

# Gas Compatibility Chart

Common Name	Chemical Formula	Materials of Construction																
		Metals							Plastics					Elastomers				
		Brass	303 Stainless Steel	316 Stainless Steel	Aluminum	Zinc	Copper	Monel	PCTFE	Teflon	Tefzel	Kynar	PVC	Polycarbonate	Kalrez	Viton	Buna-N	Neoprene
Acetylene	C <sub>2</sub> H <sub>2</sub>	C1	S	S	I	U	U	S	S	S	S	I	I	S	C2	C2	C2	C2
Air	—	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Allene	C <sub>3</sub> H <sub>4</sub>	S	S	S	S	I	U	S	S	S	S	I	I	S	S	S	S	I
Ammonia	NH <sub>3</sub>	U	S	S	S	U	U	S	S	S	U	S	U	C3	U	S	S	U
Argon	Ar	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Arsine	AsH <sub>3</sub>	S	S	S	C5	I	S	S	S	S	S	S	I	S	S	S	S	U
Boron Trichloride	BCl <sub>3</sub>	U	S	S	I	I	S	S	S	S	I	S	I	C3	I	I	I	I
Boron Trifluoride	BF <sub>3</sub>	S	S	S	S	I	S	S	S	S	I	S	I	C3	I	I	I	I
1,3-Butadiene	C <sub>4</sub> H <sub>6</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	U	S	U
Butane	C <sub>4</sub> H <sub>10</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S
1-Butene	C <sub>4</sub> H <sub>8</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S
Cis-2-Butene	C <sub>4</sub> H <sub>8</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S
Trans-2-Butene	C <sub>4</sub> H <sub>8</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S
Carbon Dioxide	CO <sub>2</sub>	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Carbon Monoxide	CO	S	S	S	S	S	S	S	S	S	S	S	S	S	I	S	S	S
Carbonyl Sulfide	COS	S	S	S	S	I	S	S	S	S	S	S	I	I	S	I	I	I
Chlorine	Cl <sub>2</sub>	U	S	S	U	U	U	S	S	S	S	U	U	S	S	U	U	U
Deuterium	D <sub>2</sub>	S	S	S	S	S	S	S	S	S	S	S	I	S	S	S	S	S
Diborane	B <sub>2</sub> H <sub>6</sub>	S	S	S	S	I	S	S	S	S	I	I	I	S	I	I	I	I
Dichlorosilane	H <sub>2</sub> SiCl <sub>2</sub>	I	S	S	I	I	I	S	S	S	S	I	I	S	I	I	I	I
Dimethyl Ether	C <sub>2</sub> H <sub>6</sub> O	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	I
Ethane	C <sub>2</sub> H <sub>6</sub>	S	S	S	S	S	S	S	S	S	S	S	I	S	S	S	S	S
Ethyl Acetylene	C <sub>4</sub> H <sub>6</sub>	I	S	S	S	I	U	S	S	S	I	S	I	S	S	I	S	I
Ethyl Chloride	C <sub>2</sub> H <sub>5</sub> Cl	S	S	S	U	I	S	S	S	S	S	U	U	S	S	S	S	U
Ethylene	C <sub>2</sub> H <sub>4</sub>	S	S	S	S	S	S	S	S	S	S	I	I	S	S	S	S	I
Ethylene Oxide**	C <sub>2</sub> H <sub>4</sub> O	C4	S	S	C5	I	U	I	S	S	I	I	U	U	C3	U	U	U

\*\* Satisfactory for use with EPR (Ethylene Propylene Rubber) and EPDM.

## Gas Compatibility Chart (continued)

Common Name	Chemical Formula	Materials of Construction																	
		Metals						Plastics					Elastomers						
		Brass	303 Stainless Steel	316 Stainless Steel	Aluminum	Zinc	Copper	Monel	PCTFE	Teflon	Tefzel	Kynar	PVC	Polycarbonate	Kalrez	Viton	Buna-N	Neoprene	Polyurethane
Ethylene Oxide/Carbon Dioxide Mixtures**		C4	S	S	I	I	U	I	S	S	I	I	U	U	C3	U	U	U	U
Ethylene Oxide/Halocarbon Mixtures**		C4	S	S	I	I	U	I	S	S	I	I	U	U	C3	U	U	U	U
Ethylene Oxide/HCFC-124		C4	S	S	I	I	U	I	S	S	I	I	U	U	C3	U	U	U	U
Halocarbon 11	CCl <sub>3</sub> F	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	S	S	U	U
Halocarbon 12	CCl <sub>2</sub> F <sub>2</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 13	CClF <sub>3</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 13B1	CBF <sub>3</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 14	CF <sub>4</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 21	CHCl <sub>2</sub> F	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	U	U	S	S
Halocarbon 22	CHClF <sub>2</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	U	U	S	U
Halocarbon 23	CHF <sub>3</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	I	I	I	S
Halocarbon 113	CCl <sub>2</sub> FCClF <sub>2</sub>	S	S	S	C5	U	S	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 114	C <sub>2</sub> Cl <sub>2</sub> F <sub>4</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 115	C <sub>2</sub> ClF <sub>5</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 116	C <sub>2</sub> F <sub>6</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	I	I	I	S
Halocarbon 142B	C <sub>2</sub> H <sub>3</sub> ClF <sub>2</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	U	S	S	S
Halocarbon 152A	C <sub>2</sub> H <sub>4</sub> F <sub>2</sub>	S	S	S	C5	I	S	S	S	S	S	S	U	U	C3	U	S	S	S
Halocarbon C-318	C <sub>4</sub> F <sub>8</sub>	S	S	S	C5	I	I	S	S	S	S	S	U	U	C3	S	S	S	S
Halocarbon 502	CHClF <sub>2</sub> /CClF <sub>2</sub> -CF <sub>3</sub>	I	S	S	C5	I	I	S	S	S	I	S	U	U	C3	S	S	S	S
Halocarbon 1132A	C <sub>2</sub> H <sub>2</sub> F <sub>2</sub>	S	S	S	C5	I	S	S	I	S	S	S	U	U	C3	I	I	I	S
Helium	He	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Hydrogen	H <sub>2</sub>	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Hydrogen Chloride	HCl	U	S	S	I	U	U	S	S	S	S	S	U	S	S	U	U	U	U
Hydrogen Sulfide	H <sub>2</sub> S	U	S	S	S	I	I	S	S	S	S	S	S	S	U	S	S	S	S
Isobutane	C <sub>4</sub> H <sub>10</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S	S
Isobutylene	C <sub>4</sub> H <sub>8</sub>	S	S	S	S	I	S	S	S	S	S	S	I	S	S	S	S	S	I

\*\* Satisfactory for use with EPR (Ethylene Propylene Rubber) and EPDM.

## Gas Compatibility Chart (continued)

Common Name	Chemical Formula	Materials of Construction																	
		Metals							Plastics						Elastomers				
		Brass	303 Stainless Steel	316 Stainless Steel	Aluminum	Zinc	Copper	Monel	PCTFE	Teflon	Tefzel	Kynar	PVC	Polycarbonate	Kalrez	Viton	Buna-N	Neoprene	Polyurethane
Isopentane	C <sub>5</sub> H <sub>12</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S	
Krypton	Kr	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
Methane	CH <sub>4</sub>	S	S	S	S	S	S	S	S	S	S	S	I	S	S	S	S	S	
Methyl Chloride	CH <sub>3</sub> Cl	S	S	S	U	U	S	S	S	S	S	I	I	S	S	U	U	U	
Methyl Mercaptan	CH <sub>3</sub> SH	S	S	S	U	I	U	U	S	S	S	I	I	I	S	I	I	S	I
Neon	Ne	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
Nitric Oxide	NO	U	S	S	S	I	S	S	S	S	S	I	S	I	S	I	I	S	I
Nitrogen	N <sub>2</sub>	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Nitrogen Dioxide	NO <sub>2</sub>	I	S	S	S	I	I	S	S	S	S	I	U	I	S	U	U	U	U
Nitrous Oxide	N <sub>2</sub> O	S	C6	C6	C5	S	S	S	S	C5	S	S	S	I	C3	S	S	S	S
Oxygen	O <sub>2</sub>	S	C7	C7	C7	S	S	S	S	C5	S	S	S	S	C3	C8	C8	C8	S
Perfluoropropane	C <sub>3</sub> F <sub>8</sub>	S	S	S	S	I	S	S	S	S	S	I	I	I	I	I	S	S	I
Phosphine	PH <sub>3</sub>	I	S	S	S	I	I	S	S	S	S	I	I	I	S	I	I	I	I
Phosphorous Pentafluoride	PF <sub>5</sub>	I	S	S	I	I	I	S	S	S	S	I	I	I	I	I	I	I	I
Propane	C <sub>3</sub> H <sub>8</sub>	S	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S
Propylene	C <sub>3</sub> H <sub>6</sub>	S	S	S	S	S	S	S	S	S	S	S	U	S	S	U	U	U	U
Propylene Oxide	C <sub>3</sub> H <sub>6</sub> O	I	S	S	I	I	I	I	S	S	S	I	U	S	C3	U	U	U	U
Refrigerant Gases	—	See Halocarbons																	
Silane	SiH <sub>4</sub>	S	S	S	S	I	S	S	S	S	S	S	S	I	S	S	S	S	S
Silicon Tetrachloride	SiCl <sub>4</sub>	I	S	S	U	I	I	S	S	S	I	I	U	I	C3	I	I	I	I
Silicon Tetrafluoride	SiF <sub>4</sub>	S	S	S	S	I	S	S	S	S	S	S	S	I	C3	S	S	S	S
Sulfur Dioxide	SO <sub>2</sub>	U	S	S	S	U	U	S	S	S	S	S	U	S	S	U	U	S	S
Sulfur Hexafluoride	SF <sub>6</sub>	S	S	S	S	I	S	S	S	S	S	S	S	I	C3	S	S	S	S
Trichlorosilane	HSiCl <sub>3</sub>	I	S	S	U	I	I	S	S	S	I	I	U	I	C3	I	I	I	I
Vinyl Methyl Ether	C <sub>3</sub> H <sub>6</sub> O	S	S	S	S	I	U	S	S	S	S	I	I	U	C3	I	I	I	I
Xenon	Xe	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S