



<b>ATF-LS-FD12</b> <b>Ignition Susceptibility</b>	Published Online: <b>March 2018</b>
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- I. **Scope:** Ignition is the act of kindling or setting on fire any combustible substance. Ignitable liquids all exhibit burning properties.

Initial testing/screening of unknown liquids is performed to determine if they will support combustion. Additional testing is required for positive identification of the suspect material. The physical condition of the sample needs to be taken into consideration if the sample does not readily burn as expected.

II. **References:**

Speight Amy G., Taylor and Frances Group, "Petroleum Chemistry and Refining," 1977

Speight Amy G, John Wiley & Sons Inc, "Handbook of Petroleum Analysis," 2001

Speight James G. "The Chemistry and Technology of Petroleum," Chemical Industries, Vol. 76

Wiley John & Sons Inc. Kirk and Othmer, "Encyclopedia of Chemical Technology," Vol.26, 2001.

Wiley John & Sons Inc., "Petroleum (Refinery Process, Survey), and Petroleum Products," 2008

III. **Apparatus/Reagents:**

- A. Pipette, cotton-tipped swab, crucible, or other suitable instrument
- B. Tongs (used for holding burned matrix)
- C. Ignition source (burner, match, etc.)
- D. Reference ignitable liquids – 1-2 drops of a known ignitable liquid that is representative of the suspected ignitable liquid sample may be used for comparative purposes.

IV. **Safety Precautions:**

Use as small a sample as possible. Make sure the area is clear of any flammable or explosive materials (solvents, containers of explosives, etc.). Perform test in a hood, if practical, and wear eye protection. Extinguishment of matrices will be performed in a safe and practical manner.

V. **Procedures**

- 1. Remove one to two drops of suspected ignitable liquid with a pipette or other sampling device.
- 2. Place sample over ignition source (flame) and observe resulting effect.

VI. **Quality Control:**

The physical condition of the sample, along with the ignition technique, need to be taken into consideration if the sample does not readily burn as expected. Aqueous liquids may affect the ignition susceptibility of a liquid.