

B-3.0 Incompatibilities of Common Industrial Chemicals (Alphabetical order; not all inclusive; check MSDS and Supplier Literature) Page 1 of 2

[B-3] Compound	Incompatible Compounds/Chemicals	Compound	Incompatible Compounds/Chemicals
Acetic Acid	Chromic, nitric, perchloric acids, peroxides, ethylene glycol.	Chlorine dioxide	Ammonia, hydrogen, sulfide, methane, phosphine, organics
Acetone	Bromine, chlorine, nitric and sulfuric acids	Copper	Acetylene, hydrogen peroxide, sodium azide
Acetylene	Bromine, chlorine, copper, fluorine, mercury, silver	Cyanide	Acids; alkalis
Activated Carbon	Calcium hypochlorite, oxidizing agents	Fluorine	Almost any chemical compound
Aluminum (powdered)	Acid and alkaline solutions, ammonia persulfate, water, chlorinated compounds, nitrates.	Flammable liquids	Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens
Ammonium nitrate	Acids, chlorates, chlorides, lead, metallic nitrates, metal powders, sulfur, powdered organic combustibles, zinc.	Hydrocarbons, general	Bromine, chlorine, chromic acid, fluorine, hydrogen peroxide, sodium peroxide
Ammonium perchlorate	Combustibles, oxidizers, acids, chlorates, nitrates	Hydrogen cyanide	Alkalies, nitric acid, oxidizers
Anhydrous Ammonia	Bromine, calcium hypochlorite, chlorine, HF acid, iodine, mercury	Hydrogen peroxide (3%)	Chromium, copper, iron, most metals and metal salts
Aniline	Hydrogen peroxide, nitric acid	Hydrogen sulfide	Fuming nitric acid, oxidizing gases
Bismuth + alloys	Perchloric acid	Iodine	Acetylene, ammonia
Bromine	Acetone, acetylene, ammonia, benzene, butadiene, petroleum vapors, hydrogen, finely-powered metals, sodium carbide, turpentine	Lithium	Acids, moisture in air, water, oxidizers
Calcium/sodium carbide	Moisture in air, water	Magnesium (powdered)	Carbonates, chlorates, heavy metal oxides, nitrates, perchlorates, peroxides, phosphates, sulfates
Calcium hypochlorite	Activated ammonia, carbon-containing materials	Mercuric oxide	Sulfur, reducing materials
Chlorine	Acetone, acetylene, ammonia, benzene, butadiene, petroleum vapors, hydrogen, finely-powered metals, sodium carbide, turpentine	Mercury	Acetylene, alkali metals, ammonia, nitric acid with ethanol, oxalic acid, azides

[B-3] Compound	Incompatible Compounds/Chemicals	Compound	Incompatible Compounds/Chemicals
[page 2 of 2] Nitrates	Combustible/flammable materials, esters, phosphorous, sodium acetate, stannous chloride, water, zinc powder	Sodium amide	Air (moisture and oxygen), water, oxidizers
Nitric acid	Oxidizable organic materials, metals, many others.	Silver	Acetylene, ammonium compounds, nitric acid with ethanol, oxalic acid, tartaric acid, fulminic acid, azides
Nitrites	Potassium, sodium cyanide, reducing materials	Sodium	Carbon tetrachloride, carbon dioxide, water, moisture
Oxygen (liquid or oxygen-enriched air)	Flammable gases, liquids, solids, e.g., grease, oils, acetylene.	Sodium chlorate	Acids, ammonium salts, oxidizable materials, sulfur
Perchloric acid	Acetic anhydrides, alcohols, bismuth, organic materials (oil, wood, grease, paper)	Sodium nitrate	Ammonium nitrates, salts, other compounds; organic materials, friction
Perchlorates	Acids, aluminum, ammonium salts, cyanide, phosphorus, metal powders, finely divided organics	Sodium peroxide	Glacial acetic acid, acetic anhydride, alcohols, benzaldehyde, carbon disulfide, ethyl acetate, ethylene glycol, furfural, glycerine, methyl acetate, oxidizable materials, powdered metals, acids, organic materials
Peroxides (organic)	Acids (mineral or organic), reducing agents	Sulfur	Any oxidizing materials
Phosphorus	Chlorates, perchlorates, nitrates, nitric acid, organic materials, reducing agents, air, oxygen, many others	Sulfuric acid	Chlorates, perchlorates, permanganates, combustibles
Picric Acid	Ammonia heated with oxides, salts, heavy metals (copper, lead, zinc), friction with oxidizing and reducing agents	Water	Acetyl chloride, carbides, chromic acid, phosphorous oxychloride, phosphorus compounds, sulfuric acid, sulfur trioxide
Potassium	Air (moisture and/or oxygen), water, carbon dioxide, carbon tetrachloride	Zinc Chloride	Acids, organic materials
Potassium chlorates	Acids, combustible materials, organic solvents, phosphorus, sulfur	Zinc powder	Acids, water
Potassium permanganate	Benzaldehyde, ethylene glycol, glycerin, sulfuric acid	Zirconium powder	Carbon tetrachloride, halogenated hydrocarbons, peroxides, sodium bicarbonate, water, air