



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

– Insufficient data available at this time

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 ₂ H ₂	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 ₃	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 ₃	C	C	C			C	C	C	C	C	C	C	C
Boron Trichloride	UN1741	BCl ₃	C	C	S	N		C	C	C	C				
Boron Trifluoride	UN1008	BF ₃	C	C	S	C		S	C	C	C				
Bromine Trifluoride	UN1746	BrF ₃	C	C	S	S		S	S	C	N	N	N	N	N
1,3-Butadiene	UN1010	C ₄ H ₆	C	C	C	C	C	C	C	C	C	C	C	C	C
n-Butane	UN1011	C ₄ H ₁₀	C	C	C	C	C	C	C	C	C	C	C	C	C
1-Butene	UN1012	C ₄ H ₈	C	C	C	C	C	C	C	C	C	C	C	C	C
cis-2-Butene	UN1012	C ₄ H ₈	C	C	C	C	C	C	C	C	C	C	C	C	C
trans-2-Butene	UN1012	C ₄ H ₈	C	C	C	C	C	C	C	C	C	C	C	C	C
Carbon Dioxide	UN1013	CO ₂	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 ₂	C	C	N	N	N	N	C	C	C	C	C	N	N
Chlorine Trifluoride	UN1749	ClF ₃	C	C		N			S	S	C	N	N	N	N
Cyanogen	UN1026	C ₂ N ₂	C	C											
Cyclopropane	UN1027	C ₃ H ₆	C	C	C	C	C	C							
Deuterium	UN1957	D ₂	C	C	C	C	C	C	C	C	C	C	C	C	C
Dichlorosilane	UN2189	H ₂ SiCl ₂	C	C		N			C	C	C	C			
Dimethylamine	UN1032	(CH ₃) ₂ NH	C	C	N	N	N	N	C	C	C	C	N	N	
Dimethyl Ether	UN1033	(CH ₃) ₂ O	C	C	C	C	C	C	C	C	C	C	N	N	
Disilane	UN1954	Si ₂ H ₆	C	C	C	C		C	C	C	C	C	C	C	C
Ethane	UN1035	C ₂ H ₆	C	C	C	C	C	C	C	C	C	C	C	C	C
Ethyl Chloride	UN1037	CH ₃ CH ₂ Cl	C	C	C	C		C	C	C	C	C	C	C	C
Ethylene	UN1962	CH ₂ :CH ₂	C	C	C	C	C	C	C	C	C	C	C	C	C
Fluorine	UN1045	F ₂	C	C	S	S	S	S	S	S	S	S	N	N	N
Halocarbon-14	UN1982	CF ₄	C	C	C	C		C	C	C	C	C	C	C	C
Halocarbon-23	UN1984	CHF ₃	C	C	C	C		C	C	C	C	C	C	C	C
Halocarbon-32	UN3252	CH ₂ F ₂	C	C	C	C		C	C	C	C	C	C	C	C
Halocarbon-116	UN2193	C ₂ F ₆	C	C	C	C		C	C	C	C	C	C	C	C
Halocarbon-218	UN2424	C ₃ F ₈	C	C	C	C		C	C	C	C	C	C	C	C
Halocarbon-236a	UN1954	C ₃ H ₂ F ₆	C	C	C	C		C	C	C	C	C	C	C	C
Halocarbon-1113	UN1082	C ₂ ClF ₃	C	C	C	C		C	C	C	C	C	C	C	C
Halocarbon-4110	UN2810	C ₅ F ₈	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 ₂	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 ₂ S	C	C	N	C			C	C	C	C	N	C	C
Isobutane	UN1969	(CH ₃) ₂ CHCH ₃	C	C	C	C	C	C	C	C	C	C	C	C	C
Isobutylene	UN1055	(CH ₃) ₂ C:CH ₂	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 ₄	C	C	C	C	C	C	C	C	C	C	C	C	C
Methyl Bromide	UN1072	CH ₃ Br	C		C	N		C							
Methyl Chloride	UN1063	CH ₃ Cl	C	C	C	N	N	C	C	C	C	C	C	N	N
Methyl Fluoride	UN2454	CH ₃ F	C	C	C	C		C	C	C	C	C			
Methyl Mercaptan	UN1064	CH ₃ SH	C	C	C	C		C							
Monomethylamine	UN1061	CH ₃ NH ₂	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 ₂	C	C	C	C	C	C	C	C	C	C	C	C	C
Nitrogen Dioxide	UN1067	NO ₂	C	C	N	C		N	C	C			N	N	N
Nitrogen Trifluoride	UN2451	NF ₃	C	C	C			C	C	C	C	C	C		
Nitrous Oxide	UN1070	N ₂ O	C	C	C	C	C	C	C	C	C	C	C	C	C
Octafluorocyclobutane	UN1976	C ₄ F ₅	C	C	C	C		C	C	C	C			C	C
Octafluoropropane	UN2424	C ₃ F ₅	C	C	C	C		C	C	C	C	C	C	C	C
Oxygen	UN1072	O ₂	S	C	C	C	C	C	C	C	C	C	S	N	N
Phosphine	UN2199	PH ₃	C	C		C			C	C	C				
Propane	UN1978	C ₃ H ₈	C	C	C	C	C	C	C	C	C	C	C	C	C
Propylene	UN1077	C ₃ H ₆	C	C	C	C	C	C	C	C	C	C	C	C	N
Silane	UN2203	SiH ₄	C	C	C	C		C	C	C	C	C	C	C	C
Silicon Tetrachloride	UN1818	SiCl ₄	C	C	N	N		N	C	C	C	C	N	N	N
Silicon Tetrafluoride	UN1859	SiF ₄	C	C	N	N		N	C	C	C	C	N	N	N
Sulfur Dioxide	UN1079	SO ₂	C	C	N	C	N	C	C	C	C	C	C	N	N
Sulfur Hexafluoride	UN1080	SF ₆	C	C	C	C		C	C	C	C	C	C	C	C
Sulfur Tetrafluoride	UN2418	SF ₄	C	C	N	N		N	C	C	C	C	N	N	N
Trimethylamine	UN1083	(CH ₃) ₃ N	C	C	N	N	N	N							
Tungsten Hexafluoride	UN2196	WF ₆	C	C	N	N		C	C	C	C	C	N	N	N
Vinyl Methyl Ether	UN1087	CH ₂ :CHOCH ₃	C	C	C	C		N							
Xenon	UN2036	Xe	C	C	C	C	C	C	C	C	C	C	C	C	C