



TORONTECH

OPEN CUP FLASH POINT TESTER WITH DUAL FIRE SUPPRESSION



Open Cup Flash Point Tester with Dual Fire Suppression - ToronFPT™ OC-DS

ToronFPT™ OC-DS is a full-automatic open cup flash point tester designed and manufactured in accordance with ASTM D3536 and ASTM D92 standards for flash point testing and ignition point determination of petroleum products, lubricating oils, and other flammable liquids. As a high-automation flash point tester, the ToronFPT™ OC-DS performs fully automatic temperature control, automatic lid operation, automatic measurement, automatic printing, and automatic flame detection — while incorporating covering fire extinguishing plus inert gas spray fire extinguishing for superior safety compared to conventional automatic open cup flash point testers.

The ToronFPT™ OC-DS flash point tester addresses the critical fire risks associated with traditional manual and semi-automatic flash point testers — where operational uncertainties and manual firefighting after ignition can severely damage equipment and pose safety hazards. Featuring a silicon nitride automatic ignition head with smart flame detection and automatic re-ignition, the instrument delivers long-lasting, reliable ignition performance without manual gas gun operation.

APPLICATIONS

Open Cup Flash Point Tester with Dual Fire Suppression - ToronFPT™ OC-DS Applications

The ToronFPT™ OC-DS open cup flash point tester is used in petroleum product characterization, safety classification, and quality control across a broad range of industries:

- Petroleum product testing: ASTM D92 flash point determination for lubricating oils, base oils, gear oils, and turbine oils
- Petroleum refinery QC: flash point verification for refined product release and process safety monitoring

- Transformer and insulating oil testing: flash point and fire point characterization for electrical insulating fluids
- Industrial lubricant and hydraulic fluid testing: flash point classification for workplace safety and product compliance
- Fuel and combustible liquid classification: safety data sheet (SDS) compliance testing for flammable and combustible liquid categories
- Independent testing laboratories: ASTM D92-compliant flash point testing as a commercial analytical service
- Chemical and petrochemical industry: flash point screening for process safety and transportation hazard classification



Applicable Standards

The ToronFPT™ OC-DS open cup flash point tester is designed to support testing in compliance with the following international standards:

- ASTM D92 is a standard test method that covers the determination of the flash and fire points of petroleum products (excluding fuel oils) using a Cleveland open-cup tester.

FEATURES

Open Cup Flash Point Tester with Dual Fire Suppression - ToronFPT™ OC-DS Key Features

The ToronFPT™ OC-DS automatic open cup flash point tester delivers an advanced feature set for safe, accurate, and fully automated flash point testing:

- 8-Inch Full HD Color LCD Touchscreen Interface: the instrument features an 8-inch color HD LCD touch screen with all human computer dialogue interface for intuitive, straightforward operation.
- Preset Parameters and Delayed Temperature Start: temperature, sample name, delayed temperature initiation, and other parameters can be preset for hands-off test startup, enabling batch test preparation.
- Real-Time Temperature and Time Function Curve Display: accurate simulation tracking provides real-time display of temperature and test time function curves, with software prompt function for misoperation modification.
- Atmospheric Pressure Correction: the instrument comes with an atmospheric pressure sensor to automatically correct the influence of atmospheric pressure on flash point test results — a requirement of ASTM D92 for accurate, site-independent flash point determination.

- Silicon Nitride Ignition Head with Auto Re-Ignition: silicon nitride automatic ignition head eliminates the need to manually operate gas guns. Electric and gas ignition can be freely switched. Smart flame detection with automatic re-ignition greatly extends the service life of the ignition head.
- Automatic Rotating Lift Arm: automatic rotating lift arm with lifting, scanning, detection, and printing functions makes the entire measurement process fully automatic and operationally complete.
- Intelligent Sample Cup Cooling Rack: the forced cooling system quickly cools the heating system. The intelligent sample cup cooling rack automatically starts and stops the cooling system based on sample cup temperature, allowing the next test to begin within 10 minutes.
- Dual Fire Protection System: double fire protection with hidden lift type dual fire extinguisher: the instrument actively detects the open fire and automatically extinguishes it within two seconds by deploying covering fire extinguishing and inert gas spray fire extinguishing in sequence.
- LIMS Connectivity via USB Port: the LIMS system can be connected through the USB port for seamless integration into laboratory data management environments.

THEORY & METHOD

Theory and Method

The ToronFPT™ OC-DS measures flash point using the Cleveland Open Cup (COC) method as specified in ASTM D92. The petroleum sample is placed in the open test cup, and the instrument automatically controls the heating rate through three programmable stages, raising the sample temperature at a precisely controlled rate. As the sample approaches the expected flash point, the ignition source (a switchable electric/gas ignition system with automatic gas gun ignition) passes over the cup surface at defined intervals.

Flash point is detected when a flash appears above the sample surface and is immediately identified by the instrument's smart flame detection system. An atmospheric pressure sensor automatically corrects the measured flash point value for the influence of atmospheric pressure on the test result, as required by ASTM D92. Upon flash detection, the dual fire protection

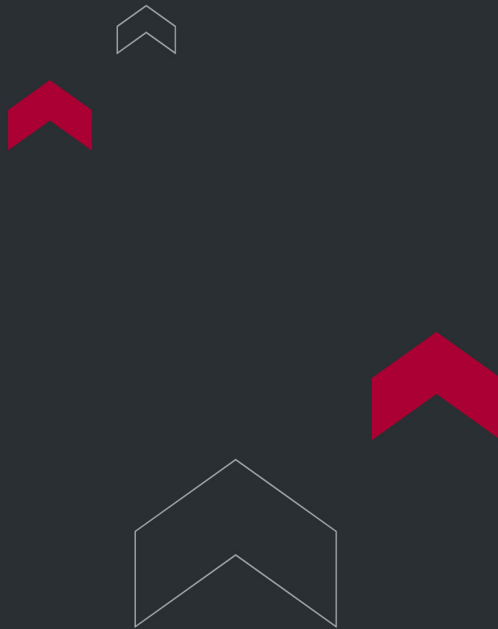
system activates covering fire extinguishing is deployed first, followed by inert gas spray fire extinguishing if needed ensuring that the open fire is extinguished within two seconds of occurrence. The forced air cooling system then rapidly cools the test cup and heating system to below ambient temperature, allowing the next test to begin within 10 minutes.

TECHNICAL SPECIFICATIONS

Open Cup Flash Point Tester with Dual Fire Suppression - ToronFPT™ OC-DS Technical Specifications

Parameter	Specification
Model	ToronFPT™ OC-DS
Standards	ASTM D92
Measuring Range	Room temperature - 400°C
Repeatability	≤4°C
Reproducibility	≤8°C
Resolution	0.1°C
Heating Rate	Programmable multi-stage controlled heating rate
Fire Extinguishing Method	Covering fire extinguishing + 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
Machine Power	≤400 W
Main Unit Size	450 × 375 × 360 mm
Voltage	AC220V ± 10%; 50Hz ± 10% (110V is also available)
Relative Humidity	<80% RH
Ambient Temperature	10 - 28°C
Other Notes	No strong vibration, airflow, strong electromagnetic interference, or corrosive gases around the laboratory



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