

The following information is provided as a guide to assist you in selecting the correct gas control for use with each of your cylinder gases. The listing is divided into three distinct groups - Pure Gases, Pure Gases in Lecture Bottles, and Two-Component Gas Mixtures.

To use this guide, simply locate the gas or gas mixture you are using within the appropriate group. The tables for Pure Gases and Pure Gases in Lecture Bottles have their information initially arranged alphabetically by the gas of interest, and then secondarily alphabetized by the specific grade of that gas. The information in the Two-Component Gas Mixtures table is listed first alphabetically by minor component and then alphabetically by the balance gas, or major component. For example, 2% Ammonia, 98% Helium would be listed first under Ammonia (the minor component), then under "In Helium" (the balance gas) within the Ammonia grouping.

Across from each individual listing you will find that product's normal corresponding valve outlet connection number (CGA Connection), the recommended regulator model, and a reference page number directing you to the page in our catalog where additional information and complete specifications on that regulator can be found. In the Pure Gas Table you will also find certain physical properties of the gas, such as chemical formula, molecular weight, vapor pressure (liquefied gases), specific gravity and specific volume. In certain cases, where pressure reduction is not desired or required, such as with very low pressure products such as boron trichloride, a manual control valve has been recommended instead of a pressure regulator. Please remember that Manual Control Valves control flow, not pressure.

You should note that the recommendations contained herein are valid, and generally preferred for the more common applications of the products indicated; and consideration has been given to safety, materials compatibility, as well as to convenience and suitability for these common applications. However, the recommendations shown may not be the only models that are suitable, and your specific application may have subtleties that would indicate that a different selection is a more preferable choice. If you need assistance in making your selection, or wish to confirm that your choice is correct, please contact us.

If you are using a product that is not listed within these tables, please do not hesitate to contact us to discuss your requirements.

## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Acetylene (C<sub>2</sub>H<sub>2</sub>)</b>	<b>26.038</b>	—	<b>0.91 at 32°F</b>	<b>14.5</b>			
Atomic Absorption					510	<a href="#">3101A</a>	4
Commercial Grade, 98.0% Purified					510	<a href="#">3101A</a>	4
Technical					510	<a href="#">3101A</a>	4
<b>Air</b>	<b>28.975</b>	—	<b>1.00</b>	<b>13.3</b>			
Blended Air (<99.999)					590	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
CO <sub>2</sub> Free					590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Compressed Air (<99.999)					346	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
Dry (<99.999)					346/590*	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
High Pressure (3500 psig)					347	<a href="#">3800V</a> or <a href="#">3860TB</a>	16,17
High Pressure (6000 psig)					702	<a href="#">3800V</a> or <a href="#">3860TB</a>	16,17
Hydrocarbon Free					346/590*	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
USP (<99.999)					346/950*	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
Ultra Pure Carrier					590	<a href="#">3201</a>	5
Ultra Zero					590	<a href="#">3201</a>	5
Vehicle Emission Zero					590	<a href="#">3201</a>	5
V.O.C. Free Air					590	<a href="#">3201</a>	5
Zero					346/590*	<a href="#">3201</a>	5

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Allene (C<sub>3</sub>H<sub>4</sub>)</b>	<b>40.065</b>	<b>116.7</b>	<b>1.415 at 68°F</b>	<b>9.6</b>	510	<a href="#">3103</a>	4
<b>Ammonia (NH<sub>3</sub>)</b>	<b>17.031</b>	<b>114.1</b>	<b>0.597</b>	<b>22.7</b>			
Anhydrous					705	<a href="#">3403</a>	6
Electronic					660	<a href="#">3403</a>	6
Nitride					660	<a href="#">3403</a>	6
Research					660	<a href="#">3403</a>	6
Semiconductor Purity					660/720*	<a href="#">3403</a>	6
SFC Grade					660	<a href="#">3403</a>	6
ULSI Purity					660/720*	<a href="#">3403</a>	6
Ultra High Purity					660/720*	<a href="#">3403</a>	6
<b>Argon (Ar)</b>	<b>39.948</b>	<b>—</b>	<b>1.378</b>	<b>9.68</b>			
Grade 6™					580	<a href="#">3201</a>	5
High Pressure (3500 psig)					680	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Pressure (6000 psig)					677	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Purity					580	<a href="#">3201</a>	5
Oxygen Free					580	<a href="#">3201</a>	5
Prepurified					580	<a href="#">3201</a>	5
Research					580	<a href="#">3201</a>	5
Semiconductor Purity					580	<a href="#">3201</a>	5
Sputtering					580	<a href="#">3201</a>	5
ULSI Purity					580	<a href="#">3201</a>	5
Ultra High Purity					580	<a href="#">3201</a>	5
Ultraplus™					580	<a href="#">3201</a>	5
Ultra Pure Carrier					580	<a href="#">3201</a>	5
Zero					580	<a href="#">3201</a>	5
<b>Arsine (AsH<sub>3</sub>)</b>	<b>77.946</b>	<b>205</b>	<b>2.69</b>	<b>5.0</b>			
Electronic					350/632*	<a href="#">3403</a>	6
ULSI Purity					350/632*	<a href="#">3403</a>	6
<b>Boron Trichloride (BCl<sub>3</sub>)</b>	<b>117.169</b>	<b>4.4</b>	<b>4.03</b>	<b>3.3</b>			
CP					660	<a href="#">3472</a>	13
Electronic					660	<a href="#">3472</a>	13
Semiconductor Purity					660/634*	<a href="#">3472</a>	13
VLSI Etchant					660	<a href="#">3472</a>	13
<b>Boron Trifluoride (BF<sub>3</sub>)</b>	<b>67.805</b>	<b>—</b>	<b>2.387</b>	<b>5.7</b>			
CP					330	<a href="#">3470</a>	13
<b>1,3 Butadiene (C<sub>4</sub>H<sub>6</sub>)</b>	<b>54.092</b>	<b>21.4</b>	<b>1.915 at 60°F</b>	<b>6.9</b>			
CP					510	<a href="#">3103</a>	4
High Purity (Inhibited)					510	<a href="#">3103</a>	4
Instrument					510	<a href="#">3103</a>	4
Research					510	<a href="#">3103</a>	4

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## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Butane (C<sub>4</sub>H<sub>10</sub>)</b>	<b>58.123</b>	<b>16.3</b>	<b>2.110 at 68°F</b>	<b>6.4</b>			
CP					510	<a href="#">3103</a>	4
Instrument					510	<a href="#">3103</a>	4
Technical					510	<a href="#">3103</a>	4
<b>n-Butane</b> See Butane							
<b>iso-Butane</b> See Isobutane							
<b>1-Butene (C<sub>4</sub>H<sub>8</sub>)</b>	<b>56.108</b>	<b>23.5</b>	<b>1.937</b>	<b>6.7</b>			
CP					510	<a href="#">3103</a>	4
High Purity					510	<a href="#">3103</a>	4
Research					510	<a href="#">3103</a>	4
<b>cis-2-Butene (C<sub>4</sub>H<sub>8</sub>)</b>	<b>56.108</b>	<b>13</b>	<b>1.997 at 68°F</b>	<b>6.7</b>			
High Purity					510	<a href="#">3103</a>	4
Technical					510	<a href="#">3103</a>	4
<b>trans-2-Butene (C<sub>4</sub>H<sub>8</sub>)</b>	<b>56.108</b>	<b>15</b>	<b>1.997 at 68°F</b>	<b>6.7</b>			
High Purity					510	<a href="#">3103</a>	4
Technical					510	<a href="#">3103</a>	4
<b>(cis &amp; trans) 2-Butene (C<sub>4</sub>H<sub>8</sub>)</b>	<b>56.108</b>	<b>14</b>	<b>1.997 at 68°F</b>	<b>6.7</b>			
Technical					510	<a href="#">3103</a>	4
<b>iso-Butylene</b> See Isobutylene							
<b>Carbon Dioxide (CO<sub>2</sub>)</b>	<b>44.011</b>	<b>830</b>	<b>1.522</b>	<b>8.76</b>			
Anaerobic					320	<a href="#">3101</a>	4
Bone Dry (<99.999)					320	<a href="#">2401</a>	20
CP (<99.999)					320	<a href="#">2401</a>	20
Commercial					320	<a href="#">2401</a>	20
Electronic					320	<a href="#">3101</a>	4
Instrument (Coleman)					320	<a href="#">3101</a>	4
Precision Aquarator®					320	<a href="#">3101</a>	4
Research					320	<a href="#">3101</a>	4
SFC Grade					320	<a href="#">3101</a>	4
SFE					320	<a href="#">3101</a>	4
Spectra-Clean®, Grade 5™					320	<a href="#">3101</a>	4
USP (<99.999)					320/940*	<a href="#">2401</a>	20
<b>Carbon Monoxide (CO)</b>	<b>28.010</b>	<b>—</b>	<b>0.968</b>	<b>13.8</b>			
CP					350	<a href="#">2421</a>	21
Commercial					350	<a href="#">2421</a>	21
Research					350	<a href="#">3201</a>	5
Technical (<99.999)					350	<a href="#">2421</a>	21
Ultra High Purity					350	<a href="#">3201</a>	5

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Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Carbon Tetrafluoride</b> See Halocarbon 14							
<b>Carbonyl Sulfide (COS)</b>	60.070	160	2.10 at 68°F	6.4	330	<a href="#">3403</a>	6
<b>Chlorine (Cl<sub>2</sub>)</b>	70.906	85.3	2.473 at 68°F	5.4			
High Purity					660	<a href="#">3472</a>	13
Research					660	<a href="#">3472</a>	13
Semiconductor Purity					660/728*	<a href="#">3472</a>	13
ULSI Purity					660/728*	<a href="#">3472</a>	13
Ultra High Purity					660/728*	<a href="#">3472</a>	13
<b>Cyclopropane (C<sub>3</sub>H<sub>6</sub>)</b>	42.081	75.0	1.453 at 68°F	9.2	510	<a href="#">3103</a>	4
<b>Deuterium (D<sub>2</sub>)</b>	4.032	—	0.139 at 32°F	95.9			
CP					350	<a href="#">3201</a>	5
Research					350	<a href="#">3201</a>	5
<b>Dichlorosilane (H<sub>2</sub>SiCl<sub>2</sub>)</b>	101.010	9.1	3.52 at 77°F	3.83			
Electronic					678	<a href="#">3403</a>	6
Semiconductor Purity					678/636*	<a href="#">3403</a>	6
ULSI Purity					678/636*	<a href="#">3403</a>	6
Ultraplus™					678/636*	<a href="#">3403</a>	6
<b>Dimethylamine (C<sub>2</sub>H<sub>7</sub>N)</b>	45.085	11.3	1.557 at 77°F	8.6	705	<a href="#">3403</a> or <a href="#">8520</a>	6, 91
<b>Dimethyl Ether (C<sub>2</sub>H<sub>6</sub>O)</b>	46.069	62.3	1.59	8.4	510	<a href="#">3103</a>	4
<b>2,2-Dimethylpropane (C<sub>5</sub>H<sub>12</sub>)</b>	72.151	7.0	2.49 at 77°F	5.3			
Research					510	<a href="#">3103</a>	4
<b>Ethane (C<sub>2</sub>H<sub>6</sub>)</b>	30.07	544	1.047 at 60°F	12.8			
CP					350	<a href="#">3102</a>	4
Research					350	<a href="#">3102</a>	4
Technical					350	<a href="#">3102</a>	4
Ultra High Purity					350	<a href="#">3102</a>	4
<b>Ethyl Acetylene (C<sub>4</sub>H<sub>6</sub>)</b>	54.092	8.5	1.93 at 77°F	7.2	510	<a href="#">3103A</a>	4
<b>Ethyl Chloride (C<sub>2</sub>H<sub>5</sub>Cl)</b>	64.515	5.3	2.22 at 68°F	6.0			
High Purity					300	<a href="#">8520</a>	91
<b>Ethylene (C<sub>2</sub>H<sub>4</sub>)</b>	28.054	—	0.978 at 32°F	13.8			
CP					350	<a href="#">3101</a>	4
Polymer Grade					350	<a href="#">3101</a>	4
Research					350	<a href="#">3101</a>	4
Technical					350	<a href="#">2401</a>	20

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Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Ethylene Oxide (C<sub>2</sub>H<sub>4</sub>O)</b> 99.90%	<b>44.054</b>	<b>6.5</b>	<b>1.52</b>	<b>8.78</b>	510	<a href="#">8520</a>	91
<b>Halocarbon 12 (CCl<sub>2</sub>F<sub>2</sub>)</b> (Dichlorodifluoromethane)	<b>120.914</b>	<b>70.2</b>	<b>4.26</b>	<b>3.14</b>	660	<a href="#">3103</a>	4
<b>Halocarbon 13 (CClF<sub>3</sub>)</b> (Chlorotrifluoromethane)	<b>104.459</b>	<b>458.7</b>	<b>3.70</b>	<b>3.61</b>	320/660*	<a href="#">3102</a>	4
<b>Halocarbon 13B1 (CBrF<sub>3</sub>)</b> (Bromotrifluoromethane)	<b>148.910</b>	<b>189</b>	<b>5.30</b>	<b>2.6</b>	320/660*	<a href="#">3103</a>	4
<b>Halocarbon 14 (CF<sub>4</sub>)</b> (Tetrafluoromethane)	<b>88.005</b>	—	<b>3.038</b>	<b>4.39</b>			
Electronic					320/660*	<a href="#">3501</a>	7
Semiconductor Purity					320/580*	<a href="#">3501</a>	7
Ultraplus™					320/660*	<a href="#">3201</a>	5
VLSI					580	<a href="#">3501</a>	7
<b>Halocarbon 21 (CHCl<sub>2</sub>F)</b> (Dichlorofluoromethane)	<b>102.923</b>	<b>8.4</b>	<b>3.82 at 68°F</b>	<b>3.5</b>	660	<a href="#">8520</a>	91
<b>Halocarbon 22 (CHClF<sub>2</sub>)</b> (Chlorodifluoromethane)	<b>86.469</b>	<b>123</b>	<b>3.08</b>	<b>4.4</b>	660	<a href="#">3103</a>	4
<b>Halocarbon 23 (CHF<sub>3</sub>)</b> (Trifluoromethane)	<b>70.014</b>	<b>635</b>	<b>2.43</b>	<b>5.5</b>			
Technical					660	<a href="#">2401</a>	20
Ultraplus™					320/660*	<a href="#">2401</a>	20
99.90%					320/660*	<a href="#">2401</a>	20
<b>Halocarbon 114 (C<sub>2</sub>Cl<sub>2</sub>F<sub>4</sub>)</b> (1,2-Dichlorotetrafluoroethane)	<b>170.922</b>	<b>12.9</b>	<b>5.93 at 77°F</b>	<b>2.3</b>	660	<a href="#">3103</a>	4
<b>Halocarbon 115 (C<sub>2</sub>ClF<sub>5</sub>)</b> (Chloropentafluoroethane)	<b>154.467</b>	<b>102</b>	<b>5.569</b>	<b>2.4</b>	660	<a href="#">3103</a>	4
<b>Halocarbon 116 (C<sub>2</sub>F<sub>6</sub>)</b> (Hexafluoroethane)	<b>138.012</b>	<b>430.3</b>	<b>4.773</b>	<b>2.8</b>		<a href="#">3102</a>	4
99.90%					320/660*	<a href="#">2401</a>	20
Semiconductor Purity					660	<a href="#">3102</a>	4
<b>Halocarbon 142B (C<sub>2</sub>H<sub>3</sub>ClF<sub>2</sub>)</b> (1-Chloro-1,1-Difluoroethane)	<b>100.496</b>	<b>27.8</b>	<b>3.63</b>	<b>3.68</b>	510	<a href="#">3103</a>	4

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## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Halocarbon 152A (C<sub>2</sub>H<sub>4</sub>F<sub>2</sub>)</b> (1,1-Difluoroethane)	66.051	63	2.36	5.85	510	<a href="#">3103</a>	4
<b>Halocarbon C-318 (C<sub>4</sub>F<sub>8</sub>)</b> (Octafluorocyclobutane)	200.031	25	7.33	1.85	660	<a href="#">3103</a>	4
<b>Halocarbon 500</b> (73.8 wt.% Halocarbon 12 26.2 wt.% Halocarbon 152A)	100.1	82.3	3.5	3.82	660/510*	<a href="#">3103</a>	4
<b>Halocarbon 502</b> (48.8 wt.% Halocarbon 22 51.2 wt.% Halocarbon 115)	111.63	132.2	3.87	3.45	320/660*	<a href="#">3103</a>	4
<b>Halocarbon 503</b> (60 wt.% Halocarbon 23 40 wt.% Halocarbon 13)	87.247	613	3.07	4.3	320	<a href="#">2401</a>	20
<b>Halocarbon 1113 (C<sub>2</sub>ClF<sub>3</sub>)</b> (Chlorotrifluoroethylene)	116.47	62	4.13	3.30	510	<a href="#">3103</a>	4
<b>Halocarbon 1132A (C<sub>2</sub>H<sub>2</sub>F<sub>2</sub>)</b> (1,1-Difluoroethylene)	64.035	518	2.21 at 77°F	6.0	350	<a href="#">2401</a>	20
<b>Helium (He)</b>	4.003	—	0.138	96.7			
Carrier Grade					580	<a href="#">3201</a>	5
Chromatographic					580	<a href="#">3201</a>	5
ECD Grade					580	<a href="#">3201</a>	5
Grade 6™					580	<a href="#">3201</a>	5
High Pressure (3500 psig)					680	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Pressure (6000 psig)					677	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Purity					580	<a href="#">3201</a>	5
Oxygen Free					580	<a href="#">3201</a>	5
Research					580	<a href="#">3201</a>	5
Semiconductor Purity					580	<a href="#">3201</a> or <a href="#">3501</a>	5, 7
Ultra High Purity					580	<a href="#">3201</a>	5
Ultraplus™					580	<a href="#">3201</a>	5
Ultra Pure Carrier					580	<a href="#">3201</a>	5
ULSI					580	<a href="#">3201</a> or <a href="#">3501</a>	5, 7
USP (<99.999)					580/930*	<a href="#">2421</a>	21
Zero					580	<a href="#">3201</a>	5

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## Pure Gases

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<b>Hexafluoropropylene (C<sub>3</sub>F<sub>6</sub>)</b>	<b>150.023</b>	<b>85</b>	<b>5.18 at 68°F</b>	<b>2.58</b>	660	<a href="#">3103</a>	4
<b>Hydrogen (H<sub>2</sub>)</b>	<b>2.016</b>	<b>—</b>	<b>0.0696</b>	<b>191.7</b>			
Carrier Grade					350	<a href="#">3201</a>	5
Extra Dry (<99.999)					350	<a href="#">2401</a>	20
High Pressure (3500 psig)					695	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Pressure (6000 psig)					703	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Purity					350	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
Prepurified					350	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
Purified					350	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
Research					350	<a href="#">3201</a> or <a href="#">3501</a>	5, 7
Semiconductor Purity					350	<a href="#">3201</a> or <a href="#">3501</a>	5, 7
ULSI Purity					350	<a href="#">3201</a> or <a href="#">3501</a>	5, 7
Ultra High Purity					350	<a href="#">3201</a>	5
Ultraplus™					350	<a href="#">3201</a>	5
Ultra Pure Carrier					350	<a href="#">3201</a>	5
Zero					350	<a href="#">3201</a>	5
<b>Hydrogen Bromide (HBr)</b>	<b>80.912</b>	<b>320</b>	<b>2.812 at 77°F</b>	<b>4.8</b>			
Grade 2.8™					330	<a href="#">3471</a>	13
ULSI Purity					330/634*	<a href="#">3471</a>	13
<b>Hydrogen Chloride (HCl)</b>	<b>36.461</b>	<b>613</b>	<b>1.268 at 68°F</b>	<b>10.6</b>			
Electronic					330	<a href="#">3471</a>	13
Research					330	<a href="#">3471</a>	13
Technical					330	<a href="#">3471</a>	13
ULSI Purity					330/634*	<a href="#">3471</a>	13
Ultra High Purity					330/634*	<a href="#">3471</a>	13
<b>Hydrogen Selenide (H<sub>2</sub>Se)</b>	<b>80.976</b>	<b>124.9</b>	<b>2.80 at 77°F</b>	<b>4.8</b>			
Research					660	<a href="#">3403</a>	6
Semiconductor Purity					350/632*	<a href="#">3403</a>	6
ULSI Purity					350/632*	<a href="#">3403</a>	6
<b>Hydrogen Sulfide (H<sub>2</sub>S)</b>	<b>34.076</b>	<b>252</b>	<b>1.189 at 59°F</b>	<b>11.23</b>			
CP					330	<a href="#">3402</a>	6
Research					330	<a href="#">3402</a>	6
Technical					330	<a href="#">3402</a>	6
<b>Isobutane (C<sub>4</sub>H<sub>10</sub>)</b>	<b>58.124</b>	<b>30.7</b>	<b>2.01</b>	<b>6.5</b>			
CP					510	<a href="#">3103</a>	4
Instrument					510	<a href="#">3103</a>	4
Research					510	<a href="#">3103</a>	4
Technical					510	<a href="#">3103</a>	4

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Isobutylene (C<sub>4</sub>H<sub>8</sub>)</b>	<b>56.108</b>	<b>24.3</b>	<b>1.997</b>	<b>6.7</b>			
CP					510	<a href="#">3103</a>	4
High Purity					510	<a href="#">3103</a>	4
Research					510	<a href="#">3103</a>	4
<b>Isopentane (C<sub>5</sub>H<sub>12</sub>)</b>	<b>72.151</b>	<b>-3.2</b>	<b>2.48</b>	<b>—</b>			
CP					510	<a href="#">8520</a>	91
<b>Krypton (Kr)</b>	<b>83.800</b>	<b>—</b>	<b>2.899</b>	<b>4.6</b>			
Purified					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Research					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Methane (CH<sub>4</sub>)</b>	<b>16.043</b>	<b>—</b>	<b>0.554 at 32°F</b>	<b>23.7</b>			
Commercial					350	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
CP					350	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
High Pressure (3500 psig)					695	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Pressure (6000 psig)					703	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
Instrument					350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Purified					350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Research					350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Technical					350	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
Ultra High Purity					350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Ultra Pure					350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Methyl Bromide (CH<sub>3</sub>Br)</b>	<b>94.939</b>	<b>13</b>	<b>3.355 at 77°F</b>	<b>4.1</b>			
					330/320*	<a href="#">8520</a>	91
<b>Methyl Chloride (CH<sub>3</sub>Cl)</b>	<b>50.488</b>	<b>58.7</b>	<b>1.74 at 32°F</b>	<b>7.6</b>			
					510/660*	<a href="#">3403</a>	6
<b>Methyl Mercaptan (CH<sub>3</sub>SH)</b>	<b>48.107</b>	<b>15</b>	<b>1.66 at 68°F</b>	<b>8.0</b>			
					330	<a href="#">3403</a> or <a href="#">8520</a>	6, 91
<b>Monomethylamine (CH<sub>3</sub>NH<sub>2</sub>)</b>	<b>31.058</b>	<b>28.8</b>	<b>1.08 at 68°F</b>	<b>12.1</b>			
					705	<a href="#">3403</a> or <a href="#">8520</a>	6, 91
<b>Natural Gas</b>	<b>17.656</b>	<b>—</b>	<b>0.55</b>	<b>24.0</b>			
					350	<a href="#">2401</a> or <a href="#">2421</a>	20, 21
<b>Neon (Ne)</b>	<b>20.183</b>	<b>—</b>	<b>0.696</b>	<b>19.2</b>			
CP					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
First Run					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
High Purity					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Research					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Ultra High Purity					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Ultra Pure					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.



## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Nitric Oxide (NO)</b>	<b>30.006</b>	—	<b>1.04</b>	<b>1.04</b>			
CP					660	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
<b>Nitrogen (N<sub>2</sub>)</b>	<b>28.013</b>	—	<b>0.967</b>	<b>13.8</b>			
ECD Grade					580	<a href="#">3201</a>	5
Extra Dry (<99.999)					580	<a href="#">2421</a>	21
Grade 6™					580	<a href="#">3201</a>	5
High Pressure (3500 psig)					680	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Pressure (6000 psig)					677	<a href="#">3800V</a> or <a href="#">3860TB</a>	16, 17
High Purity					580	<a href="#">3201</a>	5
Low Oxygen					580	<a href="#">3201</a>	5
NF–High Purity					580/960*	<a href="#">3201</a>	5
Oxygen Free					580	<a href="#">3201</a>	5
Prepurified (<99.999)					580	<a href="#">2421</a>	21
Research					580	<a href="#">3201</a>	5
Semiconductor Purity					580	<a href="#">3201</a> or <a href="#">3501</a>	5, 7
Ultra High Purity					580	<a href="#">3201</a>	5
Ultra Plus™					580	<a href="#">3201</a>	5
Ultra Pure Carrier					580	<a href="#">3201</a>	5
Ultra Zero Ambient Monitoring Zero					580	<a href="#">3201</a>	5
Vehicle Emission Zero					580	<a href="#">3201</a>	5
VOC Free Nitrogen					580	<a href="#">3201</a>	5
Zero					580	<a href="#">3201</a>	5
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	<b>46.005</b>	<b>0.0 psig</b>	<b>1.58</b>	<b>4.7</b>			
CP					660	<a href="#">8520</a>	91
<b>Nitrous Oxide (N<sub>2</sub>O)</b>	<b>44.013</b>	<b>745</b>	<b>1.53 at 68°F</b>	<b>8.7</b>			
Atomic Absorption					326	<a href="#">2401</a>	20
CP					326	<a href="#">2401</a>	20
Electronic Grade					326	<a href="#">3101</a> or <a href="#">3401</a>	4, 6
High Purity					326	<a href="#">2401</a>	20
Industrial					326	<a href="#">2401</a>	20
Research					326	<a href="#">3101</a>	4
Semiconductor Purity					326/712*	<a href="#">3101</a> or <a href="#">3401</a>	4, 6
SFC Purity					326	<a href="#">3101</a>	4
Technical					326	<a href="#">2401</a>	20
Ultra High Purity					326/712*	<a href="#">3101</a>	4
Ultraplus™					326	<a href="#">3101</a>	4
USP					326/910*	<a href="#">2401</a>	20

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Oxygen (O<sub>2</sub>)</b>	<b>32.00</b>	—	<b>1.105 at 77°F</b>	<b>12.1</b>			
Extra Dry (<99.999)					540	<a href="#">2421</a>	21
Grade 5™					540	<a href="#">3201</a>	5
Hydrocarbon Free UHP					540	<a href="#">3201</a>	5
MOS					540	<a href="#">3201</a>	5
Research					540	<a href="#">3201</a>	5
Ultra High Purity					540	<a href="#">3201</a>	5
Ultra Pure Carrier					540	<a href="#">3201</a>	5
Ultra Zero					540	<a href="#">3201</a>	5
USP (<99.999)					540/870*	<a href="#">2421</a>	21
Zero					540	<a href="#">3201</a>	5
<b>Perfluoropropane (C<sub>3</sub>F<sub>8</sub>)</b>	<b>188.020</b>	<b>100.1</b>	<b>6.69 at 68°F</b>	<b>2.02</b>			
Semiconductor Purity					660	<a href="#">3103</a> or <a href="#">3403</a>	4, 6
<b>Phosgene (COCl<sub>2</sub>)</b>	<b>98.916</b>	<b>10.7</b>	<b>3.48 at 77°F</b>	<b>3.9</b>			
					660	<a href="#">8520</a>	91
<b>Phosphine (PH<sub>3</sub>)</b>	<b>33.998</b>	<b>593</b>	<b>1.184</b>	<b>11.4</b>			
Electronic					350/632*	<a href="#">3102</a> or <a href="#">3402</a>	4, 6
ULSI Purity					350/632*	<a href="#">3102</a> or <a href="#">3402</a>	4, 6
<b>Phosphorous (PF<sub>5</sub>) Pentafluoride</b>	<b>125.966</b>	<b>400</b>	<b>4.46</b>	<b>3.1</b>			
					330/660*	<a href="#">3402</a>	6
<b>Propane (C<sub>3</sub>H<sub>8</sub>)</b>	<b>44.097</b>	<b>109</b>	<b>1.55 at 68°F</b>	<b>8.5</b>			
CP					510	<a href="#">3103</a>	4
Instrument					510	<a href="#">3103</a>	4
Natural					510	<a href="#">3103</a>	4
Research					510	<a href="#">3103</a>	4
<b>Propylene (C<sub>3</sub>H<sub>6</sub>)</b>	<b>42.081</b>	<b>136.6</b>	<b>1.48 at 68°F</b>	<b>9.06</b>			
CP					510	<a href="#">3103</a>	4
Polymer Purity					510	<a href="#">3103</a>	4
Research					510	<a href="#">3103</a>	4
<b>Silane (SiH<sub>4</sub>)</b>	<b>32.118</b>	—	<b>1.114</b>	<b>12.0</b>			
Electronic					350/632*	<a href="#">3501</a>	7
Nitride					350	<a href="#">3501</a>	7
Semiconductor Purity					350/632*	<a href="#">3501</a>	7
Solar/VLSI					350	<a href="#">3501</a>	7
ULSI Purity					350/632*	<a href="#">3501</a>	7
Ultraplus™					350/632*	<a href="#">3501</a>	7
<b>Silicon Tetrafluoride (SiF<sub>4</sub>)</b>	<b>104.080</b>	—	<b>3.63 at 68°F</b>	<b>3.7</b>			
Semiconductor Purity					330	<a href="#">3501</a>	7

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases

Gas Grade	Mol. Weight	Vapor Pressure (psig at 70°F)	Specific Gravity (Air=1)	Specific Volume (ft <sup>3</sup> /lb. at 70°F)	CGA Connection Number	Equipment Recommendations	Page Number
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	<b>64.063</b>	<b>34.4</b>	<b>2.262</b>	<b>5.9</b>			
Anhydrous					660	<a href="#">3403</a>	6
Commercial					660	<a href="#">3403</a>	6
<b>Sulfur Hexafluoride (SF<sub>6</sub>)</b>	<b>146.051</b>	<b>320</b>	<b>5.11 at 68°F</b>	<b>2.5</b>			
Commercial					590	<a href="#">2401</a>	20
CP					590	<a href="#">2401</a>	20
Electronic					590	<a href="#">3102</a> or <a href="#">3402</a>	4, 6
Etchant					590	<a href="#">3102</a> or <a href="#">3402</a>	4, 6
Grade 3™					590	<a href="#">2401</a>	20
Grade 4™					590	<a href="#">2401</a>	20
Instrument Purity					590	<a href="#">3102</a>	4
SFC					590	<a href="#">3102</a>	4
ULSI Purity					590	<a href="#">3102</a> or <a href="#">3402</a>	4, 6
Ultraplus™					590	<a href="#">3102</a> or <a href="#">3402</a>	4, 6
<b>Sulfur Tetrafluoride (SF<sub>4</sub>)</b>	<b>108.058</b>	<b>140</b>	<b>3.783 at 68°F</b>	<b>3.6</b>			
Technical					330	<a href="#">3471</a>	13
<b>Trimethylamine (C<sub>3</sub>H<sub>9</sub>N)</b>	<b>59.112</b>	<b>13.3</b>	<b>2.087 at 68°F</b>	<b>6.4</b>			
					705	<a href="#">3403</a> or <a href="#">8520</a>	6, 91
<b>Vinyl Methyl Ether (C<sub>3</sub>H<sub>6</sub>O)</b>	<b>58.080</b>	<b>10.6</b>	<b>1.99 at 68°F</b>	<b>6.7</b>			
					290	<a href="#">3401</a>	6
<b>Xenon (Xe)</b>	<b>131.300</b>	<b>—</b>	<b>4.560</b>	<b>2.9</b>			
Purified					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
Research					580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases in Lecture Bottles

Gas Grade	CGA Connection Number	Equipment Recommendations	Page Number
<b>Air</b>			
Zero	170	<a href="#">3900</a>	26
Dry	170/180*	<a href="#">3910</a>	26
<b>Allene</b>	170	<a href="#">3910</a>	26
<b>Ammonia</b>			
Anhydrous, 99.99%	110/180*	<a href="#">T3920</a>	26
<b>Argon</b>			
Prepurified	170/180*	<a href="#">3910</a>	26
Ultra High Purity	180	<a href="#">3900</a>	26
<b>Boron Trichloride</b>			
CP	180	<a href="#">3992-180</a>	27
<b>Boron Trifluoride</b>			
CP	180	<a href="#">T3920</a>	26
<b>1, 3 Butadiene</b>			
CP	170	<a href="#">3910</a>	26
Instrument	170	<a href="#">3910</a>	26
<b>Butane</b>			
CP	170	<a href="#">3910</a>	26
Instrument	180	<a href="#">3910</a>	26
<b>1-Butene</b>			
CP	170	<a href="#">3910</a>	26
<b>cis-2-Butene</b>			
Technical	170	<a href="#">3910</a>	26
<b>trans-2-Butene</b>			
Technical	170	<a href="#">3910</a>	26
<b>(cis &amp; trans) 2-Butene</b>			
Technical	170	<a href="#">3910</a>	26
<b>Carbon Dioxide</b>			
Bone Dry	170/180*	<a href="#">3910</a>	26
CP	180	<a href="#">3910</a>	26
<b>Carbon Monoxide</b>			
Commercial	170	<a href="#">3910</a>	26
CP	170/180*	<a href="#">3910</a>	26
Research	180	<a href="#">3900</a>	26
<b>Carbonyl Sulfide</b>	180	<a href="#">T3920</a>	26

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases in Lecture Bottles

Gas Grade	CGA Connection Number	Equipment Recommendations	Page Number
<b>Chlorine</b>			
High Purity	110/180*	<a href="#">T3920</a>	26
Ultra High Purity	180	<a href="#">T3920</a>	26
<b>Cyclopropane</b>	170	<a href="#">3910</a>	26
<b>Deuterium</b>			
CP	170/180*	<a href="#">3900</a>	26
<b>Dimethylamine</b>	180	<a href="#">T3920</a>	26
<b>Dimethyl Ether</b>	170	<a href="#">3910</a>	26
<b>Ethane</b>			
CP	170/180*	<a href="#">3910</a>	26
<b>Ethyl Chloride</b>			
CP	170	<a href="#">3992-170</a>	27
<b>Ethylene</b>			
CP	170/180*	<a href="#">3910</a>	26
Technical	170	<a href="#">3910</a>	26
<b>Ethylene Oxide</b>	180	<a href="#">3992-180</a>	27
<b>Halocarbon 12</b> (Dichlorodifluoromethane)	170	<a href="#">3991</a>	27
<b>Halocarbon 13</b> (Chlorotrifluoromethane)	180	<a href="#">3991</a>	27
<b>Halocarbon 14</b> (Tetrafluoromethane)	170	<a href="#">3910</a>	26
<b>Halocarbon 22</b> (Chlorodifluoromethane)	170	<a href="#">3910</a>	26
<b>Halocarbon 114</b> (1,2-Dichlorotetrafluoroethane)	170	<a href="#">3910</a>	26
<b>Halocarbon 142B</b> (1-Chloro-1, 1-Difluoroethane)	170	<a href="#">3910</a>	26

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases in Lecture Bottles

Gas Grade	CGA Connection Number	Equipment Recommendations	Page Number
<b>Halocarbon C-318</b> (Octafluorocyclobutane)	170	<a href="#">3910</a>	26
<b>Halocarbon 1113</b> (Chlorotrifluoroethylene)	170	<a href="#">3910</a>	26
<b>Helium</b> High Purity	170/180*	<a href="#">3900</a>	26
<b>Hexafluoropropylene</b>	170	<a href="#">3910</a>	26
<b>Hydrogen</b> Prepurified	170/180*	<a href="#">3910</a>	26
Purified	170	<a href="#">3910</a>	26
Ultra High Purity	180	<a href="#">3900</a>	26
<b>Hydrogen Bromide</b>	110/180*	<a href="#">T3920</a>	26
<b>Hydrogen Chloride</b> Electronic	180	<a href="#">T3920</a>	26
Technical	110/180*	<a href="#">T3920</a>	26
<b>Hydrogen Fluoride</b> CP	180	<a href="#">3992-180</a>	27
99.90%	180	<a href="#">3992-180</a>	27
<b>Hydrogen Sulfide</b> CP	110/180*	<a href="#">T3920</a>	26
<b>Isobutane</b> CP	170	<a href="#">3910</a>	26
Instrument	170	<a href="#">3910</a>	26
<b>Isobutylene</b> CP	170	<a href="#">3910</a>	26
<b>Krypton</b> Research	180	<a href="#">3900</a>	26
<b>Methane</b> CP	170/180*	<a href="#">3910</a>	26
Instrument	180	<a href="#">3900</a>	26
Purified	170	<a href="#">3910</a>	26
Technical	170	<a href="#">3910</a>	26
Ultra High Purity	170	<a href="#">3900</a>	26
Ultra Pure	170	<a href="#">3900</a>	26

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Pure Gases in Lecture Bottles

Gas Grade	CGA Connection Number	Equipment Recommendations	Page Number
<b>Methyl Bromide</b>	170	<a href="#">3992-170</a>	27
<b>Methyl Chloride</b>	110/170/180*	<a href="#">3992</a>	27
<b>Methyl Mercaptan</b>	180	<a href="#">2992</a>	27
<b>Monomethylamine</b>	110/180*	<a href="#">3992</a>	27
<b>Nitrogen</b>			
Prepurified	170/180*	<a href="#">3910</a>	26
Ultra High Purity	170/180*	<a href="#">3900</a>	26
<b>Nitrous Oxide</b>			
CP	170	<a href="#">3910</a>	26
<b>Oxygen</b>			
Extra Dry	170/180*	<a href="#">3910</a>	26
Zero	170	<a href="#">3900</a>	26
<b>Phosphorous Pentafluoride</b>	330	<a href="#">T3920</a>	26
<b>Propane</b>			
CP	170	<a href="#">3910</a>	26
Instrument	170/180*	<a href="#">3900</a>	26
<b>Propylene</b>	170/180*	<a href="#">3910</a>	26
<b>Sulfur Dioxide</b>			
Anhydrous	180	<a href="#">T3920</a>	26
<b>Sulfur Hexafluoride</b>	170	<a href="#">3910</a>	26
<b>Sulfur Tetrafluoride</b>	110/180*	<a href="#">T3920</a>	26
<b>Trimethylamine</b>	180	<a href="#">3992</a>	27
<b>Vinyl Bromide</b>	180	<a href="#">3992</a>	27
<b>Vinyl Methyl Ether</b>	180	<a href="#">3992</a>	27

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

## Two Component Gas Mixtures

Minor Component Balance Gas	CGA		Page Number
	Connection Number	Equipment Recommendations	
<b>Acetaldehyde</b>			
In Helium	350	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Nitrogen	350	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
<b>Acrylonitrile</b>			
In Helium	350	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Nitrogen	350	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
<b>Ammonia</b>			
In Air	660/705*	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Argon	705	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Helium	705	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Hydrogen	330/660/705 <sup>†</sup>	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Nitrogen	330/660/705 <sup>†</sup>	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
<b>Argon</b>			
In Helium	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Oxygen	296	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Benzene</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Butane</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Carbon Dioxide</b>			
In Air	580/590*	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Carbon Monoxide	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Oxygen	296/540*	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Carbon Disulfide</b>			
In Argon	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Helium	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Nitrogen	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

\*\*CGA 590 when oxygen concentration is ≤ 23%. CGA 296 when oxygen concentration is >23%.



## Two Component Gas Mixtures

Gas Grade	CGA Connection Number	Equipment Recommendations	Page Number
<b>Carbon Monoxide</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Carbonyl Sulfide</b>			
In Argon	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Helium	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Nitrogen	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
<b>Chlorine</b>			
In Argon	660	<a href="#">3470</a>	13
In Helium	660	<a href="#">3470</a>	13
In Nitrogen	330/660*	<a href="#">3470</a>	13
<b>Ethane</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Ethanol</b>			
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Ethylene</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Ethylene Oxide</b>			
In Air	590	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Nitrogen	350	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
<b>Halocarbon 12</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

\*\*CGA 590 when oxygen concentration is ≤ 23%. CGA 296 when oxygen concentration is >23%.

## Two Component Gas Mixtures

Gas Grade	CGA		Page Number
	Connection Number	Equipment Recommendations	
<b>Helium</b>			
In Argon	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Oxygen	296	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Hexane</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Hydrogen</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Hydrogen Chloride</b>			
In Argon	330	<a href="#">3470</a>	13
In Helium	330	<a href="#">3470</a>	13
In Nitrogen	330	<a href="#">3470</a>	13
<b>Hydrogen Cyanide</b>			
In Helium	350	<a href="#">3470</a>	13
In Nitrogen	350	<a href="#">3470</a>	13
<b>Hydrogen Sulfide</b>			
In Air	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Argon	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Helium	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Hydrogen	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Methane	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
In Nitrogen	330	<a href="#">3401</a> or <a href="#">3501</a>	6, 7
<b>Isobutane</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

\*\*CGA 590 when oxygen concentration is  $\leq$  23%. CGA 296 when oxygen concentration is  $>$ 23%.

## Two Component Gas Mixtures

Gas Grade	CGA Connection Number	Equipment Recommendations	Page Number
<b>Methane</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Methanol</b>			
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Methyl Mercaptan</b>			
In Helium	330/350*	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Nitrogen	330/350*	<a href="#">3401</a> or <a href="#">3501</a>	6,7
<b>Moisture</b>			
In Argon	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Nitric Oxide</b>			
In Argon	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Helium	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Nitrogen	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
<b>Nitrogen</b>			
In Argon	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Oxygen	296	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Nitrogen Dioxide</b>			
In Air	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Argon	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Helium	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Nitrogen	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
<b>Nitrous Oxide</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Oxygen</b>			
In Argon	**	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	**	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	**	<a href="#">3101</a> or <a href="#">3201</a>	4, 5

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

\*\*CGA 590 when oxygen concentration is ≤ 23%. CGA 296 when oxygen concentration is >23%.

## Two Component Gas Mixtures

Gas Grade	CGA Connection Number	Equipment Recommendations	Page Number
<b>Pentane</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Propane</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Propylene</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Hydrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Sulfur Dioxide</b>			
In Air	330/660*	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Argon	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Helium	660	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Nitrogen	330/660*	<a href="#">3401</a> or <a href="#">3501</a>	6,7
<b>Sulfur Hexafluoride</b>			
In Air	590	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Argon	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	580	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Toluene</b>			
In Air	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Helium	350	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
In Nitrogen	350/510*	<a href="#">3101</a> or <a href="#">3201</a>	4, 5
<b>Vinyl Chloride</b>			
In Air	590	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Helium	350	<a href="#">3401</a> or <a href="#">3501</a>	6,7
In Nitrogen	350	<a href="#">3401</a> or <a href="#">3501</a>	6,7

\*CGA Connection may vary depending upon cylinder size or gas manufacturer. Check with your gas supplier to determine actual CGA Connection.

\*\*CGA 590 when oxygen concentration is ≤ 23%. CGA 296 when oxygen concentration is >23%.