



Designation: D 4706 – 93 (Reapproved 1998)

Standard Test Method for Qualitative Determination of Methylol Group in Phenolic Resins¹

This standard is issued under the fixed designation D 4706; 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.

1. Scope

1.1 This test method covers a procedure to determine qualitatively the presence of methylol group in phenol-formaldehyde resins.

1.2 *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.*

2. Summary of Test Method

2.1 This test method of qualitatively determining the presence of methylol groups in a phenol resin uses the reaction of ferric chloride with the methylol group to produce a blue color at room temperature.

3. Significance and Use

3.1 This test method provides a fast and simple method for determining the presence of methylol group for quality control testing.

4. Apparatus

4.1 *Test tube*, 6 by 1-in. (152 by 25-mm) glass.

4.2 *Acetone*, reagent grade.

4.3 *Ferric chloride*, 5 % aqueous solution.

4.4 *Balance*.

5. Procedure

5.1 Place 0.1 g of the specimen under test in a test tube.

5.2 Add 10 mL of acetone.

5.3 Shake and dissolve specimen.

5.4 Add two drops of 0.5 % ferric chloride solution and swirl.

5.5 Observe color, yellow or blue.

6. Report

6.1 Report the following information:

6.1.1 Yellow equals methylol group absent.

6.1.2 Blue equals methylol group present.

7. Precision and Bias

7.1 Precision and bias do not apply since this is a qualitative test method that is recorded by a color change.

8. Keywords

8.1 ferric chloride; methylol group content; phenol-formaldehyde (PF) plastics; plastics; general; and resins (sub-heading phenolic).

¹ This test method is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.33 on Polymers and Resins.

Current edition approved April 15, 1993. Published June 1993. Originally published as D 4706 – 87. Last previous edition D 4706 – 87.

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