

# Instruments for **Chemical and Petroleum Products**

Flash Point Testers



# Next-Generation Flash Point Testing

FIND OUT MORE



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Welcome to Next-Generation Flash Point Testing: Our state-of-the-art flash point testers cover every requirement and every price range. They offer full standards compliance, the widest possible application range, a unique feature set for maximum usability, and the highest safety. Key components have a longer lifetime than those of any other comparable instrument.



## Pensky-Martens

- PMA 500: From above ambient temperature to 410 °C
- PMA 300: From above ambient temperature to 370 °C

Full compliance with ASTM D93, EN ISO 2719, IP 34, JIS K2265-3, GB/T261

## Abel

- ABA 500: -7 °C to +130 °C (internal cooling)  
-35 °C to +130 °C (external cooling)
- ABA 300: -7 °C to +110 °C

Full compliance with ISO 13736, IP 170, ISO 1516, ISO 1523, IP 492, EN 924, IP 491

## Tagliabue

- TAG 500: -7 °C to +130 °C (internal cooling)  
-35 °C to +130 °C (external cooling)
- TAG 300: -7 °C to +110 °C

Full compliance with ASTM D56, ASTM D3934, ASTM D3941, EN 924, ISO 1516, ISO 1523, IP 491, IP 492

## Cleveland

- CLA 5: From above ambient temperature to 400 °C

Full compliance with ASTM D92, EN ISO 2592, JIS K 2265-4, AASHTO T48, FTM 791-1103, IP 36, GOST 4333

# Next-Generation User Experience



## Award-winning electric igniter design

All of our next-generation flash point testers are equipped with the unique Anton Paar encapsulated ceramic-coated electric igniter. The sturdy, high-quality igniter has a 10x longer lifetime than any other electric igniter, making frequent downtimes and igniter changes a thing of the past. Near-zero maintenance maximizes operation time while minimizing service and spare part costs.

## Maximum safety for operator and lab

Our flash point testers are the safest such instruments on the market. A standard or optional fire extinguisher fully integrates into the smooth instrument design in combination with a fail-safe redundant two-sensor fire detection system. Automatic safety procedures extinguish any fire, safely terminate a running measurement, and automatically cool down instrument and sample to a safe-handling temperature. Customizable safety parameters in the measurement procedures anticipate risks in another layer of safety.

## Temperature control solution guarantees flexibility

Controlling instrument and sample temperature is vital when it comes to standard-conform flash point testing and maximizing sample throughput. All Anton Paar flash point testers guarantee perfect heating rates during the flash point tests and stable temperature control during equilibrium measurements. And there's more:

- The top-class ABA and TAG flash point testers with their hybrid cooling solution cover the largest temperature range on the market. Combine the instruments with an external cooler and maximize your sample range.
- The top-class Pensky-Martens flash point tester offers a unique boost cooling feature that gets the instrument ready for the next test faster than any competitor instrument – so you can maximize your sample throughput.

## Pioneering ease of use

With Anton Paar, flash point testing is easier than ever before. Powerful, intuitive software features help you to get your work done quickly. Guided procedures ensure standards-conformant testing, fast and reliable quality control, and accurate adjustment of all instrument sensors. Measurement setup is straightforward. So is test equipment disassembly for cleaning. Since the multi-function head automatically and smoothly connects with the temperature and flash point sensor, there are no cables to plug in or disconnect. A large display and a status light let you observe the instrument status from a distance.

## Real-time results, digital data redefined

See all relevant data in real time during a measurement, store thousands of test results on your instrument, export or print smartly layouted reports. Integrate your data into your LIMS or use the fully integrated lab execution software AP Connect for increased productivity in your lab and improved data quality.

# PMA 500/300

The high-precision Pensky-Martens PMA 500 and PMA 300 flash point tester series leverages premium technology to maximize sample throughput. They determine expected flash points from above ambient temperature all the way up to 410 °C (PMA 500) and 370 °C (PMA 300). They offer straightforward, automated handling, maximum safety, and unrivaled usability along with a self-explanatory user interface.

- ✓ Electric igniter with patented design and ceramic coatings: 10x longer lifetime than that of any comparable instrument, eliminating costly downtimes and high running costs
- ✓ Ultra-effective cooling gets you ready for the next test 20 % faster than any other such instrument on the market\*
- ✓ Fully automatic multi-function head means hassle-free test setup and easy access to the test equipment for cleaning after a measurement
- ✓ Fire extinguisher and two-sensor fire detection system maximizes safety for operator and lab
- ✓ Status light for intelligent instrument feedback to ensure efficient work in the lab\*

\*PMA 500 only

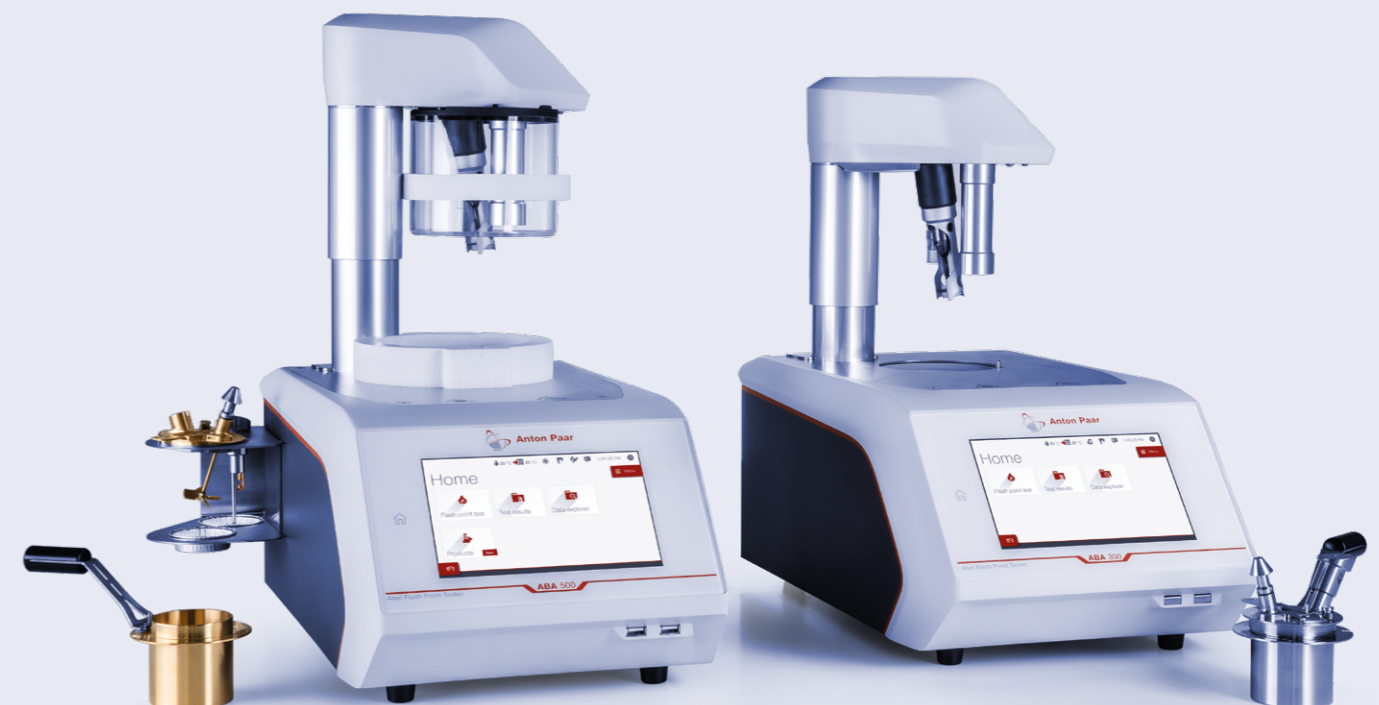


# ABA 500/300

The ABA 500 and ABA 300 Abel flash point tester series offers a first-class automatic high-precision flash point testing of samples, such as jet fuels, solvents, and flavors and fragrances. Innovative cooling options permit flash point testing across a sample temperature range from -35 °C to +130 °C (ABA 500) and -7 °C to +110 °C (ABA 300).

- ✓ Electric igniter with patented design and ceramic coating: 10x longer lifetime than that of any comparable instrument, eliminating costly downtimes and high running costs
- ✓ Unparalleled two-in-one instrument combination (operable with and without external chiller) for top flexibility and the widest possible application range: -35 °C to +130 °C sample temperature\*
- ✓ Fully automatic multi-function head for hassle-free test setup, and easy access to the test equipment for efficient cleaning after a measurement\*
- ✓ Maximum safety for operator and lab: fail-safe fire detection system, combined with fire extinguisher
- ✓ Status light for intelligent instrument feedback to ensure efficient work in the lab\*

\*ABA 500 only



# TAG 500/300

The TAG series comprising TAG 500 and TAG 300 brings you market-leading automatic, high-precision Tagliabue flash point testing of samples such as jet fuels, solvents, and flavors and fragrances. Innovative cooling options enable flash point testing across a sample temperature range from -35 °C to +130 °C.

- ✓ Electric igniter with patented design and ceramic coating: 10x longer lifetime than that of any competitor instrument, eliminating costly downtimes and high running costs
- ✓ Unparalleled two-in-one instrument combination (operable with and without external chiller) for top flexibility and the widest possible application range: -35 °C to +130 °C sample temperature\*
- ✓ Fully automatic multi-function head for hassle-free test setup and easy access to the test equipment for efficient cleaning after a measurement\*
- ✓ Maximum safety for operator and lab: fail-safe fire detection system, combined with fire extinguisher
- ✓ Status light for intelligent instrument feedback to ensure efficient work in the lab\*

\*TAG 500 only

# CLA 5

The CLA 5 Cleveland open-cup flash and fire point tester measures and describes the properties of a sample in response to heat and a test flame under controlled conditions. Get reliable and precise flash and fire point test results of lubricants or bituminous material with our tried-and-tested instrument.

- ✓ Convenient preconfigured standard test methods for standards-compliant results
- ✓ Alert messages for out-of-specs results for efficient quality control
- ✓ Gas igniter lights automatically and relights, if required
- ✓ Integrated fire extinguishing lid and gas source suppression after flash or fire point test
- ✓ Up to 10 user-defined methods, memory for 1,000 tests, 20 operators, 100 sample names
- ✓ Metal or glass Pt100 sample temperature sensor calibration either via dynamic calibration against certified ASTM thermometer or via correction table with up to 21 calibration points



# Versatility

across  
Industries

## 1 Petroleum refineries

Petroleum refineries process crude oil into different products such as diesel fuel (ASTM D975), fuel oils (ASM D396), kerosene (ASM D3699), biodiesel blends B6 to B20 (ASTM D7467), and many more. According to product specifications, flash point is a mandatory value. Maximum safety, a high sample throughput, and ease of use are just some characteristics a good flash point tester has to fulfill. Fastest cooldown after measurement and a fail-safe fire detection combined with a fire extinguisher are the way to go.

## 2 Testing laboratories

For testing laboratories, flash point testing is a standard testing method offered as a service. Full compliance to a variety of flash point methods, high precision, minimum downtimes, high sample throughput, and cost-saving measurements are mandatory to master the high workload testing laboratories are facing. The new, ceramic-coated electric igniter, next-level cooling and heating systems, and the intuitive-to-use designs of Anton Paar's flash point testers are the perfect solution for maximum productivity.

## 3 Tank terminals

The quality of incoming, stored, and exiting products must be tested for their quality and compliance to product specifications. Furthermore, blending of fuels has to be monitored and the quality of the final product has to be checked. For all of these areas, tank terminals rely on their flash point measurements. Time is a crucial factor. Thus, high-throughput instruments having only minimum downtimes and fast and efficient service are a must. Three years of warranty and service teams close to your location are a great benefit.

## 4 Chemical industry

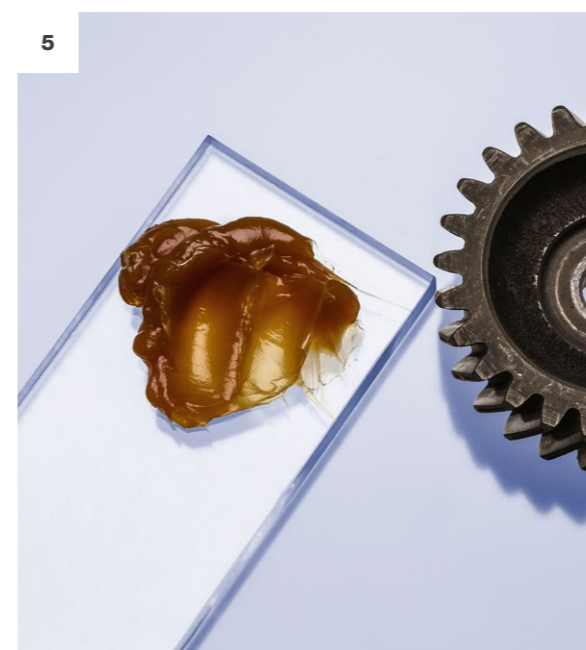
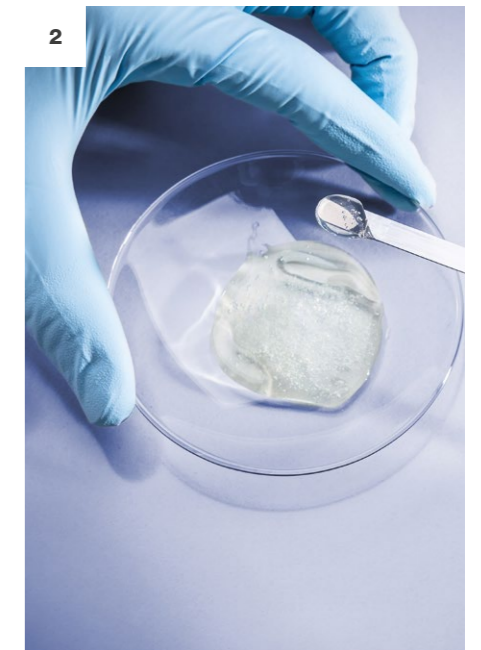
In the chemical industry, knowing the flash point can be important regarding storage and transport of products as well as product specifications and monitoring of quality. If solely used for quality control, also non-standard method complying test kits can be used, e.g. stainless-steel test sets to measure corrosive samples or mini cups to measure valuable samples which are only available in small amounts.

## 5 Lubricating oils

For lubricating oil producers, open and closed cup, flash and fire point testing is an important value within product specifications. Lubricating oils are often used at elevated temperatures, thus, knowing the flash and fire point is important for safety. Contaminations for in-use lubricating oils can alter the characteristics of lubricating oils. Flash point testing is a quick and easy method to test for known contaminations. PMA 500 offers unique product screen to check for known impurities and their share within the main product.

## 6 Bitumen

Open- and closed-cup flash point testing, according to Cleveland and Pensky-Martens, are mandatory testing methods within bitumen product specifications. Bitumen has high flash and fire points. Thus, to achieve a high sample throughput, a high cooling power after measurement is essential for bitumen producers. Furthermore, due to the nature of bitumen, an easy-to-clean instrument is preferred.



**PMA 300****PMA 500**

Standard methods

ASTM D93, EN ISO 2719, IP 34, JIS K2265-3, GB/T261

OPERATION		
Application range (flash point temperature)	From above ambient temperature to 370 °C	From above ambient temperature to 410 °C
Sample temperature	From above ambient temperature to 370 °C	From above ambient temperature to 410 °C
Ignition type	Electric (encapsulated hot wire)	Electric (encapsulated hot wire) Optional gas ignition
Stirrer speed	0 rpm to 500 rpm	
Cooling	Fan cooling after measurement	Boosted fan cooling after measurement
Barometric pressure correction	Automatic correction; ambient pressure range of 85 kPa to 110 kPa	
Flash detection	Automatic detection by thermocouple	
Sample temperature measurement	Metal Pt100 integrated in multi-detector with built-in calibration at up to 12 calibration points	

SAFETY		
Fire extinguisher	Integrated automatic fire-extinguishing system in combination with a unique optical fire detection system	
Features	Overheat protection, automatic shut-off; detects a “flash” outside the cup	
Security	-	User management with different access levels

FURTHER FEATURES		
Calibration	Calibration of sample and block temperature, stirrer speed, and internal barometer	
Connectivity	AP Connect software (optional), LIMS	
Memory	1 GB space for approx. 50,000 tests	1 GB space for approx. 50,000 tests and 1,000 users
Statistics	-	Mean, min, max, repeatability, standard deviation
Interfaces	2 × USB, 1 × LAN	4 × USB, 1 × LAN
Input options	Optional USB keyboard, mouse, barcode reader	
Display	7" TFT, PCAP touchscreen	
Power supply	AC 100 V - 120 V, 50/60 Hz AC 220 V - 240 V, 50/60 Hz	
Heating power	2 × 330 W	
Gas supply	Integrated fire extinguisher: CO <sub>2</sub> or N <sub>2</sub> inert gas; inlet pressure 400 kPa to 500 kPa	Integrated fire extinguisher: CO <sub>2</sub> or N <sub>2</sub> inert gas; inlet pressure 400 kPa to 500 kPa; Optional gas ignition: 50 mbar of propane or butane

DIMENSIONS AND WEIGHT		
Dimensions (W × D × H)	262 mm × 506 mm × 486 mm	
Weight	Ca. 15 kg	

**ABA 300****ABA 500**

Standard methods

ISO 13736, IP 170, ISO 1516, ISO 1523, IP 492, EN 924, and more

OPERATION		
Application range (flash point temperature)	10 °C to 110 °C	Internal cooling: 10 °C to 130 °C External cooling: -30 °C to +130 °C
Sample temperature	-7 °C to +110 °C	Internal cooling: -7 °C to +130 °C External cooling: -35 °C to +130 °C
Ignition type	Electric (encapsulated hot wire)	Electric (encapsulated hot wire) Optional gas ignition
Stirrer speed	0 rpm to 300 rpm	
Cooling	Fan-supported Peltier cooling technology	Hybrid instrument, fan- and external cooling-supported Peltier cooling technology
Barometric pressure correction	Automatic correction; ambient pressure range of 85 kPa to 110 kPa	
Flash detection	Automatic detection by thermocouple	
Sample temperature measurement	Metal Pt100 integrated in multi-detector with built-in calibration at up to 12 calibration points	

SAFETY		
Fire extinguisher	Optional automatic fire-extinguishing system in combination with a unique optical fire detection system	
Features	Overheat protection, automatic shut-off; detects a “flash” outside the cup	
Security	User management with different access levels	

FURTHER FEATURES		
Calibration	Calibration of sample and block temperature, stirrer speed, and internal barometer	
Connectivity	AP Connect software (optional), LIMS	
Memory	1 GB space for approx. 50,000 tests and 1,000 users	
Statistics	Mean, min, max, repeatability, standard deviation	
Interfaces	2 × USB, 1 × LAN	4 × USB, 1 × LAN
Input options	Optional USB keyboard, mouse, barcode reader	
Display	7" TFT, PCAP touchscreen	
Power supply	AC 100 V to 240 V, 50/60 Hz	
Heating power	100 W	
Gas supply	Optional fire extinguisher: CO <sub>2</sub> or N <sub>2</sub> inert gas; inlet pressure 400 kPa to 500 kPa	Integrated fire extinguisher: CO <sub>2</sub> or N <sub>2</sub> inert gas; inlet pressure 400 kPa to 500 kPa; Optional gas ignition: 50 mbar of propane or butane

DIMENSIONS AND WEIGHT		
Dimensions (W × D × H)	262 mm × 472 mm × 437 mm	262 mm × 497 mm × 477 mm
Weight	Ca. 14 kg	Ca. 15 kg

**TAG 300**

Standard methods

ASTM D56, ASTM D3934, ASTM D3941, EN 924, ISO 1516, ISO 1523, IP 491, IP 492, and more

**TAG 500**

OPERATION		
Application range (flash point temperature)	10 °C to 110 °C	Internal cooling: 10 °C to 130 °C External cooling: -30 °C to +130 °C
Sample temperature	-7 °C to +110 °C	Internal cooling: -7 °C to +130 °C External cooling: -35 °C to +130 °C
Ignition type	Electric (encapsulated hot wire)	Electric (encapsulated hot wire) Optional gas ignition
Stirrer speed	-	
Cooling	Fan-supported Peltier cooling technology	Hybrid instrument, fan- and external cooling-supported Peltier cooling technology
Barometric pressure correction	Automatic correction; ambient pressure range of 85 kPa to 110 kPa	
Flash detection	Automatic detection by thermocouple	
Sample temperature measurement	Metal Pt100 integrated in multi-detector with built-in calibration at up to 12 calibration points	

**SAFETY**

Fire extinguisher	Optional automatic fire-extinguishing system in combination with a unique optical fire detection system	
Features	Overheat protection, automatic shut-off; detects a "flash" outside the cup	
Security	User management with different access levels	

**FURTHER FEATURES**

Calibration	Calibration of sample and block temperature, and internal barometer	
Connectivity	AP Connect software (optional), LIMS	
Memory	1 GB space for approx. 50,000 tests and 1,000 users	
Statistics	Mean, min, max, repeatability, standard deviation	
Interfaces	2 × USB, 1 × LAN	4 × USB, 1 × LAN
Input options	Optional USB keyboard, mouse, barcode reader	
Display	7" TFT, PCAP touchscreen	
Power supply	AC 100 V to 240 V, 50/60 Hz	
Heating power	100 W	
Gas supply	Optional fire extinguisher: CO <sub>2</sub> or N <sub>2</sub> inert gas; inlet pressure 400 kPa to 500 kPa	Integrated fire extinguisher: CO <sub>2</sub> or N <sub>2</sub> inert gas; inlet pressure 400 kPa to 500 kPa; Optional gas ignition: 50 mbar of propane or butane

**DIMENSIONS AND WEIGHT**

Dimensions (W × D × H)	262 mm × 472 mm × 437 mm	262 mm × 497 mm × 477 mm
Weight	Ca. 14 kg	Ca. 15 kg

**CLA 5**

Standard methods

ASTM D92, ISO 2592, JIS K 2265-4, AASHTO T48, FTM 791-1103, IP 36, GOST 4333

SPECIFICATIONS	
Application range	From above ambient temperature to 400 °C
Ignition type	Gas ignition
Barometric pressure correction	Automatic correction; ambient pressure range of 85 kPa to 110 kPa
Flash detection	Automatic detection by ionization detector
Sample temperature measurement	Metal Pt100 (glass Pt100 optional)
Fire extinguisher	Integrated fire extinguishing lid in combination with gas source suppression after flash or fire point test
Safety features	Overheat protection, automatic shut-off
Calibration	Pt100 sample temperature probe calibration either by dynamic calibration against certified ASTM thermometer or by correction table with 21 calibration points
Interfaces	2 × USB-A, 1 × USB-B, 1 × RS-232, 1 × LAN
Display	5.7" QVGA color
Power supply	AC 230 V ± 10 %, 50/60 Hz, AC 110 V ± 10 %, 60 Hz
Gas supply	Gas ignition: 50 mbar of propane, butane, or natural gas
Dimensions (W × D × H)	230 mm x 390 mm x 460 mm
Weight	Ca. 12 kg

Reliable.  
Compliant.  
**Qualified.**

Our well-trained and certified technicians are ready to keep your instrument running smoothly.

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