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Standard Specification for Ammoniacal Copper Quat Type B (ACQ-B) 1[1, 2]

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1. Scope

1.1 This specification covers ammoniacal copper quat Type B (ACQ-B) solution for use in the preservative treatment of wood.

2. Referenced Documents

2.1 *ASTM Standards:*

D 5584 Test Methods for Chemical Analysis of Ammoniacal Copper Quat, Type B (ACQ-B)[3]

2.2 *American Wood Preserver's Association (AWPA) Standard:*

AWPA P5 Standards for Waterborne Preservatives[4]

3. Composition and Properties

3.1 The ingredients of ammoniacal copper quat (ACQ-B) solution shall be present in the following proportions, subject to the tolerances listed in 3.3.

	% by weight
Copper, calculated as CuO	66.7
Quat as didecyldimethylammonium chloride (DDAC)	33.3

3.2 The ingredients listed in 3.1 shall be dissolved in an aqueous solution of ammonia (NH_3). The weight of ammonia contained in a treating solution shall be at least 1.0 times the weight of copper oxide. To aid in solution, it is also necessary that the treating solution contain carbonate anions, such as from ammonium bicarbonate. The amount of carbonate, expressed as CO_2, shall be at least 0.65 times the amount of copper oxide.

3.3 The composition of the preservative present in a treating solution may vary within the following limits (see 3.4):

	%, min	%, max
Copper as CuO	62.0	71.0
Quat as DDAC	29.0	38.0

3.4 The composition of treating solution may deviate outside the limits specified in 3.3 provided that: (*1*) the preservative retention is determined by assay and that the retention so determined conforms to the following minimum active ingredient levels as outlined in Table 1; and (*2*) immediate action is taken to adjust the composition of the treating solution.

3.5 The treating solution shall contain bivalent copper and quaternary ammonium compound derived from compounds in excess of 95 % purity on an anhydrous basis.

4. Chemical Analysis

4.1 The material shall be analyzed in accordance with Test Methods D 5584.

5. Keywords

5.1 ACQ-B; ammoniacal copper quat; preservative

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

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[2] This specification is identical in substance with the Standards for ACQ-B in Section 13 of the American Wood Preserver's Association Standards for Waterborne Preservatives (P5-92).

[3] *Annual Book of ASTM Standards*, Vol 04.10.

[4] Available from American Wood Preserver's Assoc., P.O. Box 286, Woodstock, MD 21163.

TABLE 1 Minimum Retention of Individual Components

ACQ-B Retention as Specified, pcf	Copper as CuO	Quat, Active	Sum, min
0.25	0.13	0.07	0.25
0.40	0.21	0.11	0.40
0.60	0.32	0.16	0.60
0.80	0.42	0.22	0.80
1.0	0.53	0.27	1.0