

**Table 8**  
**Data For Common Gases**

Substances with Threshold Limit Values of 50 PPM or less should only be used in a properly operating chemical fume hood.

Gas (state in cylinder)	Threshold Limit Values, ppm <sup>1</sup> C=Ceiling limit	Flammability Limits in Air % by Vol <sup>2</sup>	Major Hazards
Acetylene (Dissolved)	Not established (nontoxic, produces anesthetic effects)	2.5-81.0	Flammable; asphyxiant
Ammonia (Liquid)	25	15-28	Toxic
Argon	Not established (nontoxic)	None	Asphyxiant
Boron trifluoride	1 C	None	Toxic; causes burns
1,3-Butadiene (Liquid)	2	2-11.5	Flammable; skin irritant; suspect carcinogen
Butane (Liquid)	800 (nontoxic, produces anesthetic effects)	1.9-8.5	Flammable, narcosis
Carbon dioxide (Liquid)	5000 C=30,000	None	Asphyxiant
Carbon monoxide	25	12.5-74.0	Toxic; chemical asphyxiant
Chlorine (Liquid)	0.5 C=1.0	None	Irritant; causes burns; corrosive
Ethane (Liquid)	Not established (nontoxic, produces anesthetic effects)	3.0-12.5	Flammable; asphyxiant
Ethylene	Not established (nontoxic, produces anesthetic effects)	3.1-32.0	Flammable; asphyxiant
Ethylene oxide (Liquid pure)	1 ppm	3.0-100.0	Flammable; toxic can cause burns when trapped by clothing or shoes; affects multiple organs, suspect carcinogen
Helium	Not established (nontoxic)	None	Asphyxiant
Hydrogen	Not established	4.0-75.0	Flammable; asphyxiant
Hydrogen bromide (Liquid)	C=3.0	None	Toxic; causes burns;

			corrosive
Hydrogen chloride (Liquid)	C=5.0	None	Toxic; causes burns; corrosive
Hydrogen fluoride (Liquid)	C=3.0	None	Toxic; causes severe slow healing burns; corrosive
Hydrogen sulfide (Liquid)	10 C=15	4.3-45.0	Toxic; flammable; irritant
Methane	Not established	5.3-14.0	Flammable; asphyxiant
Methyl bromide (Liquid)	1	13.5-14.5	Toxic; causes burns
Methyl chloride (Liquid)	50 C=100	10.7-17.4	Toxic; flammable
Methyl mercaptan (Liquid)	0.5	Unknown	Irritant; flammable
Nitrogen (nontoxic)	Not established	None	Asphyxiant
Nitrogen dioxide (Liquid)	3 C=5.0	None	Toxic; corrosive
Oxygen	Nontoxic	None	Highly reactive, oxidizer
Phosgene (Liquid)	0.1	None	Toxic
Propane (Liquid)	Not established (nontoxic, produces anesthetic effects)	2.2-9.5	Flammable; asphyxiant
Sulfur dioxide (Liquid)	2 C=5.0	None	Toxic; causes burns
Vinyl chloride	1	4.0-22.0	Flammable; causes burns, human carcinogen

<sup>1</sup> Threshold Limit Values (2000) ACGIH, Cincinnati, Ohio

<sup>2</sup> Zabetakis, M. G. Flammability "Characteristics of Combustible Gases and Vapors" Bulletin 627, U.S. Bureau of Mines, U.S. Gov't Printing Office, WASH. D.C.