



Storage Requirements and Limits for Gas Cylinders

Based on NFPA 45 and the Uniform Fire Code (UFC)

Health Hazard: All gas cylinders with a Health Hazard Ratings (Blue) of 3 or 4 and cylinders with a Health Hazard Rating of 2 with no physiological warning properties (such as odor or irritation) must be kept in a continuously mechanically ventilated hood or enclosure. Not more than three gas cylinders are allowed per enclosure or 500 sq. ft. of lab space.

Flammability Hazard: No more than 3 full cylinders containing flammable gases per 500 sq. ft. in a lab space without sprinklers. If there are fire protection sprinklers, then 6 flammable gases cylinders are allowed per 500 sq. ft. All flammable cylinders should be at least 20 feet from oxidizing gases or separated by a fire-rated wall.

Reactivity Hazard: Pyrophoric gases must be stored in ventilated storage cabinets with fire protection sprinklers. There can be 6 cylinders of oxidizing gases in a space without sprinklers and 12 in a space with sprinklers. All other reactive gases have the same limits as flammable gases.

If a gas has properties of more than one hazard class, the most restrictive recommendations apply.

NFPA Rating of Some Gases:

Health Hazard	Flammability Hazard	Reactivity Hazard
ammonia 3-corrosive	acetylene 4	acetylene 3
arsine 4	ammonia 2	butadiene cyanogen 2
boron trichloride 3	butane 4	chlorine 1 ox
boron trifluoride 3	butene 4	diborane 3 pyrophoric
carbon monoxide 3	carbon monoxide 4	dichlorosilane 2 pyrophoric
chlorine trifluoride 4	ethane 4	ethylene 2
chlorine 3	ethyl chloride 4	fluorine 4 ox
chlorosilanes 3	ethylene 4	nitrogen oxides 1 ox
cyanogen 4	ethylene oxide 4	oxygen 1 ox
diborane 4	hydrogen 4	ozone 1 ox
fluorine 4	hydrogen sulfide 4	phosphine 1 pyrophoric
germane 4	methane 4	silane 4 pyrophoric
hydrogen cyanide 4	methyl amine 4	vinyl acetylene 3
hydrogen fluoride 3	methyl chloride 4	vinyl chloride 1
hydrogen sulfide 3	methyl ether 4	
nitric oxide 4	vinyl chloride 4	



Health Hazard	Flammability Hazard	Reactivity Hazard
nitrogen dioxide 4		
nitrogen oxides 3		
ozone 4		
phosgene 3		
phosphine 4		
hydrogen selenide 4		
silicon tetrafluoride 3		
stibene 4		
Other corrosive gases 3		