

INCOMPATIBLE CHEMICALS

The following substances may react violently with one another and must be kept apart. The list, which is merely a summary of the most important examples taken from the whole array of hazardous materials, is offered as a modest contribution to safety in the laboratory. When in doubt, always refer to the MSDS first.

Chemical	Incompatible with	Notes
Acetic acid	Chromium (VI) oxide, nitric acid, alcohols, ethylene glycol, perchloric acid, peroxides, permanganates	
Acetylene	Chlorine, bromine, fluorine, copper, silver, mercury	
Activated carbon	Calcium hypochlorite, oxidising agents	
Alkali metals	Water, carbon tetrachloride and other halogenated alkanes, carbon dioxide, halogens	
Aluminium alkyls	Water	
Ammonia, laboratory gas	Mercury (eg. in pressure gauges), chlorine, calcium hypochlorite, iodine, bromine, hydrogen fluoride	
Ammonium nitrate	Acids, powdered metals, flammable liquids, chlorates, nitrates, sulphur, fine-particulate organic or combustible materials	
Aniline	Nitric acid, hydrogen peroxide	
Benzoyl peroxide	Everything except other peroxides	Store with other organic peroxides
Bromine	As for chlorine	
Chlorates	Ammonium salts, acids, powdered metals, sulphur, fine-particulate organic or combustible substances	
Chlorine	Ammonia, acetylene, butadiene, butane, methane, propane, hydrogen, petroleum benzine, benzene, powdered metals	
Chromium (VI) oxide	Acetic acid, naphthalene, camphor glycerol, petroleum benzine, alcohols, flammable liquids. Copper Acetylene, hydrogen peroxide	
Cyanides	Acids	
Flammable liquids	Ammonium nitrate, chromium (VI) oxide, hydrogen peroxide, nitric acid, sodium peroxide, halogens	
Fluorine		Store fluorine separately
Hydrocarbons	Fluorine, chlorine, bromine, chromium (VI) oxide, sodium peroxide	Butane, propane, benzene, etc
Hydrogen fluoride	Ammonia (laboratory gas or solution)	
Hydrogen peroxide	Copper, chromium, iron, metals and metal salts, alcohols, acetone, organic substances, aniline, nitromethane, combustible substances (solid or liquid)	
Hydrogen sulphide	Fuming nitric acid, oxidising gases	
Iodine	Acetylene, ammonia (laboratory gas or solution)	
Mercury	Acetylene, ammonia	
Nitric acid, concentrated.	Acetic acid, aniline, chromium (VI) oxide, prussic acid, hydrogen sulphide, flammable liquids and gases	
Oxalic acid	Silver, mercury	

Perchloric acid	Acetic anhydride, bismuth and its alloys, alcohols, paper, wood	
Phosphorus	Sulphur, compounds containing oxygen, eg. chlorates	
Potassium	See alkali metals	
Potassium chlorate	See chlorates	
Potassium perchlorate	See chlorates	
Potassium permanganate	Glycerol, ethylene glycol, benzaldehyde, sulphuric acid	
Silver	Acetylene, oxalic acid, tartaric acid, ammonium compounds	
Sodium	See alkali metals	
Sodium peroxide	Methanol, ethanol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerol, ethylene glycol, ethyl acetate, methyl acetate	
Sulphuric acid	Potassium chlorate, potassium perchlorate, potassium permanganate	