

SEMI C22-0699

GUIDELINE FOR BORON TRIBROMIDE

This guideline was technically approved by the Global Process Chemicals Committee and is the direct responsibility of the North American Process Chemicals Committee. Current edition approved by the North American Regional Standards Committee on April 23, 1999. Initially available on SEMI OnLine May 1999; to be published June 1999. This document replaces SEMI C7.17 in its entirety. Originally published in 1994.

1 Purpose

1.1 The purpose of this document is to standardize requirements for boron tribromide used in the semiconductor industry and testing procedures to support those standards. Test methods have been shown to give statistically valid results. This document also provides guidelines for grades of boron tribromide for which a need has been identified. In the case of the guidelines, the test methods may not have been statistically validated yet.

2 Scope

2.1 The scope of this document is all grades of boron tribromide used in the semiconductor industry.

3 Limitations

3.1 None.

4 Referenced Documents

4.1 None.

5 Terminology

5.1 None.

6 Physical Property (for information only)

Clear Colorless Liquid Density at 20°C	2.54 g/mL
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7 Requirements

7.1 The requirements for boron tribromide 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 VLSI Grade Procedures

13.1 This section does not apply to this chemical.

14 Tier A Procedures

14.1 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 Process 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.

15 Tier B Procedures

15.1 This section does not apply to this chemical.

16 Tier C Procedures

16.1 This section does not apply to this chemical.

17 Tier D Procedures

17.1 This section does not apply to this chemical.

Table 1 Impurity Limits and Other Requirements for Boron Tribromide

Previous SEMI Reference #	C7.17-94
	Tier A
	(Guideline)
Color (APHA)	60 max
Aluminum (Al)	5 ppb max
Antimony (Sb)	5 ppb max
Arsenic (As)	10 ppb max
Barium (Ba)	5 ppb max
Bismuth (Bi)	5 ppb max
Calcium (Ca)	10 ppb max
Chromium (Cr)	5 ppb max
Cobalt (Co)	5 ppb max
Copper (Cu)	5 ppb max
Gallium (Ga)	5 ppb max
Gold (Au)	5 ppb max
Iron (Fe)	10 ppb max
Lead (Pb)	5 ppb max
Lithium (Li)	5 ppb max
Magnesium (Mg)	10 ppb max
Manganese (Mn)	5 ppb max
Mercury (Hg)	10 ppb max
Nickel (Ni)	5 ppb max
Potassium (K)	5 ppb max
Silver (Ag)	5 ppb max
Sodium (Na)	5 ppb max
Strontium (Sr)	5 ppb max
Tin (Sn)	5 ppb max
Titanium (Ti)	5 ppb max
Zinc (Zn)	5 ppb max
Particles in bottles: size, #/mL	≥0.5 μm, 25 max

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