

ELECTRONIC GASES

ARSINE AsH₃

Arsine is a highly toxic, flammable colorless gas with an odor similar to garlic. The odor is subjective and therefore not reliable, and should not be used to detect the presence of the gas. It is shipped as a liquefied gas under its own vapor pressure.

Container Information

CYLINDER SIZE	CONTENTS		Pressure@21.1°C Valve Outlet	205 psig std: CGA-350 opt: DISS-632 DOT Shipping Description: Arsine, 2.3, UN 2188 Poison-Inhalation Hazard Hazard Zone A Poison Gas Flammable Gas DOT Shipping Labels DOT Guide No. CAS Registry No.
	LB	KG		
044	50	22.7		
016	25	11.3		
008	10	4.5		
003	5	2.3		

Specifications

COMPONENT ARSINE	ULSI 99.99994%min	VLSI 99.9999%min	MOCVD 99.9998%min	ELECTRONIC 99.999%min
Argon	< 50 ppb	< 100 ppb	< 1 ppm	
Nitrogen	< 50 ppb	< 100 ppb	< 1 ppm	< 5 ppm
Oxygen	< 50 ppb	< 100 ppb	< 1 ppm	< 2 ppm
Carbon Dioxide	< 50 ppb	< 100 ppb	< 1 ppm	< 1 ppm
Carbon Monoxide	< 50 ppb	< 100 ppb	< 0.5 ppm	< 0.5 ppm
Methane	< 50 ppb	< 100 ppb	< 1 ppm	
Ethane	< 50 ppb	< 100 ppb	< 1 ppm	
Propane	< 50 ppb	< 100 ppb	< 1 ppm	
THC (as Methane)				< 1 ppm
Phosphine	< 50 ppb	< 100 ppb	< 2 ppm	< 2 ppm
Water	< 100 ppb	< 100 ppb	< 0.5 ppm	< 3 ppm
Germane	< 50 ppb	< 50 ppb		
Silane	< 100 ppb	< 100 ppb		

SHELF LIFE: 18 months

Physical Properties

Molecular Weight	77.95
Flammability Limits in air	LFL 5.8%
Specific Gravity,	
Gas @ 70°F(21.1°C), 1 atm(Air=1)	2.69
Density, Gas @ 70°F(21.1°C), 1 atm	0.20lbs/ft³ (3.24g/l)
Specific Volume, Gas @ 70°F(21.1°C), 1 atm	4.95ft³/lb (0.309l/g)
Boiling Point @ 1 atm	-80.5°F (-62.5°C)
Melting Point @ 1 atm	-178.5°F (-116.9°C)
Critical Temperature	211.8°F (99.9°C)
Toxicity	
PEL / TLV	0.05 ppm
TC _{Lo} (Inhalation Human)	3 ppm
LC ₅₀ RAT	75 ppm
IDLH	6 ppm

ULSI Metals Specifications

ELEMENT	SYMBOL	GAS PHASE	LIQUID PHASE
Antimony	Sb	< 25	< 100
Cadmium	Cd	< 10	< 25
Calcium	Ca	< 10	< 10
Chromium	Cr	< 10	< 10
Cobalt	Co	< 10	< 10
Copper	Cu	< 10	< 10
Gallium	Ga	< 10	< 50
Germanium	Ge	< 10	< 100
Iron	Fe	< 50	< 50
Lead	Pb	< 10	< 10
Lithium	Li	< 1	< 10
Magnesium	Mg	< 10	< 10
Manganese	Mn	< 5	< 5
Molybdenum	Mo	< 10	< 100
Nickel	Ni	< 10	< 10
Potassium	K	< 1	< 10
Selenium	Se	< 1	< 100
Silicon	Si	< 10	< 10
Sodium	Na	< 10	< 10
Tin	Sn	< 10	< 300
Zinc	Zn	< 10	< 50

*all values in ppb, lot analysis only