



UMBC

## Incompatibility Cheat Sheet

**Acetic acid** - Chromic acid, nitric acid, hydroxyl compounds, ethylene glycol, perchloric acid, peroxides, permanganates, ammonium nitrate

**Acetic anhydride** - Hydroxyl-containing compounds such as ethylene glycol, perchloric acid

**Acetone** - Concentrated nitric and sulfuric acid mixtures

**Acetaldehyde** - Acetic acid, acetic anhydride

**Acetylene** - Chlorine, bromine, copper, fluorine, silver, mercury

**Acrolein** - Ammonia(aqueous), any alkali or amine, strong oxidizing agents

**Alkali and alkaline earth metals** (such as powdered aluminum or magnesium, calcium, lithium, sodium, potassium) - Water, carbon tetrachloride or other chlorinated hydrocarbons, carbon dioxide, halogens.

**Aluminum metal** - Ammonium nitrate, antimony trichloride, bromate

**Ammonia (anhydrous)** - Mercury (in manometers, for example), chlorine, calcium hypochlorite, iodine, bromine, hydrofluoric acid (anhydrous)

**Ammonium nitrate** - Acids, powdered metals, flammable liquids, chlorates, nitrites, sulfur, finely divided organic combustible materials

**Aniline** - Nitric acid, hydrogen peroxide, strong acids, oxidizers

**Arsenic materials** - Any reducing agent

**Azides** - Acids

**Bromine** - Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), hydrogen, sodium carbide, benzene, finely divided metals, turpentine

**Calcium oxide** - Water

**Carbon (activated)** - Calcium hypochlorite, all oxidizing agents

**Carbon tetrachloride** - Sodium

**Chlorates** - Ammonium salts, acids, powdered metals, sulfur, finely divided organic or combustible materials

**Chromic acid and chromium trioxide** - Acetic acid, naphthalene, camphor, glycerol, alcohol, flammable liquids in general

**Chlorine** - Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), hydrogen, sodium carbide, benzene, finely divided metals, turpentine

**Chlorine dioxide** - Chlorine Ammonia, methane, phosphine, hydrogen sulfide

**Copper** - Acetylene, hydrogen peroxide

**Cumene hydroperoxide** - Acids (organic or inorganic)

**Cyanides** - Acids

**Flammable liquids** - Ammonium nitrate, chromic acid, HCl, hydrogen peroxide, nitric acid, sodium peroxide, halogens

**Fluorine** - All other chemicals

**Hydrazine** - Hydrogen peroxide, nitric acid, any other oxidant

**Hydrocarbons** - Fluorine, chlorine, bromine, chromic acid, peroxides, sodium peroxide

**Hydrocyanic acid** - Nitric acid, alkalis

**Hydrofluoric acid (anhydrous)**, hydrogen fluoride -Ammonia (aqueous or anhydrous)

**Hydrogen peroxide** - Copper, chromium, iron, most metals or their salts, alcohols, acetone, organic materials, aniline, nitromethane, combustible materials, ferrous sulfide

**Hydrogen sulfide** - Fuming nitric acid, oxidizing gases

**Hypochlorites** - Acids, activated carbon

**Iodine** - Acetylene, ammonia (aqueous or anhydrous), hydrogen

**Mercury** - Acetylene, fulminic acid\*, ammonia

**Methanol** -Lead perchlorate, mercury nitrate

**Nitrates** - Sulfuric acid

**Nitric acid (concentrated)** -Acids: acetic,chromic, hydrocyanic Flammable liquids:acetone, alcohol Flammable gases: H2S Heavy metals: any, copper, brass

**Nitrites** - Acids

**Nitroparaffins** - Inorganic bases, amines

**Oxalic acid** - Silver, mercury and their salts

**Oxygen** - Oils, grease, hydrogen, flammable liquids, solids or gases

**Perchloric acid** - Acetic anhydride, bismuth and its alloys, alcohol, paper, wood, grease, oils  
Peroxides, organic - Acids (organic or mineral) avoid friction, store cold

**Phosphorus (white)** - Air, oxygen, alkalis, reducing agents

**Phosphorus pentoxide** - Alcohols, strong bases, water

**Potassium** - Carbon tetrachloride, carbon dioxide, water

**Potassium chlorate** - Sulfuric and other acids, ammonium salts, metal powders, combustibles

**Potassium nitrite** - Potassium cyanide(if heated)

**Potassium perchlorate** - Acids, Acetic anhydride, bismuth and its alloys, alcohol, paper, wood, grease, oils Selenides - Reducing agents

**Sodium Azide** - Heavy Metals: Lead, Copper

**Sodium** - Water, carbon tetrachloride or other chlorinated hydrocarbons, carbon dioxide, halogens, sulfur

**Sodium nitrite** - Ammonium nitrate and other ammonium salts

**Sodium peroxide** - Ethyl or methyl alcohol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerin, ethylene glycol, ethyl acetate, methyl acetate, furfural

**Sulfides** -Acids

**Sulfur** -Silver Oxide

**Sulfuric acid** - Chlorates, perchlorates, permanganates and their compounds with potassium/sodium/lithium

**Tellurides** - Reducing Agents