

**The Purest Product**

The semiconductor process gases production centers are designed to meet the critical quality requirements of the semiconductor industry. These requirements demand not only producing consistent semiconductor process gases, but also maintaining purity throughout the filling operation directly into the process reactor.

In North America, Praxair has several centers that handle semiconductor process grade gases. These advanced production facilities enable Praxair to set new standards of quality and consistency for all our semiconductor grade products.

Product Description	Grade	Purity %	Specifications Page Number)
<b>Silicon-Precursor Gases</b>			
Dichlorosilane (SiH <sub>2</sub> Cl <sub>2</sub> )	2.7	99.7	C18
Disilane (Si <sub>2</sub> H <sub>6</sub> )	4.8	99.998	C19
Silane (SiH <sub>4</sub> )	6.0	99.9999	C55
	4.7	99.997	C55
	4.0	99.99	C55
Silicon Tetrachloride (SiCl <sub>4</sub> )	4.0	99.99	C56
	3.8	99.98	C56
	3.0	99.9	C56
Trichlorosilane (SiHCl <sub>3</sub> )	3.5	99.95	C60
	3.0	99.9	C60
<b>Etchant Gases</b>			
Boron Trichloride (BCl <sub>3</sub> )	3.6	99.96	C9
Chlorine (Cl <sub>2</sub> )	5.0	99.999	C18
	4.0	99.99	C18
Halocarbon – 14 (CF <sub>4</sub> )	4.7	99.997	C22
	3.7	99.97	C22
Halocarbon – 22 (CHF <sub>4</sub> )	3.0	99.9	C23
Halocarbon – 23 (CHF <sub>4</sub> )	4.5	99.995	C24
	2.0	99.0	C24
Halocarbon – 116 (C <sub>2</sub> F <sub>6</sub> )	4.6	99.996	C25
	3.6	99.96	C25
Halocarbon – 218 (C <sub>3</sub> F <sub>8</sub> )	3.6	99.96	C27
Hydrogen Bromide (HBr)	4.5	99.995	C34
Hydrogen Chloride (HCl)	5.0	99.999	C35
Nitrogen Trifluoride (NF <sub>3</sub> )	4.0	99.99	C48
Sulfur Hexafluoride (SF <sub>6</sub> )	4.5	99.995	C59
	2.8	99.8	

Product Description	Grade	Purity %	Specifications (Section C, Page Number)
<b>Atmospheric/Purge Cylinder Gases</b>			
Argon (Ar)	6.0	99.9999	C6
	5.5	99.9995	C6
	5.0	99.999	C6
Helium (He)	6.0	99.9999	C31
	5.5	99.9995	C31
	5.0	99.999	C31
Hydrogen (H <sub>2</sub> )	6.0	99.9999	C33
	5.5	99.9995	C33
	5.0	99.999	C33
Nitrogen (N <sub>2</sub> )	6.0	99.9999	C46
	5.5	99.9995	C46
	5.0	99.999	C46
Oxygen (O <sub>2</sub> )	5.0	99.999	C51
	4.0	99.99	C51
Xenon (Xe)	5.0	99.999	C62
<b>Dopant Gases</b>			
Arsine (AsH <sub>3</sub> )	6.0	99.9999	C8
	5.7	99.9997	C8
Boron Trifluoride (BF <sub>3</sub> )	2.5	99.5	C10
	1.5EN	95.0	C8
Phosphine (PH <sub>3</sub> )	6.0	99.9999	C52
	5.7	99.9997	C52
<b>Reactant Gases</b>			
Ammonia (NH <sub>3</sub> )	6.5	99.99995	C5
	5.5	99.9995	C5
	5.0	99.999	C5
Carbon Dioxide (CO <sub>2</sub> )	4.8	99.998	C15
	4.0	99.99	C15
Nitrous Oxide (N <sub>2</sub> O)	5.5	99.9995	C49
	4.8	99.998	C49
Sulfur Dioxide (SO <sub>2</sub> )	3.8	99.98	C58
Tungsten	5.0	99.999	C61

**Gas Mixtures**

Please contact your Praxair representative for information regarding our complete selection of process gas and inert mixtures.