

METHOD 1010  
PENSKY-MARTENS CLOSED-CUP METHOD FOR DETERMINING IGNITABILITY

1.0 SCOPE AND APPLICATION

1.1 Method 1010 uses the Pensky-Martens closed-cup tester to determine the flash point of liquids including those that tend to form a surface film under test conditions. Liquids containing non-filterable, suspended solids shall also be tested using this method.

2.0 SUMMARY OF METHOD

2.1 The sample is heated at a slow, constant rate with continual stirring. A small flame is directed into the cup at regular intervals with simultaneous interruption of stirring. The flash point is the lowest temperature at which application of the test flame ignites the vapor above the sample.

For further information on how to conduct a test by this method, see Reference 1 below.

3.0 METHOD PERFORMANCE

3.1 The Pensky-Martens and Setaflash Closed Testers were evaluated using five industrial waste mixtures and p-xylene. The results of this study are shown below in °F along with other data.

<u>Sample</u>	<u>Pensky-Martens</u>	<u>Setaflash</u>
1 <sup>2</sup>	143.7 ± 1.5	139.3 ± 2.1
2 <sup>2</sup>	144.7 ± 4.5	129.7 ± 0.6
3 <sup>2</sup>	93.7 ± 1.5	97.7 ± 1.2
4 <sup>2</sup>	198.0 ± 4.0	185.3 ± 0.6
5 <sup>2</sup>	119.3 ± 3.1	122.7 ± 2.5
p-xylene <sup>2</sup>	81.3 ± 1.1	79.3 ± 0.6
p-xylene <sup>3</sup>	77.7 ± 0.5 <sup>a</sup>	--
Tanker oil	125, 135	--
Tanker oil	180, 180	--
Tanker oil	110, 110	--
DIBK/xylene	102 ± 4 <sup>b</sup>	107

<sup>b</sup>75/25 v/v analyzed by four laboratories.

<sup>a</sup>12 determinations over five-day period.

#### 4.0 REFERENCES

1. D 93-80, Test Methods for Flash Point by Pensky-Martens Closed Tester, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103, 04.09, 1986.
2. Umana, M., Gutknecht, W., Salmons, C., et al., Evaluation of Ignitability Methods (Liquids), EPA/600/S4-85/053, 1985.
3. Gaskill, A., Compilation and Evaluation of RCRA Method Performance Data, Work Assignment No. 2, EPA Contract No. 68-01-7075, September 1986.