

# ELECTRONIC GASES

## HYDROGEN SELENIDE $H_2Se$

Hydrogen Selenide is a colorless, flammable, extremely toxic gas with a very unpleasant odor. It begins to dissociate at approximately 160°C. It decomposes in air to form a red selenium precipitate. It is shipped as a liquefied gas under its own vapor pressure.

### Container Information

CYLINDER SIZE	CONTENTS		Pressure@21.1°C Valve Outlet DOT Shipping Description:	125 psig CGA-660 Hydrogen Selenide, Anhydrous, 2.3, UN 2202 Poison-Inhalation Hazard Hazard Zone A Poison Gas Flammable Gas
	LB	KG		
044	100	45.4	DOT Shipping Labels  DOT Guide No. CAS Registry No.	13 7783-07-5
016	50	22.7		
008	25	11.3		

### Specifications

COMPONENT	VLSI	UHP
HYDROGEN SELENIDE	99.999%min	99.99%min
Hydrogen Sulfide	< 1 ppm	< 10 ppm
Nitrogen	< 5 ppm	< 5 ppm
Oxygen	< 1 ppm	< 5 ppm
THC (as Methane)	< 1 ppm	< 1 ppm
Water	< 1 ppm	< 100 ppm
Arsine	< 0.5 ppm	
Phosphine	< 0.5 ppm	
Silane	< 0.5 ppm	

**SHELF LIFE:** 1 year

### Physical Properties

Molecular Weight	80.97
Flammability Limits in air	Not Available
Specific Gravity,	
Gas @ 70°F(21.1°C), 1 atm(Air=1)	2.8
Density, Gas @ 70°F(21.1°C), 1 atm	0.209lbs/ft <sup>3</sup> (3.34g/l)
Specific Volume, Gas @ 70°F(21.1°C), 1 atm	4.80ft <sup>3</sup> /lb (0.301l/g)
Boiling Point @ 1 atm	-43.6°F (-42.0°C)
Melting Point @ 1 atm	-86.6°F (-65.9°C)
Critical Temperature	280.4°F (138.0°C)
Critical Pressure	1293.2 psia (89 bar)
Toxicity	
PEL/TLV	0.05 ppm
LC <sub>50</sub>	2 ppm
IDLH	2 ppm