Threshold Limit Values and Flammability of Some Commonly Used Gases

| Substance | ACGIH Ceiling Level (C) or TLV-TWA* | Flammability |
|---|---|---|
| Acetylene [C2H2] | | High, Explosive |
| Ammonia [NH3] | 25 | High |
| Arsine [AsH3] | 0.05 | High, Explosive |
| Boron Trifluoride [BF3] | (C) 1 | Low |
| 1,3 Butadiene [C4H6] | 2 | High |
| Carbon Dioxide [CO2] | 5000 | Low |
| Carbon Disulfide [CS2] | 10 | High |
| Carbon Monoxide [CO] | 25 | High |
| Chlorine [Cl2*] | 0.5 | Low |
| Cyanogen [C2H2*] | 10 | High |
| Cyanogen Chloride [CNCl] | (C) 0.3 | Low |
| Diazomethane [CH2NO2] | 0.2 | Explosive |
| Diborane [B2H6] | 0.1 | High |
| Ethylene [C2H4] | | High |
| Ethylene Oxide [C2H4O] | 1.0 | High |
| Fluorine | 1 | Low |
| Formaldehyde [CH2O] | (C) 0.3 | High |
| Hydrogen [H2] | | High, Explosive |
| Hydrogen chloride (anhydrous) [HCl] | (C) 5.0 | Low |
| Hydrogen Cyanide | (C) 4.7 | High |

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|---|---|---|
| Hydrogen Fluoride [HF] | (C)3.0 | Low |
| Hydrogen Selenide [H2Se] | 0.05 | High |
| Hydrogen Sulfide [H2Se] | 10 | High |
| Methane [CH4] | | High |
| Methyl Acetylene [C3H4] | 1000 | High |
| Methyl Acetylene Propadiene Mixture [MAPP] | 1000 | High |
| Methyl Bromide [CH3Br] | 1 | High |
| Methyl Chloride [CH3Cl] | 50 | High |
| Methyl Mercaptan [CH4S] | 0.5 | High |
| Nickel Carbonyl [Ni(CO)4] | 0.05 | High |
| Nitric Oxide [NO] | 25 | Low |
| Nitrogen Dioxide [NO2] | 3 | Low |
| Nitrogen Trifluride [NF3] | 10 | Low |
| Oxygen Difluoride [OF2] | (C) 0.05 | Low |
| Ozone [O3] | 0.05 - 0.2 γ | Low |
| Phosgene [CCl2O] | 0.1 | Low |
| Phosphine [PH3] | 0.3 | High |
| Propane [C3H8] | 2500 | High, Explosive |
| Propylene [C3H6] | | High |
| Silane (Silicon Tetrahydride) [SiH4] | 5 | High |
| Stibine [SbH3] | 0.1 | High |
| Sulfur Dioxide [SO2] | 2 | Low |

| | | |
|---|---|---|
| Sulfur Tetrafluoride [SF4] | (C) 0.1 | Low |
| Trifluorobromomethane (Halon 1301) [CBrF3] | 1000 | Low |
| Vinyl Chloride [C2H3Cl] | 1 | High |

* parts per million

γ Depending on type of work.

References: CRC Handbook of Laboratory Safety 3rd Edition 2000 Threshold Limit Values and Biological Exposure Indices, ACGIH 1991 NFPA 45 Standard on Fire Protection for Laboratories Using Chemicals

ACGIH TLV-TWA: Threshold limit value (see glossary)

ACGIH TLV-C: Ceiling value (see glossary)