



## Materials Compatibility Guide

The following data should serve as a guide in the selection of components for particular gas services.

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**N** Not recommended with this gas

**S** Suitability depends on condition of use

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Gas	ID #	Chemical Formula	Metals					Plastics				Elastomers			
			316 Stainless Steel	Monel	Brass	Aluminum	Zinc	Copper	Kel-F	Teflon	Tetzel	Kynar	Viton	Buna-N	Neoprene
Acetylene	UN1001	C <sub>2</sub> H <sub>2</sub>	C	C	C	C	N	N	C	C	C	C	C	C	C
Air	UN1002	N/A	C	C	C	C	C	C	C	C	C	C	C	C	C
Ammonia	UN1005	NH <sub>3</sub>	C	C	N	C	N	N	C	C	C	N	N	C	C
Argon	UN1006	Ar	C	C	C	C	C	C	C	C	C	C	C	C	C
Arsine	UN2188	AsH <sub>3</sub>	C	C	C	-	-	C	C	C	C	C	C	C	C
Boron Trichloride	UN1741	BCl <sub>3</sub>	C	C	S	N	-	C	C	C	C	-	-	-	-
Boron Trifluoride	UN1008	BF <sub>3</sub>	C	C	S	C	-	S	C	C	C	-	-	-	-
Bromine Trifluoride	UN1746	BrF <sub>3</sub>	C	C	S	S	-	S	S	S	C	N	N	N	N
1,3-Butadiene	UN1010	C <sub>4</sub> H <sub>6</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
n-Butane	UN1011	C <sub>4</sub> H <sub>10</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
1-Butene	UN1012	C <sub>4</sub> H <sub>8</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
cis-2-Butene	UN1012	C <sub>4</sub> H <sub>8</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
trans-2-Butene	UN1012	C <sub>4</sub> H <sub>8</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Carbon Dioxide	UN1013	CO <sub>2</sub>	C	C	C	C	C	C	C	C	C	C	C	S	S
Carbon Monoxide	UN1016	CO	C	C	C	C	C	C	C	C	C	C	C	C	C
Carbonyl Sulfide	UN2204	COS	C	C	C	C	-	C	-	-	-	-	-	-	-
Chlorine	UN1017	Cl <sub>2</sub>	C	C	N	N	N	N	C	C	C	C	C	N	N
Chlorine Trifluoride	UN1749	ClF <sub>3</sub>	C	C	-	N	-	-	S	S	C	N	N	N	N
Cyanogen	UN1026	C <sub>2</sub> N <sub>2</sub>	C	C	-	-	-	-	-	-	-	-	-	-	-
Cyclopropane	UN1027	C <sub>3</sub> H <sub>6</sub>	C	C	C	C	C	C	-	-	-	-	-	-	-
Deuterium	UN1957	D <sub>2</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Dichlorosilane	UN2189	H <sub>2</sub> SiCl <sub>2</sub>	C	C	-	N	-	-	C	C	C	C	-	-	-
Dimethylamine	UN1032	(CH <sub>3</sub> ) <sub>2</sub> NH	C	C	N	N	N	N	C	C	C	C	N	N	-
Dimethyl Ether	UN1033	(CH <sub>3</sub> ) <sub>2</sub> O	C	C	C	C	C	C	C	C	C	C	N	N	-
Disilane	UN1954	Si <sub>2</sub> H <sub>6</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Ethane	UN1035	C <sub>2</sub> H <sub>6</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Ethyl Chloride	UN1037	CH <sub>3</sub> CH <sub>2</sub> Cl	C	C	C	C	-	C	C	C	C	C	C	C	C
Ethylene	UN1962	CH <sub>2</sub> :CH <sub>2</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Fluorine	UN1045	F <sub>2</sub>	C	C	S	S	S	S	S	S	S	S	N	N	N
Halocarbon-14	UN1982	CF <sub>4</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Halocarbon-23	UN1984	CHF <sub>3</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Halocarbon-32	UN3252	CHF <sub>2</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Halocarbon-116	UN2193	C <sub>2</sub> F <sub>6</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Halocarbon-218	UN2424	C <sub>3</sub> F <sub>8</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Halocarbon-236a	UN1954	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Halocarbon-1113	UN1082	C <sub>2</sub> ClF <sub>3</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Halocarbon-4110	UN2810	C <sub>3</sub> F <sub>8</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Helium	UN1046	He	C	C	C	C	C	C	C	C	C	C	C	C	C
Hydrogen	UN1049	H <sub>2</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Hydrogen Bromide	UN1048	HBr	C	C	N	N	N	N	C	C	C	C	C	N	N
Hydrogen Chloride	UN1050	HCl	C	C	N	N	N	N	C	C	C	C	C	N	N
Hydrogen Fluoride	UN1052	HF	C	C	N	N	-	N	C	C	C	C	N	N	N



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			316 Stainless Steel	Monel	Brass	Aluminum	Zinc	Copper	Kel-F	Teflon	Tetzel	Kynar	Viton	Buna-N	Neoprene
Hydrogen Sulfide	UN1053	H <sub>2</sub> S	C	C	C	C	-	-	C	C	C	C	N	C	C
Isobutane	UN1969	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>3</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Isobutylene	UN1055	(CH <sub>3</sub> ) <sub>2</sub> C:CH <sub>2</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Krypton	UN1056	Kr	C	C	C	C	C	C	C	C	C	C	C	C	C
Methane	UN1062	CH <sub>4</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Methyl Bromide	UN1072	CH <sub>3</sub> Br	C	-	C	N	-	C	-	-	-	-	-	-	-
Methyl Chloride	UN1063	CH <sub>3</sub> Cl	C	C	C	N	N	C	C	C	C	C	N	N	N
Methyl Fluoride	UN2454	CH <sub>3</sub> F	C	C	C	C	-	C	C	C	C	C	-	-	-
Methyl Mercaptan	UN1064	CH <sub>3</sub> SH	C	C	C	C	-	C	-	-	-	-	-	-	-
Monomethylamine	UN1061	CH <sub>3</sub> NH <sub>2</sub>	C	N	N	N	N	N	-	-	-	-	-	-	-
Neon	UN1065	Ne	C	C	C	C	C	C	C	C	C	C	C	C	C
Nitric Oxide	UN1660	NO	C	C	C	C	-	C	-	-	-	-	-	-	-
Nitrogen	UN1066	N <sub>2</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Nitrogen Dioxide	UN1067	NO <sub>2</sub>	C	C	N	C	-	N	C	C	-	-	N	N	N
Nitrogen Trifluoride	UN2451	NF <sub>3</sub>	C	C	C	-	-	C	C	C	C	C	C	-	-
Nitrous Oxide	UN1070	N <sub>2</sub> O	C	C	C	C	C	C	C	C	C	C	C	C	C
Octafluorocyclobutane	UN1976	C <sub>4</sub> F <sub>8</sub>	C	C	C	C	-	C	C	C	-	-	C	C	C
Octafluoropropane	UN2424	C <sub>3</sub> F <sub>8</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Oxygen	UN1072	O <sub>2</sub>	S	C	C	N	C	C	C	C	C	C	S	N	N
Phosphine	UN2199	PH <sub>3</sub>	C	C	-	C	-	-	C	C	C	-	-	-	-
Propane	UN1978	C <sub>3</sub> H <sub>8</sub>	C	C	C	C	C	C	C	C	C	C	C	C	C
Propylene	UN1077	C <sub>3</sub> H <sub>6</sub>	C	C	C	C	C	C	C	C	C	C	C	C	N
Silane	UN2203	SiH <sub>4</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Silicon Tetrachloride	UN1818	SiCl <sub>4</sub>	C	C	N	N	-	N	C	C	C	C	N	N	N
Silicon Tetrafluoride	UN1859	SiF <sub>4</sub>	C	C	N	N	-	N	C	C	C	C	N	N	N
Sulfur Dioxide	UN1079	SO <sub>2</sub>	C	C	N	C	N	C	C	C	C	C	C	N	N
Sulfur Hexafluoride	UN1080	SF <sub>6</sub>	C	C	C	C	-	C	C	C	C	C	C	C	C
Sulfur Tetrafluoride	UN2418	SF <sub>4</sub>	C	C	N	N	-	N	C	C	C	C	N	N	N
Trimethylamine	UN1083	(CH <sub>3</sub> ) <sub>3</sub> N	C	C	N	N	N	N	-	-	-	-	-	-	-
Tungsten Hexafluoride	UN2196	WF <sub>6</sub>	C	C	N	N	-	C	C	C	C	C	N	N	N
Vinyl Methyl Ether	UN1087	CH <sub>2</sub> :CHOCH <sub>3</sub>	C	C	C	C	-	N	-	-	-	-	-	-	-
Xenon	UN2036	Xe	C	C	C	C	C	C	C	C	C	C	C	C	C