Laboratory Manager Approval: Shene A. Jones / 08/19/2021
QA Manager Approval: Jeffrey Moore / 08/19/2021

EPA 1010: Flashpoint determination in Liquids

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1 Scope and Application

1.1 This method is used to determine the flash point of liquid samples.

Compound	CAS No.
Flashpoint	n/a

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1.2 Restricted Procedure
This procedure is restricted to use by an analyst experienced in the handling of hazardous materials. Additionally, the analyst must complete the requirements of the GAEPD Initial Demonstration of Analyst Proficiency prior to the analysis of actual samples. Analysts are further warned that performance of this analysis involves the use of potentially hazardous chemicals; refer to the GAEPD Chemical Hygiene Plan for additional information regarding chemicals required by this method.

2 Definitions

2.1 Refer to Chapter 3 of the Georgia EPD Laboratory Quality Assurance Manual for Quality Control Definitions.

3 Interferences

3.1 Material spilled on the surface of the heating bell will heat faster than material in the cup and may ignite before the flashpoint is obtained.
3.2 Chlorinated solvents may extinguish the pilot light.

4 Safety

4.1 Refer to Laboratory Chemical Hygiene Plan, online revision

5 Apparatus and Equipment

5.1 Penske-Martins closed cup flash point apparatus.
5.2 Thermometer

6 Reagents and Standards

6.1 m-xylene

7 Sample Collection

7.1 Refer to Chapter 5 of the Georgia EPD Laboratory Quality Assurance Manual for Sample Container, Sample Preservation, and Sample Holding Times.

8 Calibration

8.1 Analyze m-xylene. Measured flashpoints must agree within +/- 10OF of the actual flashpoint. Cool the apparatus to room temperature between measurements.

8.2 Calibration Curve: Not applicable.

8.3 Calibration Verification: Not applicable

9 Quality Control

9.1 Analyze all samples twice, duplicate readings must agree within 15 RPD.

10 Procedure

10.1 Fill the flashpoint cup to the fill line with the liquid to be tested. Place in ice bath until temperature probe reads 50 OF -55 OF

10.2 Place the cap on the filled cup then place the cup into the flashpoint apparatus.

10.3 Place the probe from the digital thermometer into the cup.

10.4 Turn the heating apparatus on. The heating bell must be at room temperature before beginning the analysis. Set the thermostat to heat at about a rate of 2OF per minute. When the temperature is about 20OF below the expected flashpoint start checking for a flash every two minutes, every minute once the temperature is within 10OF of the expected flashpoint. Stop the analysis at 150OF.
Turn the apparatus off; remove the sample cup from the heating bell and place in an ice bath. Cool the sample to room temperature before discarding the sample into a labeled waste jar. Analyze a duplicate sample. Duplicate readings must agree within 15 RPD

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11 Evaluation of the Linearity of the Initial Calibration

11.1 Not applicable.

12 References

12.1 Methods for the Determination of Metals in Environmental Samples Supplement I; U.S.
12.2 EPA Office of Research and Development: Cincinnati, OH, 1994, EPA-600/R-94/111 May 1994

13 Practical Quantitation Limits (PQLs), Precision and Accuracy Criteria, and Quality Control Approach

13.1 Not applicable