



# Material Compatibility Guide



S = Satisfactory for use with the intended gas with suitable conditions at room temperature

N = Not satisfactory for use with the intended gas

(-) = Insufficient data available to determine compatibility

Gas	UN Transportation Code	Chemical Formula	Primary Hazards					Metals					Plastics				Elastomers				Alerts	Special Characteristics
			Asphyxiant	Toxic	Flammable	Corrosive	Oxidizer	316 Stainless Steel	Monel	Brass	Aluminum	Zinc	Copper	Kel-F	Teflon	Tefzel	Kynar	Viton	Buna-N	Neoprene		
DICHLOROSILANE	UN2189	H <sub>2</sub> SiCl <sub>2</sub>					S	S	-	N	-	-	S	S	S	S	-	-	-			
DIMETHYLAMINE	UN1032	(CH <sub>3</sub> ) <sub>2</sub> NH					S	S	N	N	N	N	S	S	S	S	N	N	-			
DIMETHYL ETHER	UN1033	(CH <sub>3</sub> ) <sub>2</sub> O					S	S	S	S	S	-	S	-	S	S	-	-				
DISILANE	UN2203	Si <sub>2</sub> H <sub>6</sub>					S	S	S	S	-	S	S	S	S	S	S	S				
ETHANE	UN1035	C <sub>2</sub> H <sub>6</sub>					S	S	S	S	S	S	S	S	S	S	S	S				
ETHYL CHLORIDE	UN1037	C <sub>2</sub> H <sub>5</sub> Cl					S	S	S	S	-	S	S	S	S	S	S	S				
ETHYLENE	UN1962	C <sub>2</sub> H <sub>4</sub>					S	S	S	S	S	S	S	S	S	S	S	S				
FLUORINE	UN1045	F <sub>2</sub>					S	S	S	S	-	S	S	S	S	N	N	N				
HALOCARBON-11	-	CCl <sub>3</sub> F					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-12	UN1028	CCl <sub>2</sub> F <sub>2</sub>					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-13	UN1022	CClF <sub>3</sub>					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-13B1	UN1009	CBrF <sub>3</sub>					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-14	UN1982	CF <sub>4</sub>					S	S	S	S	-	S	S	S	S	S	S	S				
HALOCARBON-22	UN1018	CHClF <sub>2</sub>					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-23	UN1984	CHF <sub>3</sub>					S	S	S	S	-	S	S	S	S	S	S	S				
HALOCARBON-113	UN1078	CCl <sub>2</sub> FCClF <sub>2</sub>					S	S	S	S	N	S	-	-	-	-	-	-				
HALOCARBON-114	UN1958	C <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub>					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-115	UN1020	C <sub>2</sub> ClF <sub>5</sub>					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-116	UN2193	C <sub>2</sub> F <sub>6</sub>					S	S	S	S	-	S	S	S	S	S	S	S				
HALOCARBON-142B	UN2517	C <sub>2</sub> H <sub>3</sub> ClF <sub>2</sub>					S	S	S	S	-	S	-	-	-	-	-	-				
HALOCARBON-C318	UN1956	C <sub>4</sub> F <sub>8</sub>					S	S	S	S	-	-	-	-	-	-	-	-				
HALOCARBON-502	UN1973	CHClF <sub>2</sub> /CClF <sub>2</sub> -CF <sub>3</sub>					S	S	-	S	-	-	-	-	-	-	-	-				
HELIUM	UN1046	He					S	S	S	S	S	S	S	S	S	S	S	S				

Extremely reactive. Surface passivation required on all metals.

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HYDROGEN	UN1049	H <sub>2</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S		
HYDROGEN BROMIDE	UN1048	HBr						S	S	N	N	N	N	S	S	S	S	S	S	N	N	
HYDROGEN CHLORIDE	UN1050	HCl						S	S	N	N	N	N	S	S	S	S	S	S	N	N	
HYDROGEN FLUORIDE	UN1052	HF						S	S	N	N	-	-	S	S	S	S	N	N	N		
HYDROGEN SELENIDE	UN2202	H <sub>2</sub> Se						S	-	S	S	-	-	-	-	-	-	-	-	-	-	
HYDROGEN SULFIDE	UN1053	H <sub>2</sub> S						S	S	S	S	-	-	S	S	S	S	N	S	S		
ISOBUTANE	UN1969	CH(CH <sub>3</sub> ) <sub>3</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S	S	
ISOBUTYLENE	UN1055	C <sub>4</sub> H <sub>8</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S	S	
KRYPTON	UN1056	Kr						S	S	S	S	S	S	S	S	S	S	S	S	S	S	
METHANE	UN1062	CH <sub>4</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S	S	
METHYL BROMIDE	UN1072	CH <sub>3</sub> Br						S	-	S	N	-	S	S	S	-	-	S	-	-		
METHYL CHLORIDE	UN1063	CH <sub>3</sub> Cl						S	S	S	N	N	S	S	S	S	S	S	N	N		▶ Flammable; may react with aluminum to form pyrophoric compound.
METHYL FLUORIDE	UN2454	CH <sub>3</sub> F						S	S	S	S	-	S	S	S	S	-	-	-	-		
METHYL MERCAPTAN	UN1064	CH <sub>3</sub> SH						S	N	S	N	-	N	-	-	-	-	-	-	-		
MONOMETHYLAMINE	UN1061	CH <sub>3</sub> NH <sub>2</sub>						S	N	N	N	N	N	-	-	-	-	-	-	-		
NEON	UN1065	Ne						S	S	S	S	S	S	S	S	S	S	S	S	S	S	
NITRIC OXIDE	UN1660	NO						S	S	S	S	-	S	-	-	-	-	-	-	-		
NITROGEN	UN1066	N <sub>2</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S	S	
NITROGEN DIOXIDE	UN1067	NO <sub>2</sub>						S	S	N	S	-	-	S	S	-	-	N	N	N		
NITROGEN TRIFLUORIDE	UN2451	NF <sub>3</sub>						S	S	S	-	-	S	S	S	S	S	S	-	-		
NITROUS OXIDE	UN1070	N <sub>2</sub> O						S	S	S	S	S	S	S	S	S	S	S	S	S	S	
OCTAFLUOROCYCLOBUTANE	UN1976	C <sub>4</sub> F <sub>8</sub>						S	S	S	S	-	S	S	S	S	S	S	S	S	S	▶ Liquid may leach plasticizer.

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OCTAFLUOROPROPANE	UN2424	C <sub>3</sub> F <sub>8</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S				
OXYGEN	UN1072	O <sub>2</sub>						S	S	S	N	S	S	S	S	S	S	S	S	S	S	S	S	N	N		
PHOSGENE	UN1076	COCl <sub>2</sub>						S	S	-	-	-	N	S	S	-	S	S	-	-	-	-	-	-	-		
PHOSPHINE	UN2199	PH <sub>3</sub>						S	S	-	S	-	-	S	S	S	-	-	-	-	-	-	-	-	-		
PHOSPHORUS PENTAFLUORIDE	UN2198	PF <sub>5</sub>						S	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
PROPANE	UN1978	C <sub>3</sub> H <sub>8</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
PROPYLENE	UN1077	C <sub>3</sub> H <sub>6</sub>						S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	N		
SILANE	UN2203	SiH <sub>4</sub>						S	S	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S		
SILICON TETRACHLORIDE	UN1818	SiCl <sub>4</sub>						S	S	N	N	-	N	S	S	S	S	S	N	N	N	N	N	N	N		
SILICON TETRAFLUORIDE	UN1859	SiF <sub>4</sub>						S	S	N	N	-	N	S	S	S	S	S	N	N	N	N	N	N	N		
SULFUR DIOXIDE	UN1079	SO <sub>2</sub>						S	S	N	S	N	N	S	S	S	S	S	S	N	N	N	N	N	N		
SULFUR HEXAFLUORIDE	UN1080	SF <sub>6</sub>						S	S	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S		
SULFUR TETRAFLUORIDE	UN2418	SF <sub>4</sub>						S	S	N	N	-	N	S	S	S	S	N	N	N	N	N	N	N	N		
TRIMETHYLAMINE	UN1083	(CH <sub>3</sub> ) <sub>3</sub> N						S	S	N	N	N	N	N	S	-	N	N	-	-	-	-	-	-	-		
TUNGSTEN HEXAFLUORIDE	UN2196	WF <sub>6</sub>						S	S	N	N	-	N	S	S	S	S	N	N	N	N	N	N	N	N		
VINYL MEHTYL ETHER	UN1087	C <sub>3</sub> H <sub>6</sub> O						S	S	S	S	-	N	-	-	-	-	-	-	-	-	-	-	-	-		
XENON	UN2036	Xe						S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		

Highly toxic. High concentrations are pyrophoric.

Pyrophoric.