



Designation: D2595 – 22

Standard Test Method for Evaporation Loss of Lubricating Greases Over Wide- Temperature Range¹

This standard is issued under the fixed designation D2595; 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 U.S. Department of Defense.

1. Scope*

1.1 This test method covers the determination of evaporation loss of lubricating greases at temperatures between 93 °C and 316 °C (200 °F and 600 °F). This test method is intended to augment Test Method [D972](#), which is limited to 149 °C (300 °F).

1.2 The values stated in SI units are to be regarded as the standard. The values 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For specific safety information, see [5.2](#).

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

[A240/A240M](#) Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

[D972](#) Test Method for Evaporation Loss of Lubricating Greases and Oils

[D4175](#) Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants

[E2877](#) Guide for Digital Contact Thermometers

¹ This test method is under the jurisdiction of ASTM Committee [D02](#) on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee [D02.G0.03](#) on Physical Tests.

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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 For definitions of terms used in this test method, refer to Terminology [D4175](#).

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

3.1.2.1 *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.

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

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

4. Summary of Test Method

4.1 A weighed sample of grease in an evaporation cell is placed in a heating device maintained at the desired test temperature. Heated air is passed over the grease surface for 22 h $\pm$ 0.1 h. The loss in weight of the sample due to evaporation is determined.

5. Significance and Use

5.1 The loss of volatile materials from greases and oils can adversely affect the original performance characteristics of a lubricant and, therefore, could be a significant factor in evaluating a lubricant for a specific use. Such volatiles can also be considered contaminants in the environment in which the lubricant is to be used. Correlation between results from this test method and service performance has not been established.

5.2 The test method can be used at any specified temperature between 93 °C and 316 °C (200 °F and 600 °F) that may be agreed upon by the user of the method. (**Warning**—This

*A Summary of Changes section appears at the end of this standard