

ELECTRONIC GASES

CHLORINE Cl_2

Chlorine is a greenish-yellow, toxic, nonflammable, oxidizing gas with a pungent, suffocating odor. It is irritating to the mucous membranes. It is shipped as a liquefied gas under its own vapor pressure.

Container Information

CYLINDER SIZE	CONTENTS		Pressure@21.1°C Valve Outlet	85.3 psig CGA-660
	LB	KG		
049	100	45.4	DOT Shipping Description:	Chlorine, 2.3, UN 1017 Poison-Inhalation Hazard Hazard Zone B
044	90	40.8		
016	40	18.1	DOT Shipping Labels DOT Guide No. CAS Registry No.	Poison Gas 20 7782-50-5
008	10	4.5		

Specifications

COMPONENT CHLORINE	ULSI 99.999%min	VLSI 99.998%min	ELECTRONIC 99.99%min
Carbon Dioxide	< 3000 ppb	< 8 ppm	< 50 ppm
Carbon Monoxide	< 500 ppb		
Hydrogen	< 1000 ppb	< 1 ppm	< 5 ppm
Nitrogen	< 2000 ppb	< 4 ppm	< 20 ppm
Oxygen	< 2000 ppb	< 4 ppm	< 10 ppm
THC (as Methane)	< 500 ppb	< 1 ppm	< 5 ppm
Water	< 1000 ppb	< 2 ppm	< 10 ppm

SHELF LIFE: 2 years

Physical Properties

Molecular Weight	70.906
Flammability Limits in air	Nonflammable
Specific Gravity, Gas @ 70°F(21.1°C), 1 atm(Air=1)	2.473
Density, Gas @ 70°F(21.1°C), 1 atm	0.185lbs/ft³ (2.98g/l)
Specific Volume, Gas @ 70°F(21.1°C), 1 atm	5.4ft³/lb (0.336l/g)
Boiling Point @ 1 atm	-29.4°F (-34.1°C)
Melting Point @ 1 atm	-149.8°F (-101.0°C)
Critical Temperature	291.2°F (144.0°C)
Toxicity	
PEL /TLV	0.5 ppm
STEL	1 ppm
LC ₅₀	293 ppm
IDLH	30 ppm

ULSI Metals Specifications

ELEMENT	SYMBOL	GAS PHASE	LIQUID PHASE
Antimony	Sb	< 5	< 5
Cadmium	Cd	< 10	< 10
Calcium	Ca	< 25	< 25
Chromium	Cr	< 10	< 100
Cobalt	Co	< 5	< 5
Copper	Cu	< 10	< 10
Gallium	Ga	< 10	< 10
Germanium	Ge	< 10	< 10
Iron	Fe	< 100	<1000
Lead	Pb	< 10	< 10
Lithium	Li	< 1	< 1
Magnesium	Mg	< 2	< 10
Manganese	Mn	< 2	< 2
Molybdenum	Mo	< 10	< 10
Nickel	Ni	< 10	< 500
Potassium	K	< 1	< 1
Silicon	Si	< 50	< 200
Sodium	Na	< 10	< 10
Tin	Sn	< 10	< 100
Zinc	Zn	< 2	< 2

*all values in ppb, lot analysis only