



# Standard Specification for Ammoniacal Copper Arsenate and Ammoniacal Copper Zinc Arsenate<sup>1,2</sup>

This standard is issued under the fixed designation D 1325; 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 specification covers ammoniacal copper arsenate solution for use in the preservative treatment of wood.

## 2. Referenced Documents

2.1 *ASTM Standards:*

D 1326 Test Method for Chemical Analysis of Ammoniacal Copper Zinc Arsenate<sup>3</sup>

2.2 *AWPA Standard:*

AWPA P5 Standards for Waterborne Preservatives<sup>4</sup>

## 3. Composition and Properties

3.1 The ingredients of ammoniacal copper arsenate solution (ACA) shall be present in the following proportions:

	Minimum	Nominal
Copper, calculated as CuO, %	47.7	49.8

Arsenic, calculated as As <sub>2</sub> O <sub>5</sub> , %	47.6	50.2
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3.2 The ingredients of ammoniacal copper zinc arsenate (ACZA) solution shall be present in the following proportions:

Copper, calculated as CuO, %	45.0	50.0
Arsenic, calculated as As <sub>2</sub> O <sub>5</sub> , %	22.5	25.0
Zinc, calculated as ZnO, %	22.5	25.0

3.3 The ingredients listed in 3.1 for ACA shall be dissolved in an aqueous solution of ammonia of a strength such that the ammonia content of the solution will be 1.38 times the copper content when copper is calculated as CuO. To aid in solution, not over 1.7 % of the total active ingredients (CuO + As<sub>2</sub>O<sub>5</sub>) of glacial acetic acid may be added.

3.4 The ingredients listed in 3.2 for ACZA shall be dissolved in a solution of ammonia to copper oxide ratio of 1.38:1 (wt. basis). It is necessary to add ammonium bicarbonate (NH<sub>4</sub>HCO<sub>3</sub>) at least equal to 0.92 times the weight of copper oxide.

3.5 The solid preservative or treating solution shall be made up of water soluble compounds selected from the following groups each in excess of 95% purity on an anhydrous basis:

- Bivalent copper (for example, cupric hydroxide)
- Pentavalent arsenic (for example, arsenic acid)
- Zinc oxide (for example, zinc oxide)

## 4. Chemical Analysis

4.1 The material shall be analyzed in accordance with Methods D 1326.

## 5. Keywords

5.1 ammoniacal copper arsenate

<sup>1</sup> This specification is under the jurisdiction of the ASTM Committee D-7 on Wood and is the direct responsibility of Subcommittee D07.06 on Treatments for Wood Products.

Current edition approved July 15, 1994. Published September 1994. Originally published as D 1325-54T. Last previous edition D 1325-76 (1992)<sup>ε1</sup>.

<sup>2</sup> This specification is identical with the Standards for Ammoniacal Copper Arsenate (ACA) in Section 2 and Ammoniacal Copper Zinc Arsenate (ACZA) in Section 3 of the American Wood-Preservers' Assn. Standards for Waterborne Preservatives (P5-92). Acknowledgment is made to the American Wood-Preservers' Association for its development of the subject matter covered in this specification.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 04.10.

<sup>4</sup> Available from American Wood-Preservers' Association, P.O. Box 286, Woodstock, MD 21163-0286.

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