



Standard Test Method for Determination of the Cloud Point of Oil¹

This standard is issued under the fixed designation D5551; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers the determination of the cloud point of oils used in the softening and stuffing of leather and in the manufacture of fat liquors and other softening and stuffing compounds. This test method was derived from Test Methods **D97** and **D2500**.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- D97 Test Method for Pour Point of Petroleum Products**
- D2500 Test Method for Cloud Point of Petroleum Products**
- E1 Specification for ASTM Liquid-in-Glass Thermometers**

3. Terminology

3.1 *cloud point*—that temperature, expressed as a multiple of 1°C (2°F), at which a cloud or haze of wax crystals appears at the bottom of the test jar when the oil is cooled under prescribed conditions.

4. Significance and Use

4.1 This test method is intended to determine the cloud point of oils used in the softening and stuffing of leather, as

¹ This test method is under the jurisdiction of ASTM Committee **D31** on Leather and is the direct responsibility of Subcommittee **D31.08** on Fats and Oils. This test method was developed in cooperation with the American Leather Chemists Assn. (Method H 18-1957).

Current edition approved April 1, 2012. Published April 2012. Originally approved in 1994. Last previous edition approved in 2006 as D5551 – 95(2006). DOI: 10.1520/D5551-95R12.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

well as those used in the manufacture of products for such purpose. The cloud point of oils is measured for the purpose of quality assurance.

5. Apparatus

5.1 *Test Jar*, clear cylindrical glass, flat bottom, 30- to 33.5-mm inside diameter, and 115- to 125-mm height. To indicate sample height the jar should be marked with a line 54 ± 3 mm above the inside bottom.

5.2 *Thermometers*, having ranges shown below and conforming to the requirements prescribed in Specification **E1** for thermometers:

Thermometer	Temperature Range	Thermometer Number	
		ASTM	IP
High cloud and pour	-38 to +50°C	5C	1C
Low cloud and pour	-80 to +20°C	6C	2C
Melting point	+32 to +127°C	61C	63C

5.2.1 Since separation of liquid column thermometers occasionally occurs and may escape detection, thermometers should be checked immediately prior to the test and used only if they prove accurate within $\pm 1^\circ\text{C}$ (for example, ice point).

5.3 *Cork*, to fit the test jar, bored centrally for the test thermometer.

5.4 *Jacket*, metal or glass, watertight, cylindrical, flat bottom, 115 mm in depth, 42- to 50-mm inside diameter. It must be supported firmly in a vertical position in the cooling bath of **5.7** so that not more than 25 mm projects out of the cooling medium.

5.5 *Disk*, cork or felt, 6 mm thick, to fit loosely inside the jacket.

5.6 *Gasket*, to fit snugly around the outside of the test jar and loosely inside the jacket. The gasket may be made of rubber, leather, or other material that is elastic enough to cling to the test jar and hard enough to hold its shape. Its purpose is to prevent the test jar from touching the jacket.

5.7 *Bath or Baths*, maintained at prescribed temperatures with a firm support to hold the jacket vertical. The required bath temperatures may be obtained by refrigeration if available, otherwise by suitable freezing mixtures. Freezing