

## CHEMICAL INCOMPATIBILITIES

## PARTIAL LIST

<b>Chemical</b>	<b>Incompatible Chemicals</b>
Acetic acid	Chromic acid, nitric acid, peroxides, permanganates, hydroxyl compounds, ethylene glycol, perchloric acid
Acetic anhydride	Hydroxyl-containing compounds (e.g., ethylene glycol, perchloric acid)
Acetone	Concentrated nitric and sulfuric acid mixtures, hydrogen peroxide
Acetylene	Chlorine, bromine, copper, silver, fluorine, mercury
Alkali and alkaline earth as sodium, magnesium, calcium, powdered aluminum	Water, carbon dioxide, carbon tetrachloride, other metals, such as chlorinated hydrocarbons, halogens, potassium, lithium, chemical extinguishers (water, foam, and dry)
Ammonia (anhydrous)	Mercury, chlorine, calcium hypochlorite, iodine, bromine, hydrofluoric acid (anhydrous)
Ammonium nitrate	Acids, metal powders, flammable liquids, chlorates, nitrites, sulfur, finely divided organics, combustibles
Aniline	Nitric acid, hydrogen peroxide
Arsenical materials	Any reducing agent
Azides	Acids
Bromine	Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), sodium carbide, turpentine, benzene, hydrogen, finely divided metals
Calcium oxide	Water
Carbon (activated)	Calcium hypochlorite, all oxidizing agents
Chlorates	Ammonium salts, acids, metal powders, sulfur, finely divided organics, combustibles
Chromic acid and chromium trioxide	Acetic acid, naphthalene, camphor, glycerol, turpentine, alcohol, other flammable liquids
Chlorine	Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), sodium, carbide, turpentine, benzene, hydrogen, finely divided metals
Chlorine dioxide	Ammonia, methane, phosphine, hydrogen sulfide
Copper	Acetylene, hydrogen peroxide
Cumene hydroperoxide	Acids
Cyanides	Acids
Flammable liquids	Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, perchloric acid, sodium peroxide, halogens
Fluorine	Isolate from everything
Hydrazine	Hydrogen peroxide, nitric acid, other oxidants
Hydrocarbons (benzene, propane, gasoline, etc.)	Fluorine, chlorine, bromine, chromic acid, butane, peroxides

## APPENDIX B

### CHEMICAL INCOMPATIBILITIES

#### *PARTIAL LIST*

(continued)

<b>Chemical</b>	<b>Incompatible Chemicals</b>
Hydrocyanic acid	Nitric acid, alkalis
Hydrofluoric acid	Ammonia (aqueous or anhydrous)
Hydrogen Peroxide	Copper, chromium, iron, most metals or their salts, alcohols, acetone, organic materials, aniline, nitromethane, combustible material
Hydrogen Sulfide	Fuming nitric acid, oxidizing gases
Iodine	Acetylene, ammonia (aqueous or anhydrous), hydrogen
Mercury	Acetylene, fulminic acid, ammonia
Nitrates	Sulfuric acid
Nitric Acid (concentrated)	Acetic acid, aniline, chromic acid, hydrocyanic acid, hydrogen sulfide, flammable liquids, flammable gases, copper, brass, any heavy metals
Nitrites	Acids
Nitroparaffins	Inorganic bases, amines
Oxalic acid	Silver, mercury
Oxygen	Oils, greases, hydrogen, flammable liquids, solids, or gases
Perchloric acid	Acetic anhydride, acetic acid, bismuth and its alloys, alcohol, paper, wood, greases, oils, flammables
Peroxide, organic	Acids (also avoid friction, store cold)
Phosphorus (white)	Air, oxygen, alkalis, reducing 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, oxalic acid, tartartic acid, ammonium compounds, fulminic acid
Sodium	Carbon tetrachloride, carbon dioxide, water
Sodium nitrate	Ammonium nitrate and other ammonium salts
Sodium peroxide	Ethyl or methyl alcohol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerine, ethyl acetate, methyl acetate, furfural
Sulfides	Acids
Sulfuric acid	Potassium chlorate, potassium perchlorate, potassium permanganate (similar compounds of light metals such as sodium and lithium)