Designation: D 1353 – 02

Standard Test Method for
Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products[1]

This standard is issued under the fixed designation D 1353; 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 non-volatile matter in volatile solvents for use in paint, varnish, lacquer, and related products.

1.2 The following applies to all specified limits in this standard; for purposes of determining conformance with this standard, an observed value or a calculated value shall be rounded off "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding-off method of Practice E 29.

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 and health practices and determine the applicability of regulatory limitations prior to use.* For specific hazard statements, see Section 5.

1.4 For hazard information and guidance, see the supplier's Material Safety Data Sheet for materials listed in this test method.

2. Referenced Documents

2.1 *ASTM Standards:*

E 180 Practice for Determining the Precision Data of ASTM Methods for Analysis and Testing of Industrial and Specialty Chemicals[2]

E 299 Test Method for Trace Amounts of Peroxide in Organic Solvents[2]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[3]

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[1] This test method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D 01.35 on Solvents, Plasticizers, and Chemical Intermediates.

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[2] *Annual Book of ASTM Standards,* Vol 15.05.

[3] *Annual Book of ASTM Standards*, Vol 14.02.

3. Significance and Use

3.1 This test method describes the analytical measurement of residual matter in solvents that are intended to be 100 % volatile at 105 ± 5°C. Volatile solvents are used in the manufacture of paint, varnish, lacquer, and other related products, and the presence of any residue may affect the product quality or efficiency of the process. This test method is useful in manufacturing control and assessing compliance with specifications.

4. Apparatus

4.1 **Oven**, thermostatically controlled at 105 ± 5°C.

4.2 *Dish*, evaporating, platinum, 125-mL. A platinum evaporating dish is preferred. Alternatively, an aluminum or porcelain dish may be used (see Note 1).

NOTE 1—Precision data were determined utilizing only platinum dishes.

4.3 *Cylinder*, graduated, 100-mL.

4.4 *Analytical Balance*, precision to ±0.1 mg.

5. Hazards

5.1 **Warning**—Certain solvents and chemical intermediates, particularly, but not only ethers and unsaturated compounds, may form peroxides during storage. These peroxides may present a violent explosion hazard when the chemicals are evaporated. When peroxide formation is likely because of chemical type or length of storage time, analyze the material for peroxides (see Test Method E 299). If they exist in hazardous concentrations, take appropriate precautions such as destroying the peroxides before evaporation, shielding, or disposal of the sample and not running the test.

6. Procedure

6.1 Dry a 125-mL platinum evaporating dish in an oven at 105 ± 5°C and cool in a desiccator. Repeat until the weight is within 0.1 mg of the previous weighing.

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