



Designation: D2222 – 13

Standard Test Method for Methanol Extract of Vinyl Chloride Resins¹

This standard is issued under the fixed designation D2222; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope*

1.1 This test method covers the determination of the methanol extract, or nonvolatile methanol-soluble portion, of vinyl chloride resins.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no known ISO equivalent to this test method.

2. Referenced Documents

2.1 *ASTM Standards:*²

D883 Terminology Relating to Plastics

D1600 Terminology for Abbreviated Terms Relating to Plastics

3. Terminology

3.1 *Definitions:* Definitions are in accordance with Terminologies **D883** and **D1600** unless otherwise indicated.

4. Summary of Test Method

4.1 The methanol-soluble materials are extracted from the resin in a Soxhlet extractor, the methanol evaporated to dryness, and the residue weighed as the weight percent methanol extract.

5. Significance and Use

5.1 The methanol extract test is most commonly employed with paste- or dispersion-type vinyl resins intended for organo-

sol or plastisol applications. The test result is a quantitative measure of the methanol-soluble, nonvolatile, essentially nonpolymeric content of the virgin, unmodified resin. The major ingredient removed is the soap system employed in the polymerization reaction; methanol extract provides a measure of lot-to-lot uniformity of the resin in this respect.

6. Apparatus

6.1 *Soxhlet Extractor.*

6.2 *Extraction Thimbles, 33 by 94-mm.*

6.3 *Oven, Constant-Temperature, maintained at $105 \pm 3^\circ\text{C}$.*

6.4 *Electric Heating Mantle* for a 250-mL extractor flask, or electric strip heaters, equipped with a suitable variable transformer to control the rate of heating.

7. Reagents

7.1 *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. It is possible to use other grades, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

8. Procedure

8.1 Weigh to the nearest 0.001 g approximately 12 g of the resin sample into an empty extraction thimble.

8.2 Cover the resin in the thimble with a small pad of glass wool to prevent spattering of resin during the extraction and place the thimble in the extractor.

8.3 Weigh to the nearest 0.001 g and record the tare weight of a clean, dry, flat-bottom, extractor flask containing a Raschig ring.

8.4 Add 200 mL of anhydrous methanol to the flask and connect the flask to the extractor.

8.5 Run a blank determination on the methanol simultaneously with each set of extractions.

8.6 Start the extraction and regulate the reflux so that the methanol collecting in the thimble drains at least six times per hour.

¹ This test method is under the jurisdiction of ASTM Committee **D20** on Plastics and is the direct responsibility of Subcommittee **D20.15** on Thermoplastic Materials (Section D20.15.08).

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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.

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