

Chemical Storage Guidelines

Use these guidelines to determine appropriate storage locations for the chemicals in your area. The tables below show examples of chemicals within each group, but are NOT all inclusive. For more information about storing chemicals, refer to your [Safety Data Sheets](#), the [Laboratory Safety Manual](#) or contact an EH&S [Lab Safety Specialist](#).



Acids (pH < 2.5)



Mineral acid	Organic acid	Oxidizing acid
Hydrochloric acid	Acetic acid	Nitric acid
Phosphoric acid	Formic acid	Perchloric acid

Storage: Store in a corrosives cabinet, if available, or in compatible secondary containment.

Incompatibility information: Acids should be segregated from Bases and Flammables.

Oxidizing acids are incompatible with most chemicals, especially organics.

Specific combinations to avoid:

Acetic acid with chromic acid, nitric acid, hydroxyl compounds, ethylene glycol, perchloric acid, peroxides or permanganates

Chromic acid with acetic acid, naphthalene, camphor, glycerin, turpentine, alcohol (especially ethanol*) or flammable liquids

Nitric acid with acetic acid, aniline, chromic acid, hydrocyanic acid, hydrogen sulfide, flammable liquids, flammable gases, copper, brass or any heavy metals

Perchloric acid with acetic acid*, acetic anhydride, bismuth and its alloys, alcohol, paper, wood, ether, oils or grease



Bases (pH > 12.5)



Inorganic base	Organic base
Potassium hydroxide	Diethylamine
Sodium hydroxide	Piperidine

Storage: Store liquids in a corrosives cabinet, if available, or in compatible secondary containment.

Incompatibility information: Bases should be segregated from Acids, Flammables and Reactives.



Flammables



Flammable liquid	Flammable solid
Acetone	Napthalene
Ether	Paraformaldehyde

Storage: Flammable liquids totaling more than 10 gallons should be stored in a flammables cabinet.

Incompatibility information: Flammables should be segregated from Acids, Bases and Oxidizers.

Specific combinations to avoid:

Flammable liquids with ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide and halogens (fluorine, chlorine, bromine, iodine).



Oxidizers



Examples of -ates	Examples of -ites	Peroxide examples
Calcium nitrate	Potassium nitrite	3-Chloroperoxybenzoic acid
Potassium dichromate	Sodium hypochlorite	Hydrogen peroxide

Incompatibility information: Oxidizers should be segregated from Bases, Flammables, and Reactives. Oxidizers should also be segregated from Reducing Agents such as ammonia, activated carbon, metals and metal hydrides.

Specific combinations to avoid:

Ammonium nitrate with acids, metal powders, flammable liquids, chlorates, nitrites and sulfur and finely divided organic or combustible materials.

Hydrogen peroxide with alcohols, acetone, aniline, copper, chromium, iron, phosphorus, nitromethane, organic materials and other metals and their salts.

Hypochlorites with acids, activated carbon and sulfuric and other acids.

Nitrates with acids, activated carbon and sulfuric and other acids.

Nitrites with acids.

Potassium chlorate with sulfuric and other acids.

Potassium permanganate with benzaldehyde, ethylene glycol, glycerin and sulfuric acid.



Poisons/Toxics



Acutely toxic	Organic poison	Inorganic poison
Hydrogen cyanide	Acrylamide	Lead chloride
Sodium azide	Ethidium bromide	Mercuric iodide

Incompatibility information: See individual Safety Data Sheets (SDS) for incompatibility information.

Specific combinations to avoid:

Azides with acids, heavy metals and their salts and oxidizing agents.

Cyanides with acids.

Sulfides with acids.



Reactives



Air reactive (pyrophoric)	Water reactive
Butyllithium	Acetic anhydride
White phosphorus	Sodium metal

Storage: See individual SDSs for storage information.

Incompatibility information: Reactives should be segregated from Acids, Bases and Oxidizers.

Specific combinations to avoid:

Alkali metals (i.e. lithium, sodium, potassium, rubidium and cesium) with carbon tetrachloride or other chlorinated hydrocarbons, carbon dioxide and water.

Anhydrides with water.

White phosphorus with air, alkali metals, reducing agents and strong bases.

Low Hazard Chemicals

Liquids	Solids
Buffer solutions	Carbonates, Phosphates, Sulfates
Weak acids/bases (i.e. citric acid)	Salts (i.e. calcium or sodium chloride)