

SEMI C3.44-91 (Withdrawn 0701) STANDARD FOR DIBORANE (B₂H₆) (PROVISIONAL)

This Standard was technically approved by the Gases Global Technical Committee. Available at www.semi.org in July 2001; originally published in 1991.

NOTICE: This Document was balloted and approved for withdrawal in 2001.

1 Description

1.1 Diborane is toxic, flammable, colorless gas. It has a sickly sweet odor.

2 Specifications (See Note 1)

QUALITY: 99.8%

<i>Impurities</i>	<i>Maximum Acceptable Level (ppm)^{#1}</i>
Carbon Dioxide (CO ₂)	500
Hydrocarbons (C ₁ -C ₄)	10
Hydrogen (H ₂)	50
Nitrogen (N ₂)	50
Oxygen (O ₂)	1
Water (H ₂ O) (v/v)	1
Boron Trifluoride (BF ₃)	50
Tetraborane (B ₄ H ₁₀)	300
Pentaborane (B ₅ H ₉)	30
Pentaborane (B ₅ H ₁₁)	20
TOTAL IMPURITIES	1012

^{#1} An analysis of significant figures has not been considered. The number of significant figures will be based on analytical accuracy and the precision of the provided procedure.

NOTE 1: Diborane is unstable and will decompose after filling. Therefore, this specification is applicable only at the time of filling.

3 Physical Constants (for information only)

	<i>Metric Units</i>	<i>US Units</i>
Molecular weight	27.67	27.67
Boiling point at 1 atm	-92.5°C	-134.5°F
Density of gas at 0°C (32°F) and 1 atm	1.247 kg/m ³	0.078 lb/ft ³
Specific gravity of gas at 0°C and 1 atm	0.952	0.952
Critical Pressure	40.06 bar	580.8 psia
Critical Temperature	16.7°C	62.1°F



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