Designation: D5349 – 19

Standard Test Method for Determination of the Moisture and Volatile Content of Sulfonated, Sulfated Oils and Fatliquors by Oven Method[1]

This standard is issued under the fixed designation D5349; 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 moisture and other volatile material under conditions of the test. It is applicable to sulfonated, sulfated oils, fats, oils, fatliquors, and softening compounds.

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

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.*

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]

D500 Test Methods of Chemical Analysis of Sulfonated and Sulfated Oils

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

3. Significance and Use

3.1 This test method is intended to determine the moisture and volatile content of sulfonated, sulfated oil, fats, oils, fatliquors, and softening compounds.

4. Apparatus

4.1 *Oven,* mechanical-convection draft capable of setting at 100 – 105 °C with a thermoregulatory system,

4.2 *Glass Beakers,* 100 to 150 mL,

4.3 *Desiccator,* containing an efficient desiccant,

4.4 *Analytical Scale,* capable of reading at minimum 3 decimal places.

5. Procedure

5.1 Weigh a beaker that has been previously dried and cooled in a desiccator.

5.2 Accurately weigh 0.5 g of a well-mixed sample into the beaker. Place the beaker in the oven, with the temperature set to 105 – 100 °C.

5.3 After exactly 1 h, remove the beaker from the oven. Cool to room temperature in a desiccator and weigh.

6. Calculation and Report

6.1 Report the moisture and volatile matter in percent, by weight, employing the calculation:

$$\%\ \text{Volatile matter (moisture)} = [(S + B) - D / S] \times 100 \quad (1)$$

where:

S = linitial sample weight,
B = weight of empty beaker, and
D = weight of dried sample plus beaker.

6.2 Reference this test method in the test report.

7. Precision and Bias

7.1 The precision of this test method is based on an inter-laboratory study of ASTM D5349 conducted in 2019. Six laboratories tested five leather oils. Every "test result" represents an individual determination, and all participants reported

[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 OilsThis test method was developed in cooperation with the American Leather Chemists Assn. (Method H 41–1957).

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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.