

SEMI C46-0306

GUIDELINE FOR 25% TETRAMETHYLAMMONIUM HYDROXIDE

This standard was technically approved by the global Liquid Chemicals Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on November 29, 2005. It was available at www.semi.org in February 2005 and on CD-ROM in March 2005. Originally published in 1991; previously published June 1999.

NOTICE: This document was completely rewritten in 2006.

1 Purpose

1.1 The purpose of this document is to provide guidelines for grades of 25% tetramethylammonium hydroxide for which a need has been identified.

2 Scope

2.1 The scope of this document lists the proposed impurity limits of 25% tetramethylammonium hydroxide used in the semiconductor industry.

NOTICE: This standard does not purport to address safety issues, if any, associated with its use. It is the responsibility of the users of this standard to establish appropriate safety and health practices and determine the applicability of regulatory or other limitations prior to use.

3 Limitations

3.1 None.

4 Referenced Standards and Documents

4.1 None.

5 Terminology

5.1 None.

6 Physical Property (for information only)

6.1 Not applicable.

7 Requirements

7.1 The requirements for 25% tetramethylammonium hydroxide for Tier A are listed in Table 1.

8 Grade 1 Procedures

8.1 This section does not apply to this chemical.

9 Grade 2 Procedures

9.1 This section does not apply to this chemical.

10 Grade 3 Procedures

10.1 This section does not apply to this chemical.

11 Grade 4 Procedures

11.1 This section does not apply to this chemical.

12 Grade 5 Procedures

12.1 This section does not apply to this chemical.

13 Tier A Procedures

13.1 Standardized test methods are being developed for all parameters at the purity levels indicated. Until standardized test methods are published, test methodology shall be determined by user and producer. The Liquid

Chemicals Committee considers a test method to be valid only if there is a documented recovery study showing a recovery of 75-125%. Recovery is for a known sample spike at 50% of the specified level.

14 Tier B Procedures

14.1 This section does not apply to this chemical.

15 Tier C Procedures

15.1 This section does not apply to this chemical.

16 Tier D Procedures

16.1 This section does not apply to this chemical.

Table 1 Impurity Limits and Other Requirements for 25% Tetramethylammonium Hydroxide

Previous SEMI Reference #	C7.14-91
	Tier A
	(Guideline)
Assay (wt %)	25.0 ± 0.1
Carbonate (as CO ₃ ⁻²)	300 ppb max
Total Halides (as Cl ⁻¹)	5 ppb max
Color (APHA)	10 max
Aluminum (Al)	10 ppb max
Antimony (Sb)	10 ppb max
Arsenic (As)	10 ppb max
Barium (Ba)	10 ppb max
Boron (B)	10 ppb max
Cadmium (Cd)	10 ppb max
Calcium (Ca)	10 ppb max
Chromium (Cr)	10 ppb max
Copper (Cu)	10 ppb max
Iron (Fe)	5 ppb max
Lead (Pb)	10 ppb max
Lithium (Li)	10 ppb max
Magnesium (Mg)	10 ppb max
Manganese (Mn)	10 ppb max
Nickel (Ni)	10 ppb max
Potassium (K)	10 ppb max
Sodium (Na)	10 ppb max
Tin (Sn)	10 ppb max
Titanium (Ti)	10 ppb max
Vanadium	10 ppb max
Zinc (Zn)	10 ppb max
Particles in bottles: size, #/mL	#1

#1 Due to the limitations of current particle counters, particle size and number are to be agreed upon between supplier and user. See SEMI C1, 'Calibration and Measurement Method for Particles in Liquids'.