



Standard Test Method for Determining the Water Washout Characteristics of Lubricating Greases¹

This standard is issued under the fixed designation D 1264; 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 test method has been adopted for use by government agencies to replace Method 3252 of Federal Test Method Standard No. 79 lb.

1. Scope

1.1 This test method covers the evaluation of the resistance of a lubricating grease to washout by water from a bearing, when tested at 38 and 79°C (100°F and 175°F) under the prescribed laboratory conditions. It is not to be considered the equivalent of service evaluation tests.

1.2 The values state 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 this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For specific hazard statements, see 6.2 and 7.1.

2. Referenced Documents

2.1 ASTM Standards:

D 235 Specification for Mineral Spirits (Petroleum Spirits) Hydrocarbon Dry Cleaning Solvent²

3. Summary of Test Method

3.1 The grease is packed in a ball bearing, the bearing is then inserted in a housing with specified clearances, and rotated at 600 ± 30 rpm. Water, controlled at the specified test temperature, impinges on the bearing housing at a rate of 5 ± 0.5 mL/s. The amount of grease washed out in 1 h is a measure of the resistance of the grease to water washout.

4. Significance and Use

4.1 This test method estimates the resistance of greases to water washout from ball bearings under conditions of the test. No correlation with field service has been established.

¹ This test method is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.G on Lubricating Grease.

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² *Annual Book of ASTM Standards*, Vol 05.01.

5. Apparatus³

5.1 *Ball Bearing*, ASTM test bearing size 6204.⁴

5.2 *Bearing Housing and Shield* with dimensions as shown in Fig. 1.

5.3 *Reservoir, Bearing-Housing Mount, Circulating Pump, and Drive Motor*, similar or equivalent to those shown in Fig. 1. Table 1 provides the metric equivalents.

5.4 *Heating Source*, to maintain the water temperature at $79 \pm 1.7^\circ\text{C}$ ($175 \pm 3^\circ\text{F}$).

NOTE 1—Suitable temperature control may be obtained by the use of immersion heaters, steam coils, or infrared heat lamps, in conjunction with transformers or thermostats.

5.5 *Thermometer or Thermocouple*, to determine the temperature of the water reservoir.

6. Materials and Reagents

6.1 *Distilled Water*.

6.2 *Stoddard Solvent* (**Warning**—See Note 2) in accordance with the requirements of Specification D 235, or ASTM *n*-heptane⁵ (**Warning**—See Note 3).

7. Preparation of Apparatus

7.1 Clean the reservoir and water passages by flushing with distilled water. Wipe off any oil scum which has been deposited on the surfaces of the reservoir. Clean the test bearing with Stoddard solvent (**Warning**—See Note 2.) or ASTM *n*-heptane (**Warning**—See Note 3).

NOTE 2—**Warning:** Combustible. Vapor harmful.

³ This apparatus is available from the Precision Scientific Co., 3737 Cortland St., Chicago, IL, Labline, Inc., 3072-82 W. Grant Ave., Chicago, IL, 60622 as Catalog No. 4165, and Stanhope-Seta Limited, Park Close, Englefield Green, Egham, Surrey, England, TW20 OXD. as Catalog No. 1961.

⁴ The ball bearing has been standardized by Subcommittee D 02.01 on Lubricating Grease of Committee D02 and is available from ASTM Headquarters at a nominal cost by specifying ADJD3336. Copies of correspondence and test data regarding the selection of the test bearing can be obtained from the Information Center at ASTM Headquarters by requesting Research Report RR: D02-1272.

⁵ Described in *Annual Book of ASTM Standards*, Vol 05.04, Motor Fuels Section I, Annex 2, Section A2.8 Reference Materials.