

Carbon Tetrafluoride CF₄

Giga Class Grade: 99.999%



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	<10.0
Oxygen	<5.0
Other Halocarbons	<1.0
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.

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USA and Canada

Spectra Gases, Inc.
3434 Route 22 West
Branchburg, NJ 08876, USA
Toll Free (800) 932-0624
Tel: (908) 252-9300 • Fax: (908) 252-0811

United Kingdom

Spectra Gases, Ltd.
e - Space North, Wisbech Road
Littleport, Cambridgeshire, England CB6 1RA
Tel: (+) 44 1353 865470
Fax: (+) 44 1353 865472

Germany

Spectra Gases, GmbH
Im Riemen 12
64832 Babenhausen, Germany
Tel: +49-6073-7262-0
Fax: +49-6073-7262-200

China

**Spectra Gases-China
Shanghai Tomoe Gases Co., Ltd.**
1088 Jin Qian Road
Jiading Area, Shanghai 201802, China
Tel: +86-21-62722427 • Fax: +86-21-62722435