



Standard Test Methods for Chemical Analysis of Chromated Copper Arsenate¹

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1. Scope

1.1 These test methods cover the chemical analysis of solid chromated copper arsenate and solutions of this material.

1.1.1 Test Method D 38 covers the sampling of wood preservatives prior to testing.

1.2 The analytical procedures occur in the following order:

	Sections
Pentavalent Arsenic (calculated as As ₂ O ₅)	7-9
Copper (calculated as CuO)	10-13
Hexavalent Chromium (calculated as CrO ₃)	14-16

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.* Specific precautionary statements are given in 8.2, 12.1.2, and in accordance with the safety precautions section of Test Method D 4278.

2. Referenced Documents

2.1 ASTM Standards:

- D 38 Test Methods for Sampling Wood Preservatives Prior to Testing²
- D 1033 Methods of Chemical Analysis of Chromated Zinc Chloride³
- D 1035 Test Methods for Chemical Analysis of Fluor-Chrome-Arsenate-Phenol²
- D 1193 Specification for Reagent Water⁴
- D 1326 Methods for Chemical Analysis of Ammoniacal Copper Arsenate and Ammoniacal Copper Zinc Arsenate²
- D 1625 Specification for Chromated Copper Arsenate²
- D 1627 Methods for Chemical Analysis of Acid Copper Chromate²

¹ These test methods are under the jurisdiction of ASTM Committee D-7 on Wood and are the direct responsibility of Subcommittee D07.06 on Treatments for Wood Products.

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The analytical methods and sampling procedures are substantially the same as those given in the American Wood-Preservers' Association Standard Methods for Analysis of Water-Borne Preservatives and Fire-Retardant Formulations (A2-82). Acknowledgment is made to the American Wood-Preservers' Association for its development of the subject matter covered in these test methods.

² *Annual Book of ASTM Standards*, Vol 04.10.

³ Discontinued—See 1992 *Annual Book of ASTM Standards*, Vol 04.09.

⁴ *Annual Book of ASTM Standards*, Vol 11.01.

D 4278 Test Method for Wet Ashing Procedure for Preparing Wood Samples for Inorganic Chemical Analysis²

3. Summary of Test Methods

3.1 Add 20 mL of tartaric acid solution to a 250-mL Erlenmeyer flask, then add 2 mL of the ACA concentrate. The resulting solution should become light blue-green. Twenty millilitres of sodium bicarbonate solution is then added and the solution will turn light blue. Two millilitres of the starch indicator is added. To this solution, one drop of iodine solution from a buret is added. If the solution turns a dark blue and remains, then the aeration is complete.

4. Significance and Use

4.1 These test methods test the completion of aeration which is used to convert trivalent arsenic to pentavalent arsenic.

5. Purity of Reagents

5.1 *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.⁵ 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.

5.2 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean reagent water conforming to Specification D 1193.

6. Sampling

6.1 When the material to be sampled is a water solution, it shall be mixed to ensure uniformity and the sample shall be at least 0.45 L and preferably 0.9 L. The sample shall be representative and taken by a “thief” or other device. The sample shall be collected and stored in properly closed containers of glass or other suitable material.

⁵ *Reagent Chemicals, American Chemical Society Specifications*, American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see *Anal. Standards for Laboratory Chemicals*, BDH Ltd., Poole, Dorset, U.K., and the *United States Pharmacopeia and National Formulary*, U.S. Pharmaceutical Convention, Inc. (USPC), Rockville, MD.