

Chemical Storage - Incompatible Chemicals

Some chemicals should not be stored with other chemicals because of the potential for serious reaction (explosion) or formation of harmful gases. Incompatible chemicals must be stored in separate cabinets or secondary containers.

Chemical Class or Chemical Name	Incompatible Chemicals
Alkaline and alkaline earth metals, such as Sodium, Potassium, Cesium, Lithium, Magnesium, Calcium	Carbon dioxide, Carbon tetrachloride and other chlorinated hydrocarbons, any free acid or halogen. Do not use water, foam or dry chemical on fires involving these metals.
Acetic acid	Chromic acid, Nitric acid, hydroxyl compounds, Ethylene glycol, Perchloric acid, peroxides, permanganates.
Acetic anhydride	Chromic acid, Nitric acid, hydroxyl-containing compounds, Ethylene glycol, Perchloric acid, peroxides and permanganates.
Acetone	Concentrated Nitric and Sulfuric acid mixtures.
Acetylene	Copper, Silver, Mercury and halogens, Fluorine, Chlorine, Bromine.
Alkali & alkaline earth metals (such as powdered Aluminum or Magnesium, Calcium, Lithium, Sodium, Potassium)	Water, Carbon tetrachloride or other chlorinated hydrocarbons, Carbon dioxide, and halogens.
Aluminum alkyls	Halogenated hydrocarbons, water.
Ammonia (anhydrous)	Silver, Mercury, Chlorine, Calcium hypochlorite, Iodine, Bromine, Hydrogen fluoride, Chlorine dioxide, Hydrofluoric acid (anhydrous).
Ammonium nitrate	Acids, metal powders, flammable liquids, chlorates, nitrites, Sulfur, finely divided organics or combustibles.
Aniline	Nitric acid, Hydrogen peroxide.
Arsenical materials	Any reducing agent.
Azides	Acids.
Benzoyl peroxide	Chloroform, organic materials.
Bromine	Ammonia, Acetylene, Butadiene, Butane and other petroleum gases, Sodium carbide, Turpentine, Benzene and finely divided metals, Methane, Propane, Hydrogen.
Calcium carbide	Water (see also Acetylene).
Calcium hypochlorite	Methyl carbitol, Phenol, Glycerol, Nitromethane, Iron oxide, Ammonia, activated carbon.
Calcium oxide	Water.
Carbon, activated	Calcium hypochlorite, all oxidizing agents.
Carbon tetrachloride	Sodium.
Chlorates	Ammonium salts, acids, metal powders, Sulfur, finely divided organics or combustibles.
Chlorine	Ammonia, Acetylene, Butadiene, Butane, Propane, and other petroleum gases, Hydrogen, Sodium carbide, Turpentine, Benzene and finely divided metals, Methane.
Chlorine dioxide	Ammonia, Methane, Phosphine and Hydrogen sulfide.
Chlorosulfonic acid	Organic materials, water, powdered metals.
Chromic acid & Chromium trioxide	Acetic acid, Naphthalene, Camphor, Glycerin, Turpentine, alcohol and other flammable liquids, paper or cellulose.
Copper	Acetylene, Hydrogen peroxide, Ethylene oxide.

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Cumene hydro peroxide	Acids, organic or mineral.
Cyanides	Acids.
Ethylene oxide	Acids, bases, Copper, Magnesium perchlorate.
Flammable liquids	Ammonium nitrate, Chromic acid, Hydrogen peroxide, Nitric acid, Sodium peroxide, halogens.
Fluorine	Almost all oxidizable substances.
Hydrocarbons (such as Bromine, Butane)	Fluorine, Chlorine, Chromic acid, Sodium peroxide.
Hydrocyanic acid	Nitric acid, alkalis.
Hydrofluoric acid (anhydrous)	Ammonia (aqueous or anhydrous).
Hydrogen peroxide	Copper, Chromium, Iron, most metals or their salts, any flammable liquid, combustible materials, Aniline, Nitromethane, alcohols, Acetone, organic materials, Aniline.
Hydrides	Water, air, Carbon dioxide, chlorinated hydrocarbons.
Hydrofluoric acid, anhydrous (Hydrogen fluoride)	Ammonia (anhydrous or aqueous), organic peroxides.
Hydrogen sulfide	Fuming Nitric acid, oxidizing gases.
Hydrocarbons (Benzene, Butane, Propane, Gasoline, Turpentine, etc.)	Fluorine, Chlorine, Bromine, Chromic acid, Sodium peroxide, fuming Nitric acid.
Hydroxylamine	Barium oxide, Lead dioxide, Phosphorus pentachloride and trichloride, Zinc, Potassium dichromate.
Hypochlorites	Acids, activated Carbon.
Iodine	Acetylene, Ammonia (anhydrous or aqueous), Hydrogen.
Maleic anhydride	Sodium hydroxide, Pyridine and other tertiary amines.
Mercury	Acetylene, Fulminic acid, Ammonia, Oxalic acid.
Nitrates	Acids, metal powders, flammable liquids, chlorates, sulfur, finely divided organics or combustibles, Sulfuric acid.
Nitric acid (concentrated)	Acetic acid, Aniline, Chromic acid, Hydrocyanic acid, Hydrogen sulfide, flammable liquids, flammable gases, nitratable substances, organic peroxides, chlorates, Copper, brass, any heavy metals.
Nitroparaffins	Inorganic bases, amines.
Oxygen	Oil, grease, Hydrogen, flammable liquids, solids, or gases.
Oxalic acid	Silver, mercury, organic peroxides.
Perchlorates	Acids.
Perchloric acid	Acetic anhydride, Bismuth and its alloys, alcohol, paper, wood, grease, oil, organic amines or antioxidants.
Peroxides, organic	Acids (organic or mineral); avoid friction, store cold.
Phosphorus (white)	Air, Oxygen, alkalis, reducing agents.
Phosphorus pentoxide	Propargyl alcohol.
Potassium	Carbon tetrachloride, Carbon dioxide, water.
Potassium chlorate	Acids, Sulfuric acid (see also chlorates).
Potassium perchlorate	Sulfuric & other acids (see also Perchloric acid, & chlorates).
Potassium permanganate	Glycerin, Ethylene glycol, Benzaldehyde, any free acid, Sulfuric acid.

Chemical Class or Chemical Name	Incompatible Chemicals
Selenides	Reducing agents
Silver	Acetylene, Oxalic acid, Tartaric acid, Fulminic acid, ammonium compounds.
Sodium	Carbon tetrachloride, Carbon dioxide, water. See alkaline metals.
Sodium amide	Air, water.
Sodium nitrate	Ammonium nitrate and other ammonium salts.
Sodium oxide	Water, any free acid.
Sodium peroxide	Any oxidizable substance, such as Ethanol, Methanol, glacial Acetic acid, Acetic anhydride, Benzaldehyde, Carbon disulfide, Glycerine, Ethylene glycol, Ethyl acetate, Methyl acetate and Furfural.
Sulfides	Acids.
Sulfuric acid	Chlorates, perchlorates, permanganates, organic peroxides. Potassium chlorate, Potassium perchlorate, Potassium permanganate (similar compounds of light metals, such as Sodium, Lithium).
Tellurides	
UDMH (1,1-Dimethylhydrazine)	Oxidizing agents such as Hydrogen peroxide and fuming Nitric acid.
Zirconium	Prohibit water, Carbon tetrachloride, foam and dry chemical on zirconium fires.