

# ELECTRONIC GAS

## CHLORINE TRIFLUORIDE ClF<sub>3</sub>

Chlorine trifluoride is a corrosive, colorless gas with a sweet odor and is highly irritating even at low concentrations. It is a powerful oxidising agent causing ignition of many organic compounds and ignites many metals at elevated temperatures. It reacts violently with water. It is used to clean the deposition reactors by oxides removal (silicon, metals, ...). It is shipped as a liquefied gas under its own vapour pressure.

Container Information			
CYLINDER SIZE	CONTENTS		Pressure @ 21.1°C Valve Outlet
	LB	KG	
044	44	20	7 psig CGA-660 / DISS-728
016	15	6.8	DOT Shipping Description: Chlorine Trifluoride 2.3 UN 1749
			DOT Shipping Labels Poison Gas Oxidiser and Corrosive
			DOT Guide No. 20
			CAS Registry No. 7664-41-7

Specifications		
COMPONENT CHLORINE TRIFLUORIDE	VLSI 99.95% min	ELECTRONIC 99.9% min
AIR (O <sub>2</sub> + N <sub>2</sub> )	< 50 ppm	< 70 ppm
Hydrogen Fluoride	< 400 ppm	< 700 ppm
SHELF LIFE: 2 years		

Physical Properties	
Molecular Weight	92.448
Flammability Limits in air	Non-flammable
Specific Gravity, Gas @ 70°F(21.1°C), 1 atm(Air=1)	3.14
Density, Gas @ 70°F(21.1°C), 1 atm	0.24lbs/ft <sup>3</sup> (3.82g/l)
Specific Volume, Gas @ 70°F(21.1°C), 1 atm	4.2ft <sup>3</sup> /lb (0.262l/g)
Boiling Point @ 1 atm	53.2°F (11.75°C)
Critical Temperature	345.2°F (175.0°C)
Critical Pressure	837.7 psia (57.76 bar)
Toxicity	
PEL/TLV	0.1 ppm
LC <sub>50</sub>	25 ppm

VLSI Metals Specifications		
ELEMENT	SYMBOL	GAS PHASE
Calcium	Ca	< 1
Chromium	Cr	< 1
Copper	Cu	< 1
Iron	Fe	< 1
Lead	Pb	< 1
Nickel	Ni	< 1
Potassium	K	< 1
Sodium	Na	< 1
*all values in ppmw, lot analysis only		