

Material Compatibility Chart

Gas	Primary Hazards					Metals					Plastics				Elastomers			Special Characteristics
	Asphyxiant	Toxic	Flammable	Corrosive	Oxidizer	Aluminum	Brass	Copper	Monel	Stainless Steel	Kel-F	Teflon	Tefzel	Kynar	Viton	Buna-N	Neoprene	
ACETYLENE						S	S	U	S	S	S	S	S	S	S	S	S	Extremely hazardous at pressures exceeding 15 psig. Brass with less than 65% copper content, suitable. Causes stress cracking of copper or copper alloys.
AIR						S	S	S	S	S	S	S	S	S	S	S	S	
AMMONIA						S	U	U	S	S	S	S	S	U	U	S	S	
ARGON						S	S	S	S	S	S	S	S	S	S	S	S	
*ARSINE						-	S	S	S	S	S	S	S	S	S	S	S	Highly toxic
BORON TRICHLORIDE						U	D	D	S	S	S	S	S	-	-	-	-	
BORON TRIFLUORIDE						-	D	D	S	S	S	S	S	-	-	-	-	
BORON-11 TRIFLUORIDE						-	D	D	S	S	S	S	S	-	-	-	-	
*BROMINE TRIFLUORIDE						D	D	D	S	S	D	D	S	U	U	U	U	Extremely reactive. Surface passivation required on all metals.
1,3-BUTADIENE						S	S	S	S	S	S	S	S	S	S	S	S	
n-BUTANE						S	S	S	S	S	S	S	S	S	S	S	S	
1-BUTENE						S	S	S	S	S	S	S	S	S	S	S	S	
cis-2-BUTENE						S	S	S	S	S	S	S	S	S	S	S	S	
trans-2-BUTENE						S	S	S	S	S	S	S	S	S	S	S	S	
CARBON DIOXIDE						S	S	S	S	S	S	S	S	S	S	D	D	
CARBON MONOXIDE						S	S	S	S	S	S	S	S	S	S	S	S	
CHLORINE						U	U	U	S	S	S	S	S	S	S	U	U	Highly toxic
*CHLORINE TRIFLUORIDE						U	-	-	S	S	D	D	S	U	U	U	U	Extremely reactive. Surface passivation required on all metals.
DEUTERIUM						S	S	S	S	S	S	S	S	S	S	S	S	
DICHLOROSILANE						U	-	-	S	S	S	S	S	S	-	-	-	
DI-, MONO-, AND TRIMETHYLAMINES						U	U	U	S	S	S	S	S	S	U	U	-	
DISILANE						S	S	S	S	S	S	S	S	S	S	S	S	
ETHANE						S	S	S	S	S	S	S	S	S	S	S	S	
ETHYL CHLORIDE						S	S	S	S	S	S	S	S	S	S	S	S	
ETHYLENE						S	S	S	S	S	S	S	S	S	S	S	S	
*FLUORINE						D	D	D	S	S	D	D	D	D	U	U	U	Extremely reactive. Surface passivation required on all metals.
HALOCARBON-14						S	S	S	S	S	S	S	S	S	S	S	S	
HALOCARBON-23						S	S	S	S	S	S	S	S	S	S	S	S	
HALOCARBON-116						S	S	S	S	S	S	S	S	S	S	S	S	
HELIUM						S	S	S	S	S	S	S	S	S	S	S	S	
HYDROGEN						S	S	S	S	S	S	S	S	S	S	S	S	
HYDROGEN BROMIDE						U	U	U	S	S	S	S	S	S	S	U	U	
HYDROGEN CHLORIDE						U	U	U	S	S	S	S	S	S	S	U	U	
*HYDROGEN FLUORIDE						U	U	U	S	S	S	S	S	S	U	U	U	
*HYDROGEN SULFIDE						S	S	-	S	S	S	S	S	S	U	S	S	
ISOBUTANE						S	S	S	S	S	S	S	S	S	S	S	S	
ISOBUTYLENE						S	S	S	S	S	S	S	S	S	S	S	S	
KRYPTON						S	S	S	S	S	S	S	S	S	S	S	S	
METHANE						S	S	S	S	S	S	S	S	S	S	S	S	
METHYL CHLORIDE						U	S	S	S	S	S	S	S	S	S	U	U	Flammable; may react with aluminum to form pyrophoric compound.
METHYL FLUORIDE						S	S	S	S	S	S	S	S	S	-	-	-	
NEON						S	S	S	S	S	S	S	S	S	S	S	S	
NITROGEN						S	S	S	S	S	S	S	S	S	S	S	S	
NITROGEN DIOXIDE						S	U	U	U	S	S	S	-	-	U	U	U	
NITROGEN TRIFLUORIDE						-	S	S	S	S	S	S	S	S	S	-	-	
NITROUS OXIDE						S	S	S	S	S	S	S	S	S	S	S	S	Liquid may leach plasticizer out of certain plastics.
OCTAFLUOROCYCLOBUTANE						S	S	S	S	S	S	S	S	S	S	S	S	
OCTAFLUOROPROPANE						S	S	S	S	S	S	S	S	-	-	S	S	
*OXYGEN						U	S	S	S	D	S	S	S	S	D	U	U	
*PHOSPHINE						S	-	-	S	S	S	S	S	-	-	-	-	Highly toxic. High concentrations are pyrophoric.
PROPANE						S	S	S	S	S	S	S	S	S	S	S	S	
PROPYLENE						S	S	S	S	S	S	S	S	S	S	S	S	
*SILANE						S	S	S	S	S	S	S	S	S	S	S	S	Pyrophoric.
SILICON TETRACHLORIDE						U	U	U	S	S	S	S	S	S	U	U	U	
SILICON TETRAFLUORIDE						U	U	U	S	S	S	S	S	S	U	U	U	
SULFUR DIOXIDE						S	U	S	S	S	S	S	S	S	S	U	U	
SULFUR HEXAFLUORIDE						S	S	S	S	S	S	S	S	S	S	S	S	
SULFUR TETRAFLUORIDE						U	U	U	S	S	S	S	S	S	U	U	U	
TUNGSTEN HEXAFLUORIDE						U	U	U	S	S	S	S	S	S	U	U	U	
XENON						S	S	S	S	S	S	S	S	S	S	S	S	

The data in this table are presented as a guide only. Please call our Technical Information Center for assistance with your specific application.
 Key: S = Satisfactory for use with the intended gas (dry anhydrous) at a normal operating temperature of 70°F. U = Unsatisfactory for use with the intended gas.
 (-) = Insufficient data available to determine the compatibility with the intended gas. D = Suitability depends on condition of use.
 *THE USER SHOULD BECOME THOROUGHLY FAMILIAR WITH THE SPECIFIC PROPERTIES OF THIS GAS. MATERIAL COMPATIBILITY DEPENDS ON CONDITION OF USE.