



Designation: D 2369 – 03⁴

Standard Test Method for Volatile Content of Coatings¹

This standard is issued under the fixed designation D 2369; 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 describes a procedure for the determination of the weight percent volatile content of solventborne and waterborne coatings. Test specimens are heated at $110 \pm 5^\circ\text{C}$ for 60 min.

NOTE 1—The coatings used in these round-robin studies represented air-dried, air-dried oxidizing, heat-cured baking systems, and also included multicomponent paint systems.

1.2 Sixty minutes at $110 \pm 5^\circ\text{C}$ is a general purpose test method based on the precision obtained with both solventborne and waterborne coatings (see Section 9). ~~These coatings (single package, heat-cured) are commonly applied in factories to automobiles, metal containers, flat (coil) metal and large appliances, and many other metal parts. 9).~~

1.3 This test method is viable for coatings wherein one or more parts may, at ambient conditions, contain liquid coreactants that are volatile until a chemical reaction has occurred with another component of the multi-package system.

NOTE 2—Committee D01 has run round-robin studies on volatiles of multicomponent paint systems. The only change in procedure is to premix the weighed components in the correct proportions and allow the specimens to stand at room temperature for 1 h prior to placing them into the oven.

1.4 Test Method D 5095 for Determination of the Nonvolatile Content in Silanes, Siloxanes and Silane-Siloxane Blends Used in Masonry Water Repellent Treatments is the standard method for nonvolatile content of these types of materials.

1.5 Test Methods D 5403 for Volatile Content of Radiation Curable Materials is the standard method for determining nonvolatile content of radiation curable coatings, inks and adhesives.

1.6 Test Method D 6419 for Volatile Content of Sheet-Fed and Coldset Web Offset Printing Inks is the method of choice for these types of printing inks.

1.7 This test method may not be applicable to all types of coatings. Other procedures may be substituted with mutual agreement between the producer and the user.

NOTE 3—If unusual decomposition or degradation of the specimen occurs during heating, the actual time and temperature used to cure the coating in practice may be substituted for the time and temperature specified in this test method, subject to mutual agreement between the producer and the user. The U.S. EPA Reference Method 24 specifies $110 \pm 5^\circ\text{C}$ for 1 h for coatings.

NOTE 4—Practice D 3960 for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings describes procedures and calculations and provides guidance on selecting test methods to determine VOC content of solventborne and waterborne coatings.

1.8 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.9 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 a specific hazard statement see 7.4.1.

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 D01.21 on Chemical Analysis of Paints and Paint Materials.

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