Designation: D 1488 – 00

Standard Test Method for Amylaceous Matter in Adhesives[1]

This standard is issued under the fixed designation D 1488; 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 covers the determination of the presence or absence of amylaceous (starch-like) material in phenol-, resorcinol-, and melamine-resin adhesives.

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

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.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 907 Terminology of Adhesives[2]

3. Terminology

3.1 *Definitions*— Many terms in this test method are defined in Terminology D 907.

4. Summary of Test Method

4.1 A reagent solution is added to the adhesive in question which causes any starch-like material to become insoluble. The resultant material then changes color when another reagent is added if any starch-like matter is present.

5. Significance and Use

5.1 This test method is used to determine if a melamine resin, a phenol, or a resorcinol adhesive contains any starch-like filler, the presence of which could affect water resistance or strength, or both.

6. Reagents

6.1 *Iodine Test Solution*—Add 5 g (0.18 oz) of iodine and 5 g of potassium iodide to 100 mL (3 oz) of distilled water.

6.2 *Acetic Acid—Ethyl Alcohol Solution*—Add 20 parts of glacial acetic acid and 20 parts of 95 % ethyl alcohol to 60 parts of distilled water by volume.

7. Sampling

7.1 Except in special cases, take a composite of the sample of the adhesive when possible, from three or more separate containers, chosen at random. Also, take samples from containers that appear to be nonrepresentative, and test such samples separately. Before a sample is taken, thoroughly mix the contents of the container if there is a tendency for the materials to separate. Place the samples immediately in airtight containers and transport to the testing laboratory in these containers. Take precautions to reduce evaporation or drying to a minimum.

8. Procedure

8.1 *Phenol and Resorcinol Adhesives*—Weigh 0.5 g (0.018 oz) of thoroughly mixed adhesive into a small-diameter test tube. Add 5 mL (0.15 oz) of 95 % ethyl alcohol. Shake thoroughly, allow the insoluble matter to settle, and decant the supernatant liquid. Repeat twice more with the ethyl alcohol and three times with distilled water. After the final decantation, add one drop of the iodine solution to the residue. A darkening of the residue denotes a positive test for the presence of amylaceous matter.

8.2 *Melamine Resins*— Use the same procedure as specified in 8.1 except substitute an acetic acid-ethyl alcohol solution. When the melamine adhesive is supplied with separate hardener, use ethyl alcohol for the unmixed hardener.

9. Report

9.1 Report the following information:

9.1.1 Complete identification of the adhesive tested, including type, source, manufacturer's code number, lot or batch number, condition, and date, and

9.1.2 Positive or negative reaction to the iodine test.

10. Precision and Bias

10.1 No information is presented about either the precision or bias of Test Method D 1488 for measuring the presence or

[1] This test method is under the jurisdiction of ASTM Committee D-14 on Adhesives and is the direct responsibility of Subcommittee D14.30 on Wood Adhesives.

Current edition approved March 10, 2000. Published May 2000. Originally published as D 1488 – 57. Last previous edition D 1488 – 96.

[2] *Annual Book of ASTM Standards*, Vol 15.06.

absence of amylaceous matter in adhesives since the result is nonquantitative.

11. Keywords

11.1 amylaceous matter; iodine test; melamine; phenol; resorcinol; starch-like