

Small Scale Flash Point versus Pensky Martens ASTM D93

Many specifications adopt the use of Setaflash Small Scale test methods as an alternative to ASTM D93 Pensky Martens, ASTM D56 Tag and other flash point tests.



ASTM D3828 Setaflash vs ASTM D93 Pensky Martens Closed Cup

The following table shows the results obtained from 2 batch samples of pure hydrocarbons whose flash points were tested using both PMCC and Setaflash methods. It is observed that repeatability of D3828 is within 1.0°C at all points.

		n-Decane °C:	n-Dodecane °C:	n-Hexadecane °C
Sample A	Setaflash	50.0°C	82.0°C	134.5°C
		50.0°C	81.5°C	134.0°C
		50.0°C	81.5°C	134.0°C
		50.0°C	81.5°C	134.0°C
		50.0°C	81.5°C	134.0°C
	Pensky-Martens	53.0°C	84.0°C	138.5°C
		53.0°C	84.5°C	137.0°C
		53.0°C	85.0°C	138.0°C
		53.0°C	84.0°C	137.0°C
		53.0°C	84.5°C	138.0°C
Sample B	Setaflash	49.5°C	82.0°C	135.0°C
		50.0°C	82.5°C	136.0°C
		50.0°C	82.5°C	136.0°C
		50.0°C	82.0°C	135.5°C
		50.0°C	82.0°C	136.0°C
	Pensky-Martens	53.0°C	84.5°C	137.0°C
		53.0°C	85.0°C	137.0°C
		52.5°C	86.0°C	138.0°C
		52.5°C	84.5°C	137.0°C
		53.0°C	85.0°C	137.0°C

Where is Setaflash Used?

Setaflash is an internationally recognised and approved test method giving proven results, the instrument is specified in many international specifications and correlates with other closed cup methods, such as Pensky Martens, Abel and Tag, for a wide range of products.

Setaflash is included in the following test methods:

ASTM D3278; ASTM D3828; ASTM D7236; ASTM E502; IP 523; IP 524; IP 534; IP 303 (obs); ISO 3679; ISO 3680; CLP Regulations EC No. 1271/2008; USDOT; USEPA; US OSHA

Typical applications include:

Fuel • Diesel • Aviation Fuel • Marine Fuel • Biodiesel • FAME • Ethanol • Oils - Lubricating, Hydraulic, Base, Mineral • Chemicals • Pharmaceuticals • Paints • Cosmetics • Waste

What to Consider When Choosing a Flash Point Tester?

Safety

The need to heat and ignite potentially flammable liquids in a laboratory is naturally of concern and in many instances the use of a naked flame is prohibited. **Setaflash Small Scale** flash point tests reduce the risk by using a small sample of just 2 or 4ml, by comparison ASTM D93 Pensky Martens methods require a much larger volume of 75ml.



To learn more about Small Scale flash point testers, visit www.stanhope-seta.co.uk/small-scale-flashpoint-testing.asp



Other Things to Consider

- **Ease of operation** - how easy is an instrument to operate? **Setaflash Small Scale** flash point testers offer the simplest means of testing and require minimum analytical experience to achieve a reliable result.
- **Automated instrument options** - in today's laboratory it is not unusual for technicians to run several tests simultaneously and the concept of monitoring a test and making intervention at certain parts of the test procedure may not be practical or desired, so simplicity of use and automation are often key features required by users, **Setaflash Small Scale** flash point testers include fully automated models.
- **Speed of test** - especially important if a large number of samples are to be tested and where test throughput is vital in supporting efficient laboratory operations. **Setaflash Small Scale** tests take less than 2 minutes to perform - the Pensky Martens test typically takes 20 minutes or more to perform.
- **Speed of cooling** - flash point tests operate by heating a sample, often to relatively high temperatures of 250°C, cooling of the test cup in between tests is a key operating feature. The cool down period for **Setaflash Small Scale** tests is much faster than Pensky Martens due to the smaller cup volume.
- **Portable and lightweight** - Setaflash 'Series 3' models weigh less than 3.5kgs, can be powered by battery and are easily carried to the sample! This is not practical for most other types of flash point tester.
- **Storage of test results** - Setaflash have integral data storage memory helping to eliminate operator transcription errors, Setaflash 'Series 8' models also have onboard printers.