



Designation: D8206 – 24

Standard Test Method for Oxidation Stability of Lubricating Greases—Rapid Small-Scale Oxidation Test (RSSOT)¹

This standard is issued under the fixed designation D8206; 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 quantitative determination of the oxidation stability of lubricating greases with a dropping point above the test temperature.

1.2 This test method determines the resistance of lubricating greases to oxidation when stored statically in an oxygen atmosphere in a sealed system at an elevated temperature under conditions of test.

1.3 The values stated in SI units are to be regarded as the 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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

D942 Test Method for Oxidation Stability of Lubricating Greases by the Oxygen Pressure Vessel Method

D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

D4175 Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants

D6300 Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products, Liquid Fuels, and Lubricants

2.2 ISO Standard:³

EN 60751:2008 Industrial platinum resistance thermometers and platinum temperature

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this test method, refer to Terminology D4175.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *break point, n*—pressure in the test instrument, which is 10 % below the maximum pressure of the actual test run.

3.2.2 *induction period, n*—time elapsed between starting the heating procedure of the pressure vessel and the break point, measured in minutes.

4. Summary of Test Method

4.1 For this test, 4.00 g $\pm$ 0.01 g of sample is weighed in a glass dish at a temperature of 20 °C $\pm$ 5 °C and then introduced into a pressure vessel, which is subsequently charged with oxygen to 700 kPa $\pm$ 5 kPa.

4.1.1 The test is initiated by heating the pressure vessel to a temperature of 140 °C $\pm$ 0.5 °C or 160 °C $\pm$ 0.5 °C, depending on the selected test.

4.2 The pressure is recorded continuously until the break point is reached.

5. Significance and Use

5.1 This test method measures the net change in pressure resulting from consumption of oxygen by oxidation and gain in pressure due to formation of volatile oxidation by-products. This test method may be used for quality control to indicate batch-to-batch uniformity. It predicts neither the stability of greases stored in containers for long periods, nor the stability of films of greases on bearings and motor parts.

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 D02.09.0E on Oxidation of Greases.

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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 Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

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