

# ELECTRONIC GASES

## SILICON TETRAFLUORIDE SiF<sub>4</sub>

Silicon Tetrafluoride is a colorless, toxic, nonflammable gas with a suffocating odor. It is irritating to the mucous membranes. Silicon Tetrafluoride forms fumes in humid air, and hydrolyses rapidly to form fluorosilicic acid and hydrogen fluoride. It is shipped as a free gas, and the contents vary with the pressure.

### Container Information

CYLINDER SIZE	CONTENTS		Pressure@21.1°C Valve Outlet DOT Shipping Description:	1000 psig CGA-330 Silicon Tetrafluoride, 2.3, UN 1859 Poison-Inhalation Hazard Hazard Zone D
	LB	KG		
044	50	22.7		
016	18	8.2	DOT Shipping Labels	Poison Gas Corrosive
008	9	4.1	DOT Guide No. CAS Registry No.	16 7783-61-1

### Specifications

COMPONENT	VLSI	ELECTRONIC
SILICON TETRAFLUORIDE	99.998%min	99.99%min
Carbon Dioxide	< 1 ppm	< 10 ppm
Carbon Monoxide	< 0.5 ppm	< 10 ppm
Nitrogen	< 3 ppm	< 50 ppm
Oxygen	< 1 ppm	< 20 ppm
THC (as Methane)	< 10 ppm	< 10 ppm
Arsenic	< 0.5 ppm	
Boron	< 0.5 ppm	
Phosphorous	< 0.5 ppm	
*Hydrogen Fluoride	< 50 ppm	

**SHELF LIFE:** 2 years  
\*Analysis available upon request.

### Physical Properties

Molecular Weight	104.08
Flammability Limits in air	Nonflammable
Specific Gravity, Gas @ 70°F(21.1°C), 1 atm(Air=1)	3.55
Density, Gas @ 70°F(21.1°C), 1 atm	0.266lb/ft <sup>3</sup> (4.26g/l)
Specific Volume, Gas @ 70°F(21.1°C), 1 atm	3.76ft <sup>3</sup> /lb (0.23l/g)
Sublimation Point @ 1 atm	-139.2°F (-95.1°C)
Freezing Point @ 1 atm	-130°F (-90°C)
Critical Temperature	6.5°F (-14.2°C)
Critical Pressure	538.8 psia (37.2 bar)
Toxicity (as HF, a 4 to 1 ratio)	
PEL/TLV	3 ppm
STEL	6 ppm
LC <sub>50</sub>	450 ppm
IDLH	38 ppm