

Appendix 8. Examples of Incompatible Chemicals

Chemical	Incompatible for Chemical Storage
Acetic acid	Aldehyde, bases, carbonates, chromic acid, ethylene glycol, hydroxides, metals, oxidizers, perchloric acid, peroxides, permanganates, phosphates, xylene
Acetone	Acids, e.g., concentrated nitric and sulfuric, amines, oxidizers, plastics
Acetylene	Copper metal, halogens, mercury, potassium, silver, including their compounds, oxidizers
Alkalis	Acids, carbon dioxides, chlorinated hydrocarbons, chromium, mercury, oxidizers, salt, sulfur, water
Anhydrous ammonia	Acids, aldehydes, amides, calcium hypochlorite, hydrogen fluoride, mercury, oxidizers, sulfur
Ammonium nitrate	Acids, alkalis, chlorates, fine organic powders, metals, nitrates, oxidizers, sulfur
Aniline	Acids, e.g., nitric, aluminum, dibenzoyl peroxide, hydrogen peroxide, oxidizers
Azides	Acids, heavy metals, oxidizers
Bromine	Acetaldehyde, acetylene, alcohols, alkalis, amines, butadiene, butane, ethylene, fluorine, hydrogen, ketones, metals (finely divided), sodium carbide, sulfur, turpentine
Calcium oxide	Acids, ethanol, fluorine
Carbon (activated)	Alkalis, all oxidizing agents, calcium hypochlorite, halogens
Carbon tetrachloride	Benzoyl peroxides, ethylene, fluorine, oxygen, silanes
Chlorates	Acids, ammonium salts, carbon, metal powders, sulfur, finely divided combustibles and organics
Chromic acid	Acetic acid, acetone, alcohols, alkalis, ammonia, bases, camphor, flammable liquids, glycerine, turpentine
Chromium trioxide	Benzene, phosphorus, hydrocarbons, metals, other organics
Copper	Acetylene, calcium, hydrogen peroxide, oxidizers
Cyanides	Acids, alkalis, strong bases
Flammable liquids	Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens
Fluorine	Ammonia, halocarbons, halogens, ketones, metals, organic acids, hydrocarbons, other combustible material
Hydrocarbons	Acids, bases, oxidizers
Hydrofluoric acid	Glass, organics, sodium
Hydrogen peroxide	Acetaldehyde, acetic acid, acetone, alcohols, aniline, carboxylic acid, flammable liquids, metals (or their salts), nitric acid, nitromethane, organics, phosphorus, sodium, sulfuric acid
Hydrogen sulfide	Acetaldehyde, oxidizers, e.g., fuming nitric acid, oxidizing gases, sodium

Hypochlorites	Acids, activated carbon
Iodine	Acetaldehyde, acetylene, ammonia, hydrogen, sodium
Mercury	Acetylene, aluminum, amines, ammonia, calcium, fulminic acid, lithium, oxidizers, sodium
Nitrates	Sulfuric acid, other acids, nitrites
Nitric acid (concentrated)	Acetic acid, acetonitrile, amines, ammonia, aniline, bases, benzene, brass, chromic acid, copper, cumene, flammable liquids and gases, formic acid, heavy metals, hydrogen sulfide, ketones, organic substances, sodium, toluene
Nitrites	Acids
Nitroparaffins	Amines, inorganic bases
Oxalic acid	Mercury, oxidizers, silver, sodium chlorite
Oxygen	Acetaldehyde, alkalis, alkalines, ammonia, carbon monoxide, ethers, flammable gases, liquids, solids, hydrocarbons, phosphorus
Perchloric acid	Acetic acid, acetic anhydride, alcohols, aniline, bismuth and bismuth alloys, combustible materials, dehydrating agents, ethyl benzene, hydriotic acid, hydrochloric acid, grease, iodides, ketones, other organic materials, oxidizers, pyridine
Peroxides, organic	Acids (inorganic, organic)
Phosphorus	Air, alkalis, oxygen, reducing agents
Potassium	Acetylene, acids, alcohols, carbon dioxide, carbon tetrachloride, halogens, hydrazine, mercury, oxidizers, selenium, sulfur
Potassium chlorate	Acids, e.g., sulfuric, ammonia, combustible materials, fluorine, hydrocarbons, metals, organic substances, sugars
Potassium perchlorate	Acids, e.g., sulfuric, alcohols, combustible materials, fluorine, hydrazine, metals, organic materials, reducing agents
Potassium permanganate	Benzaldehyde, ethylene glycol, glycerol, sulfuric acid
Selenides	Reducing agents
Silver	Acetylene, ammonia, ammonium compounds, fulminic acid, oxalic acid, oxidizers, ozonides, peroxyformic acid
Sodium	Acids, carbon tetrachloride, carbon monoxide, hydrazines, metals, oxidizers, water
Sodium nitrate	Acetic anhydride, acids, metals, organic matter, peroxyformic acid, reducing agents
Sodium nitrite	Ammonium nitrate and ammonium salts
Sodium peroxide	Acetic acid (glacial), acetic anhydride, benzene, benzaldehyde, carbon disulfide, ethyl acetate, furfural, glycerin, hydrogen sulfide metals, methyl acetate, peroxyformic acid, phosphorus
Sulfides	Acids
Sulfuric acid	Potassium chlorate, potassium perchlorate, potassium permanganate like compounds of sodium and lithium
Tellurides	Reducing agents

