

Carbon Tetrafluoride CF₄

ULSI Plus Grade: 99.997%



Description

Carbon Tetrafluoride is a source of fluorine or carbon fluoride free radicals used in a variety of wafer etch processes. Carbon Tetrafluoride is used with oxygen to etch polysilicon, silicon dioxide, and silicon nitride. Carbon Tetrafluoride is relatively inert under normal conditions and is an asphyxiant. Under RF plasma conditions, the fluorine free radicals are typically in the form of CF₃ or CF₂. A higher purity Carbon Tetrafluoride results in superior control of the process, which results in better dimensional and profile control. Other halocarbons, as well as the presence of air or oxygen, are detrimental to the control of the anisotropic etch.

Physical Constants	
Chemical formula	CF ₄
Molecular weight	88.005
Specific volume @ +70°F (+21.1°C)	4.396 ft ³ /lb, 0.274 m ³ /kg
Critical pressure	542.3 psia, 37.39 bar
Critical temperature	-50.17°F, -45.65°C
Specific gravity @ 70°F, 1 atm (Air=1)	3.04

Maximum Impurities	
COMPONENT	CONCENTRATION (ppmv)
Carbon Dioxide	<1.0
Carbon Monoxide	<1.0
Moisture	<1.0
Nitrogen	<15.0
Oxygen	<5.0
Other Halocarbons	<4.0
Sulphur Hexafluoride	<1.0
THC (as Methane)	<1.0

Cylinder Specifications*			Contents	Pressure	
Cylinder	Valve Outlet Options		Pounds	PSIG	BAR
2	CGA 580	DISS 716	70	2000	139

*Additional cylinder sizes and/or valve outlets are available.

www.spectragases.com

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