



Standard Test Method for Dropping Point of Lubricating Grease¹

This standard is issued under the fixed designation D566; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This test method covers the determination of the dropping point of lubricating grease.

1.2 This test method is not recommended for use at bath temperatures above 288°C. For higher temperatures Test Method D2265 should be used.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *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.* For specific hazard statements, see 6.4 and 8.1.

2. Referenced Documents

2.1 ASTM Standards:²

D217 Test Methods for Cone Penetration of Lubricating Grease

D235 Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)

D2265 Test Method for Dropping Point of Lubricating Grease Over Wide Temperature Range

E1 Specification for ASTM Liquid-in-Glass Thermometers

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.G0.03 on Physical Tests.

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In the IP, this test method is under the jurisdiction of the Standardization Committee. This test method was adopted as a joint ASTM-IP standard in 1964.

This test method has been adopted for use by government agencies to replace Method 1421 of Federal Test Method Standard No. 791b. DOI: 10.1520/D0566-02R09.

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.

3. Terminology

3.1 Definitions:

3.1.1 *lubricating grease, n*—a semi-fluid to solid product of a thickener in a liquid lubricant.

3.1.1.1 *Discussion*—The dispersion of the thickener forms a two-phase system and immobilizes the liquid lubricant by surface tension and other physical forces. Other ingredients are commonly included to impart special properties. **D217**

3.1.2 *thickener, n*—in lubricating grease, a substance composed of finely-divided particles dispersed in a liquid to form the product's structure.

3.1.2.1 *Discussion*—Thickeners can be fibers (such as various metallic soaps) or plates or spheres (such as certain non-soaps thickeners), which are insoluble or, at most, only very slightly soluble in the liquid lubricant. The general requirements are that the solid particles are extremely small, uniformly dispersed and capable of forming a relatively stable, gel-like structure with the liquid lubricant. **D217**

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *dropping point, n*—a numerical value assigned to a grease composition representing the temperature at which the first drop of material falls from the test cup; that temperature being the average of the thermometer readings of the sample and bath.

3.2.1.1 *Discussion*—In the normal and proper operation of this test method the temperature of the interior of the grease test cup and the temperature of the oil bath are monitored simultaneously as the bath is heated. When the first drop of material falls from the cup, the temperature of the grease test cup and the bath temperature are averaged and recorded as the result of the test.

4. Summary of Test Method

4.1 A sample of lubricating grease contained in a cup suspended in a test tube is heated in an oil bath at a prescribed rate. The temperature at which material falls from the hole in the bottom of the cup is averaged with the temperature of the oil bath and recorded as the dropping point of the grease.