for unfamiliar samples before committing to a full-precision standard test.
- Electric and Gas Ignition — Free Switching: electric ignition and gas ignition can be freely switched for easy, convenient operation without hardware changes.

- Automatic Rotating Lift Arm: fully automatic rotating lift arm controls cover opening, detection, printing, and data output — making the entire closed cup flash point test process automatic.
- Fast Forced Cooling — Next Test in 10 Minutes: the forced cooling system rapidly cools the heating system, enabling the next flash point test to begin within 10 minutes.
- Intelligent Sample Cup Cooling Rack: intelligent sample cup cooling rack automatically starts and stops based on sample cup temperature for efficient inter-test cooling management.
- Silicon Nitride Ignition Head with Auto Re-Ignition: silicon nitride automatic ignition head requires no manual gas gun operation. Intelligent flame detection and automatic re-ignition significantly extends ignition head service life.
- Hidden Lift Type Dual Fire Extinguisher: instrument actively detects open fire and automatically extinguishes it within two seconds by spraying inert gas through the hidden lift type dual fire extinguisher.
- LIMS Connectivity via USB Interface: can be connected to LIMS system through USB interface for laboratory data management integration.

THEORY & METHOD

Theory and Method

The ToronFPT™ CC measures flash point using the Pensky-Martens Closed Cup method as specified in ASTM D93. The test sample is placed in the sealed closed cup and the instrument automatically controls the sample heating rate through three programmable stages — Step A (1–6°C/min), Step B (1 to 1.5°C/min), Step C (2.5 to 3.5°C/min) — plus a fast mode (10–15°C/min) for rapid estimation of unfamiliar samples. The heating rate is custom-mode adjustable for non-standard applications.

At programmed temperature intervals, the automatic mechanism opens the cup lid, briefly introduces the ignition source to the vapor space, and reseals the cup. Flash point is detected automatically by the smart flame detection system. An atmospheric pressure sensor automatically corrects the measured flash point result for barometric pressure effects per ASTM D93 methodology. Upon detection, the hidden lift type dual fire extinguisher activates — automatically detecting and

extinguishing the open fire within two seconds by spraying inert gas. The forced cooling system rapidly returns the heating system to ambient temperature, enabling the next test within 10 minutes.

TECHNICAL SPECIFICATIONS

Closed Cup Flash Point Tester with Inert Gas Suppression – ToronFPT™ CC Technical Specifications

Parameter	Specification
Model	ToronFPT™ CC
Standards	ASTM D93
Measuring Range	Room temperature – 400°C
Repeatability	≤2°C
Reproducibility	≤4°C
Resolution	0.1°C
Heating Rate	Step A: 1–6°C/min; Step B: 1–1.5°C/min; Step C: 2.5–3.5°C/min; Fast mode: 10–15°C/min; Custom mode: adjustable
Fire Extinguishing Method	Inert gas spray fire extinguishing
Furnace Cooling	Forced air cooling
Ignition Mode	Electric ignition; gas ignition; free switching
Sample Cup Cooling	Intelligent air cooling rack
Fire Maintenance	Intelligent detection, automatic re-ignition

Parameter	Specification
Power Consumption	≤300 W
Main Unit Size	480 × 375 × 360 mm
Voltage	AC220V ± 10%; 50Hz ± 10% (110V is also available)
Relative Humidity	<80% RH
Ambient Temperature	10 – 40°C
Other Notes	No strong vibration, airflow, strong electromagnetic interference, or corrosive gases around the laboratory

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