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Standard Test Method for SHORT-TIME STABILITY AT ELEVATED TEMPERATURES OF PLASTICS CONTAINING CHLORINE¹

This standard is issued under the fixed designation D 793; 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 method has been approved for use by agencies of the Department of Defense and for listing in the DoD Index of Specifications and Standards.

The committee responsible for this standard has voted its withdrawal. In the absence of substantial reasons that it should be continued, the Society will approve withdrawal from publication in May 1983.

¹NOTE—The equation in 8.2 was corrected editorially in February 1977.

1. Scope

1.1 This method covers the determination of the short-time stability at elevated temperatures of plastics containing chlorine.

2. Apparatus (see Fig. 1)

2.1 Preheater Coil.

2.2 *Glass Tube*—A glass tube 6 mm in diameter which is drawn to a point with an opening of 2 to 3 mm and which extends to within $\frac{1}{2}$ in. of the bottom of the flask.

2.3 *Constant-Temperature Bath*, controlled at 180 ± 2 C.

2.4 *Absorption Tube*—A tube 18 to 20 mm in diameter and 13 to 20 cm in length for absorbing hydrogen chloride in the sodium hydroxide.

2.5 Nitrogen Cylinder.

3. Reagents

3.1 *Purity of Reagents*—Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available.² Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

3.2 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean distilled water or water of equal purity.

3.3 *Ammonium Thiocyanate or Potassium Thiocyanate, Standard Solution (0.02 N)*—Prepare and standardize a 0.02 N solution of ammonium thiocyanate (NH_4SCN) or potassium thiocyanate (KSCN).

3.4 *Ferric Nitrate Solution (5 percent)*—Prepare an approximate 5 percent solution of ferric nitrate ($\text{Fe}(\text{NO}_3)_3$) for use as an indicator.

3.5 *Nitric Acid (sp gr 1.42)*—Concentrated nitric acid (HNO_3).

3.6 *Silver Nitrate, Standard Solution (0.02 N)*—Prepare and standardize a 0.02 N solution of silver nitrate (AgNO_3).

3.7 *Sodium Hydroxide Solution (4 g/liter)*—Dissolve 4 g of sodium hydroxide (NaOH) in water and dilute to 1 liter.

4. Test Specimens

4.1 The test specimen shall be 10 g of the plastic cut into pieces so that one dimension is no larger than $\frac{1}{16}$ in. The particle size of the specimen shall be agreed upon by the purchaser and the manufacturer.

¹ This specification is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D-20.15 on Thermoplastic Materials.

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² "Reagent Chemicals, American Chemical Society Specifications," Am. Chemical Soc., Washington, D.C. For suggestions on the testing of reagents not listed by the American Chemical Society, see "Reagent Chemicals and Standards," by Joseph Rosin, D. Van Nostrand Co., Inc., New York, N.Y., and the "United States Pharmacopeia."