

## **Table of Incompatible Chemicals**

The following substances may react violently with one another and must be kept apart.

<b>Chemical</b>	<b>Is Incompatible with</b>
Acetic acid	Chromic acid, nitric acid alcohols, ethylene glycol, perchloric acid, peroxides, permanganates
Acetone	Concentrated nitric and sulfuric acid mixtures, bromine, chlorine, chloroform, alumina
Acetylene	Chlorine, bromine, fluorine, copper, silver, mercury
Acids	Bases
Activated Carbon	Calcium hypochlorite, oxidizing agents
Alkali Metals	Water, carbon tetrachloride and other halogenated alkanes, carbon dioxide, halogens
Aluminum alloys	Acid or alkaline solutions, ammonium persulfate, chlorates, chlorinated compounds, nitrates, organic compounds in nitrate salt baths.
Ammonia, anhydrous	Mercury (e.g., in pressure gauges), chlorine, calcium hypochlorite, iodine, bromine, hydrogen fluoride
Ammonium nitrate	Acids, powdered metals, flammable liquids, chlorates, nitrates, sulfur, fine-particulate organic Nitrate or combustible materials.
Ammonium perchlorate	Combustible materials, oxidizing materials, acids, chlorates, nitrates
Ammonium permanganate	Combustible materials, oxidizing materials, acids, chlorates, nitrates
Aniline	Nitric acid, hydrogen peroxide
Arsenical materials	Reducing agents
Azides	Acids
Barium peroxide	Organics, oxidizable materials, water
Bases	Acids
Bismuth and its alloys	Perchloric acid
Bleach	Acids
Bromine	Ammonia, acetylene, butadiene, butane, methane, propane, hydrogen, petroleum benzine, benzene, powdered metals
Calcium oxide	Water
Carbon, activated	Calcium hypochlorite, all oxidizing agents
Carbon Tetrachloride	Sodium
Chlorates	Ammonium salts, acids, powdered metals, sulfur, fine-particulate organic or combustible substances
Chlorine	Acetone, ammonia, acetylene, butadiene, butane, methane, propane, hydrogen, petroleum benzine, benzene, powdered metals
Chromic Acid and	Acetic acid, naphthalene, camphor, glycerol, petroleum benzine, alcohols,

Chromium trioxide	flammable liquids
Copper	Acetylene, hydrogen peroxide
Cumene Hydroperoxide	Acids, both organic and inorganic
Cyanides	Acids, alkali
Flammable Liquids	Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens
Fluorine	Store separately, reacts with everything
Hydrocarbons (butane, propane, benzene, etc.)	Fluorine, chlorine, bromine, chromic acid, sodium peroxide
Hydrocyanic acid	Nitric acid, alkali
Hydrogen Fluoride	Ammonia, laboratory gas or solution
Hydrogen Peroxide	Acetic acid, acetone, alcohols, aniline, copper, chromium, iron, metals and metals salts, organic substances, nitromethane, combustibles (solid or liquid), sulfuric acid
Hydrogen Sulfide	Fuming nitric acid, oxidizing gases
Hypochlorites	Acids, activated carbon
Iodine	Acetylene, ammonia (laboratory gas or solution)
Lithium aluminum hydride	Air, chlorinated hydrocarbons, carbon dioxide, ethyl acetate, water
Magnesium powder	Carbonates, chlorates, heavy metal oxalates, oxides, nitrates, perchlorates, peroxides, phosphates, sulfates
Mercuric oxide	Sulfur
Mercury	Acetylene, ammonia
Nitrates	Combustible materials, esters, phosphorous, sodium acetate, stannous chloride, sulfuric acid, water, zinc powder
Nitric Acid, Conc.	Acetic acid, aniline, chromic acid, prussic acid, hydrogen sulfide, flammable liquids and gases, organic solvents
Nitrites	Acids, potassium, sodium cyanide
Oxalic Acid	Silver, mercury
Oxygen	Oils, grease, hydrogen, flammable liquids
Perchloric Acid	Acetic anhydride, bismuth and its alloys, alcohols, paper, wood
Phosphorus, red	Oxidizing materials
Phosphorus, white	Air, oxygen, alkalis, chlorates, reducing agents
Picric acid	Ammonia heated with oxides, salts of heavy metals, oxidizing agents
Potassium	Carbon tetrachloride, carbon dioxide, water
Potassium Chlorate	Sulfuric and other acids
Potassium Perchlorate	Sulfuric and other acids
Potassium Permanganate	Glycerol, ethylene glycol, benzaldehyde, sulfuric acid
Selenides	Reducing agents
Silver	Acetylene, ammonium compounds, oxalic acid, tartaric acid
Sodium	Carbon tetrachloride, carbon dioxide, water
Sodium chlorate	Acids, ammonium salts, oxidizable materials, sulfur
Sodium peroxide	Methanol, ethanol, glacial acetic acid, anhydride, benzaldehyde, carbon disulfide, glycerol, ethylene glycol, ethyl acetate, methyl acetate, furfural
Sulfides	Acids
Sulfur	Oxidizing materials
Sulfuric Acid	Potassium chlorate, potassium perchlorate, potassium permanganate
Tellurides	Reducing agents
Zinc chlorate	Acids, organic materials
Zinc powder	Acids
Zirconium powder	Carbon tetrachloride, halogenated hydrocarbons, peroxides, sodium bicarbonate, water

Please note: This is not an exhaustive list of incompatible chemicals. Please read Material Safety Data Sheets and lab standard operating procedures. Consult your Lab instructor/Principal Investigator to determine if additional incompatibilities exist.