



# Standard Test Method for Determination of the Nonvolatile Content in Silanes, Siloxanes and Silane-Siloxane Blends Used in Masonry Water Repellent Treatments<sup>1</sup>

This standard is issued under the fixed designation D5095; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method describes a procedure for the determination of the nonvolatile content ( $N_s$ ) of silanes, siloxanes, and blended silane-siloxane materials used in masonry water repellent treatments and is applicable to both solvent- and waterborne materials.

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 health and safety practices and determine the applicability of regulatory limitations prior to use.* For a specific hazard statement, see Section 7.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

D1193 Specification for Reagent Water

D3980 Practice for Interlaboratory Testing of Paint and Related Materials (Withdrawn 1998)<sup>3</sup>

E145 Specification for Gravity-Convection and Forced-Ventilation Ovens

## 3. Summary of Test Method

3.1 A designated quantity of test material is weighed into a preweighed aluminum dish containing the catalyst solution, mixed, allowed to stand for 60 min at room temperature, and then heated in an oven at  $110 \pm 5^\circ\text{C}$  for 60 min. The

nonvolatile content of the test material is calculated by subtracting the solids of the catalyst solution from the total solids by weight of the test solution.

## 4. Significance and Use

4.1 This test method is used to determine the nonvolatile content of silanes, siloxanes, and silane-siloxane blended materials used in masonry water-repellent treatments. It can be used for the purpose of calculating the volatile organic compound (VOC) content of these materials under specified test conditions.

## 5. Apparatus

5.1 *Aluminum Dishes*, 58-mm diameter by 18-mm high with a smooth (planar) bottom surface. Precondition the dishes for 30 min in an oven at  $110 \pm 5^\circ\text{C}$  and store in a desiccator prior to use.

5.2 *Forced Draft Oven*, Type IIA or Type IIB as specified by Specification E145.

5.3 *Syringes*, 1-mL and 5-mL.

5.4 *Analytical Balance*, capable of weighing to 0.1 mg.

## 6. Reagents

6.1 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean reagent water as defined by Type IV of Specification D1193.

6.2 *p-Toluenesulfonic Acid*, monohydrate.<sup>4</sup>

6.3 *Alcohol*, technical grade ethanol or isopropanol.

## 7. Hazards

7.1 In addition to other precautions, provide adequate ventilation, consistent with accepted laboratory practice, to limit the accumulation of solvent vapors.

<sup>4</sup> The sole source of supply of the solution of *p*-Toluenesulfonic acid known to the committee at this time is King Industries, Science Road, Norwalk, CT 06852. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,<sup>1</sup> which you may attend.

<sup>1</sup> 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 D01.47 on Concrete, Stone and Masonry Treatments.

Current edition approved June 1, 2013. Published June 2013. Originally approved in 1990. Last previous edition approved in 2007 as D5095 – 91 (2007). DOI: 10.1520/D5095-91R13.

<sup>2</sup> 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.

<sup>3</sup> The last approved version of this historical standard is referenced on www.astm.org.