

ELECTRONIC GASES

SILICON TETRACHLORIDE SiCl_4

Silicon Tetrachloride is a corrosive, colorless, nonflammable liquid with a suffocating odor. The vapors are irritating to the mucous membranes and form dense fumes when exposed to humid air. It hydrolyses rapidly in moist air, releasing hydrogen chloride. It is shipped as a liquid in special stainless steel containers, capable of delivering either vapor or liquid.

Container Information

CYLINDER SIZE	CONTENTS		Pressure@21.1°C	5-20 psig (pressurized with a N_2 head)
	LB	KG	Valve Outlet (as requested)	SWAGELOK, VCO, VCR
210MC	600	272	DOT Shipping Description:	Silicon Tetrachloride 8, UN 1818, PG II
38L	100	45.4	DOT Shipping Labels	Corrosive
			DOT Guide No.	39
			CAS Registry No.	10026-04-7

* ASME Container also available.

Specifications

COMPONENT	SEMICONDUCTOR	FIBER-OPTIC
SILICON TETRACHLORIDE	99.94 wt%	99.999999% min
Resistivity	> 300 ohm-cm	
Boron	< 0.3 ppba silicon	
Total Donor	< 1.5 ppba silicon	
Aluminum	< 50 ppbw	see Fiber Optic Specifications below
Carbon	< 1.0 ppma	
Iron	< 50 ppbw	
Other Chlorosilane	< 600 ppm	

SHELF LIFE: 2 years

Physical Properties

Molecular Weight	169.89
Flammability Limits in air	Nonflammable
Density, Liquid @ 68°F (20°C), 1 atm	12.4lb/gal (1.48g/m)
Boiling Point	135.1°F (57.3°C)
Melting Point	-93°F (-69.4°C)
Triple Point @ 5.11 atm	-69.9°F (-56.6°C)
Critical Temperature	453°F (234.0°C)
Critical Pressure	543.7 psia (37.6 bar)
Toxicity (as HCl, a 4 to 1 ratio)	
PEL /TLV as HCl	5 ppm
LC ₅₀	750 ppm
IDLH	100 ppm

Fiber Optic Specifications

COMPONENT	SYMBOL	LIQUID PHASE
Hydrogen Chloride	HCl	< 500
Other Chlorosilane	SiHCl_3	< 100
	SiH_2Cl_2	< 50
	SiH_3Cl	< 50
Other Silicon compounds	Si-OH	< 100
	Si-CH (THC)	< 100
Aluminium	Al	< 10
Cobalt	Co	< 1
Chromium	Cr	< 1
Copper	Cu	< 1
Iron	Fe	< 10
Manganese	Mn	< 1
Molybdenum	Mo	< 1
Nickel	Ni	< 2
Titanium	Ti	< 7
Vanadium	V	< 2
Zinc	Zn	< 3

*all values in ppb, lot analysis only.