

# ELECTRONIC GAS

## TUNGSTEN HEXAFLUORIDE WF<sub>6</sub>

Tungsten Hexafluoride is a pale yellow, toxic, non-flammable, odorless extremely corrosive gas. It reacts violently with water to form hydrofluoric acid. It is used in low pressure or plasma enhanced chemical vapor deposition of tungsten or tungsten silicides. It is shipped in nickel cylinders as a liquefied gas.

### Container Information

CYLINDER SIZE	CONTENTS		Pressure @ 21.1°C Valve Outlet DOT Shipping Description:  DOT Shipping Labels DOT Guide No. CAS Registry No.	2.6 psig (pressurized with Argon) CGA-670 / DISS-638 Tungsten Hexafluoride, 2.3, UN 2196 Poison Inhalation Hazard Hazard Zone C Poison Gas 15 10294-35-3
	LB	KG		
E50	286	130		
19L (Ni)	110	50		
8L (Ni)	44	20		
4L (Ni)	22	10		

4L (Ni), 8L (Ni), 19L (Ni) are Nickel made special cylinders

### Specifications

COMPONENT TUNGSTEN HEXAFLUORIDE	ULSI 99.998% min	ELECTRONIC 99.98% min
Carbon Dioxide	< 1 ppm	10 ppm
Carbon Monoxide	< 1 ppm	10 ppm
Carbon Tetrafluoride	< 1 ppm	10 ppm
Hydrogen Fluoride	< 10 ppm	100 ppm
Nitrogen	< 1 ppm	20 ppm
Oxygen + Argon	< 1 ppm	10 ppm
Sulfur Hexafluoride	< 0.5 ppm	10 ppm
Silicon Tetrafluoride	< 0.5 ppm	10 ppm

**SHELF LIFE:** 2 years

### Physical Properties

Molecular Weight	297.84
Flammability Limits in air	Non-flammable
Specific Gravity, Gas @ 70°F(21.1°C), 1 atm(Air=1)	10.0
Density, Gas @ 70°F(21.1°C), 1 atm	0.806lbs/ft <sup>3</sup> (13g/l)
Density, Liquid @ Boiling Point, 1 atm	216.3lbs/ft <sup>3</sup> (3470kg/l)
Specific Volume, Gas @ 70°F(21.1°C), 1 atm	1.24ft <sup>3</sup> /lb (0.077l/g)
Boiling Point	62.7°F (17°C)
Melting Point	36.1°F (2.3°C)
Toxicity (as HF)	
TWA (as HF)	3 ppm

### ULSI Metals Specifications

COMPONENT	SYMBOL	LIQUID PHASE
Chromium	Cr	10
Iron	Fe	10
Potassium	K	10
Sodium	Na	10
Thorium	Th	0.1
Uranium	U	0.5

\*all values in ppbw, lot analysis only