

# COMPATIBILITY OF MATERIALS WITH VARIOUS COMPOUNDS

T102

Gas	Primary Hazards					Material Compatibility												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	
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	
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	
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	
*CHLORINE TRIFLUORIDE						U	-	-	S	S	D	D	S	U	U	U	U	
DEUTERIUM						S	S	S	S	S	S	S	S	S	S	S	S	
DICHLOROSILANE						U	-	-	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	
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	
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	
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	-	-	-	-	-	
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	U	
*SILANE						S	S	S	S	S	D	S	S	S	S	S	S	
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	

Extremely hazardous at pressures exceeding 15 psig. Brass with less than 65% copper content, suitable. Causes stress cracking of copper or copper alloys.

Highly toxic

Extremely reactive. Surface passivation required on all metals.

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Flammable; may react with aluminum to form pyrophoric compound.

Liquid may leach plasticizer out of certain plastics.

Highly toxic. High concentrations are pyrophoric.

Pyrophoric.

The data in this table are presented as a guide only. Please call us for technical support.

Key: S = Satisfactory for use with the intended gas (dry anhydrous) at a normal operating temperature of 70°F.

(-) = Insufficient data available to determine the compatibility with the intended gas.

U = Unsatisfactory for use 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.