

PMA 5

Pensky-Martens Flash Point Tester

::: Volatility Flammability



Tradition of Competence

140 years of developing, producing and supporting excellent flammability instruments.

140 years of technology between the first flash point tester and today's Anton Paar product line of flammability measuring instruments.

Mr. Berthold Pensky developed the first closed cup flash point tester and set a milestone for the production of flash point testers based on quality and precision. Aligned to the requirements of varying industrial branches the instruments from Berlin could meet a worldwide demand.

The acquisition of Petrotest by Anton Paar combines the spirit of research and inventive talent with the advantages of a worldwide well established sales & service team.

Founded in 1922, Anton Paar today employs over 1700 people in 20 countries who manage a global business and provide the whole value chain starting from product ideas, research and development, production, sales, application support and after-sales services.

As a result of this unique concentration of talents and know-how, Anton Paar's product portfolio has grown continuously. It now covers a wide range of laboratory instruments, process technologies and automation systems ranging from standardized QC to complex R&D solutions.

Anton Paar is close to you and your work. An experienced local team speaks your language and provides application support and training. Anton Paar thinks globally and acts locally.



Flash Point Measurement

All Methods – All Standards – One Product Line

Anton Paar has the suitable flammability tester for each type of measuring task in its product line. Tests according to 4 standardized methods in the temperature range of -30 °C to +400 °C are possible to cover a wide range of application. For example the petrochemical field, calibration & regulation authorities, transportation & shipping, engineering, waste management, cosmetics and food industries.

Cleveland-Method ...

... open cup determination for expected flash and fire points in the range +79 °C to +400 °C (+175 °F to +752 °F).

Pensky-Martens-Methods ...

... closed cup determination for expected flash points in the range of +40 °C to +400 °C (-104 °F to +752 °F).

Comprising:

Method A

for distillate fuels (diesel, kerosene, heating oil, turbine fuels), new lubricating oils, paints, varnishes and other homogeneous liquids.

Method B

for residual fuel oils, cutback residual, used lubricating oils, non-homogeneous materials like mixtures of petroleum liquids and solids, surface-film building petroleum liquids or liquids with a viscosity above 5.5 cSt at +40 °C.

Method C

for biodiesel (FAME).

Requires electronic flash point detection!

Pensky-Martens closed cup (PMCC).

PMA 5 is standardized for both biodiesel and bio-diesel blended fuels along with such distillate fuels as diesel, heating oil and kerosene and such potentially flammable liquids as lubricating oils, paints and varnishes.

Product highlights are:

- ▶ One-Twist Head
- ▶ Multidetector
- ▶ Integrated fire extinguishing device
- ▶ Gas and electric ignition
- ▶ 1-Button operation
- ▶ Tray

For standardized, comfortable, versatile and safe flash point testing the Pensky-Martens tester PMA 5 is the right choice!

TAG-Method ...

... closed cup determination for expected flash points below +93 °C (+200 °F).

Abel-Method ...

... closed cup determination for expected flash points in the range of -30 °C to +70 °C (-22 °F to +158 °F).

PMA 5

Make Work Easy and Safe

Patented Error-Free Connection

The One-Twist Head, the patented swivel-around multi-function-head, guarantees the safe and easy one-hand connection of all sensors and actuators such as shutter actuator, stirrer, igniter and detector contacts. It reduces the set-up time after a sample change and assures a comfortable and error-free handling.

Immersion Depth in Perfection

The multi-detector combines the flash point detector and the temperature probe in a solid housing with a perfectly adjusted immersion depth. Available with glass or stainless steel temperature probe and officially certified.

Neatness at Work

A tray to hold cup/lid, sensor and igniters when out of use. Small dishes collect the sample remains. It keeps your work space clean and prevents damage on sensible parts.





Choice of Ignition

The PMA 5 allows the use of an electric or gas ignitor. If working with the gas ignition, the electric ignitor is used as an auxiliary ignition to ensure the uninterrupted burning of the test flame. If necessary it relights the flame during the test automatically.

Being independent from a gas source allows more mobility and extends the application range.

Fire Hazard Down to Zero

The integrated fire extinguishing system is automatically controlled or can be released manually. Flames that might occur outside the cup will be extinguished by nitrogen- or carbon dioxide gas.

Turn, Klick and Push

The Pmove® jog wheel has a scroll function (by turning the jog shuttle), 4 cursor keys (the button is moved in the direction of the illuminated arrow) and an <ENTER> function (by pressing the button).

Comfortable program operation and input of e.g. test parameters, sample name and program selection, even with protective gloves on.

Versatility by Option



On-Site Calibration

The calibration set PMA/PM is a mandatory accessory for the PMA 5 calibration programs, used to calibrate the sample Pt100 dynamically against certified thermometers.

The on-site calibration feature is very economic and available at anytime.

Multi-Detector Functionality Check

The Holding Device for multi-detectors (PMA & ABA/TAG) allows customers to check the functionality of their Pt100 and thermo-couple and enables calibration services to calibrate the Pt100.

The diagnosis function of the sensible sensors prevents unnecessary service costs in case of unexpected measurements.



Small Scale Samples

The Milli Test Insert pPM for sample quantity between 2 mL - 15 ml extends the application of the PMA 5 for small sample quantities.

A reduced sample volume of 80% will be valuable not only for cosmetics industry but the R&D field, too.



Versatility by Stainless Steel

The test insert PM-NIRO is a stainless steel alternative to the 75 ml standard type made of brass.

Our multi-detector PM-NIRO combines the flash point detector with a sturdy stainless steel temperature probe. Not in compliance with official standards it extends spectrum of samples that can be measured, e.g. aggressive samples.



Specifications

Flash point determination

The temperature in non-equilibrium methods is increased slowly over a given range with the source of ignition being presented to the vapor at intervals until the flash is observed. The flash point is the lowest temperature, corrected to a barometric pressure of 101.3 kPa, at which application of an ignition source causes the vapors of a specimen of the sample to ignite under specified conditions of the test.

Standard methods

Pensky-Martens methods for petroleum products:
ASTM D93 A+B, ISO 2719 A+B, JIS K 2265-3,
AASHTO T73, AASHTO T172, GOST R EN ISO 2719,
IP 34 A+B
Pensky-Martens Method for Biodiesel: ASTM D93 C
Limit test for edible oils and fats: ISO 15267

Technical specifications	
Test programs	ASTM D93 (A & B & C) ISO 2719 (A & B) JIS 2265-3 (A & B) Search A & B (ASTM & ISO) Search Run Rapid Bitumen pPM (Milli-PM, 5 mL - 15 mL sample) 15 individually designable test programs
Operation	
Temperature range	Up to +405 °C
Ignition type	Gas and electric
Stirring speed	According to standard method or user defined
Heating rate	According to standard method or user defined
Cooling	Built-in forced air
Barometric pressure correction	Flash point is automatically corrected to barometric pressure
Detection	Thermal/eliminates interferences from water
Test Place	1 (standardized test insert with multi-detector included)
Safety	<ul style="list-style-type: none">- Overheat protection, automatic shut-off- Automated fire extinguishing system- A potential-free alarm relay contact is also available to the PMA 5 to fire suppression or remote alarm system- Password protection
Calibration	<ul style="list-style-type: none">- Self made Pt100 sample-temperature-probe calibration, against certified liquid in glass ASTM-thermometer- Pt100 sample-temperature-probe correction using up to 21 user-defined temperature points out of external calibration certificate- Heater-block-Pt100 calibration- Barometric-pressure-sensor calibration
Handling	<ul style="list-style-type: none">- Splash-proof membrane key panel with color display- Jog-shuttle with LED indication for input of test parameters, sample name and program selection- Selection of °C or °F, as well as further test parameters- Multi-language user support (English, German, French)- Progress of test displayed in different colors (user-defined)- The jog-shuttle and 4 softkeys underneath the display are used for operation
Documentation	
Memory	1000 tests, 20 operator names and 100 samples
Statistics	Mean, MIN, MAX, Repeatability
Interfaces	3x USB, 1x RS232, 1x LAN
Input options	optional keyboard and bar code reader
Display	5.7" QVGA color; real time measurement displayed
Requirements and dimensions	
Electrical supply	115/230 V, 50/60 Hz
Gas supply	Propane/butane/natural gas (max. 50 mbar) and nitrogen / carbon dioxide
Dimensions	230 mm x 410 mm x 460 mm (W x D x H)
Weight net	14 kg

