

Laboratory Safety Reminders

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CHEMICAL STORAGE SEGREGATION GUIDELINES



Incompatible chemicals should always be handled and stored so that they do not accidentally come in contact with each other. This list is not complete, nor are all compatibilities shown. These materials can react to produce excessive heat, harmful vapors, and/or other deadly reactions. Always know the hazards and incompatibilities of a chemical before using it.

Chemicals	Avoid Accidental Contact With
Acetic acid	Chromic acid, nitric acid, permanganates, peroxides
Acetic anhydride	Hydroxyl-containing compounds such as perchloric acid, ethylene glycol
Acetone	Concentrated nitric acid and sulfuric acid mixtures, peroxides (i.e. peracetic acid solution, hydrogen peroxide)
Acetylene	Chlorine, bromine, copper, silver, fluorine, mercury
Alkali, alkaline earth and strongly electropositive metals (powered aluminum, magnesium, sodium, potassium)	Carbon dioxide, carbon tetrachloride and other chlorinated hydrocarbons
Ammonia (anhydrous)	Mercury, chlorine, calcium hypochlorite, iodine, bromine, hydrogen fluoride
Ammonium nitrate	Acids, metal powders, flammable liquids, chlorates, nitrates, sulfur, finely divided organics, combustibles
Aniline	Nitric acid, hydrogen peroxide
Arsenical compounds	Any reducing agent
Azides	Acids
Bromine	Ammonia, acetylene, butadiene, butane, other petroleum gases, sodium carbide, turpentine, benzene, finely divided metals
Calcium oxide	Water
Carbon activated	Calcium hypochlorite, other oxidants
Chlorates	Ammonium salts, acids, metal powders, sulfur, finely divided organics, combustibles
Chromic acid and chromium trioxide	Acetic acid, ethyl alcohol, naphthalene, camphor, glycerol, turpentine, benzene, alcohol, other flammable liquids
Chlorine	Ammonia, acetylene, butadiene, butane, other petroleum gases (i.e. methane, propane, ethane, etc.), sodium carbide, turpentine, benzene, finely divided metals
Chlorine dioxide	Ammonia, methane, phosphine, hydrogen sulfide
Copper	Acetylene, hydrogen peroxide
Cumene hydroperoxide	Acids (organic or inorganic)
Cyanides	Acids

Flammable liquids	Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens
Fluorine	Isolate from everything
Hydrazine	Hydrogen peroxide, nitric acid, any other oxidant
Hydrocarbons (benzene, butane, propane, gasoline, turpentine)	Fluorine, chlorine, bromine, chromic acid, peroxides
Hydrocyanic acid	Nitric acid, alkalis
Hydrofluoric acid (anhydrous), hydrogen fluoride	Ammonia (aqueous or anhydrous)
Hydrogen peroxide	Copper, chromium, iron, most metals or their salts, any flammable liquid, combustible materials, aniline, nitromethane
Hydrogen sulfide	Fuming nitric acid, oxidizing gases
Hypochlorites	Acids, activated carbon
Iodine	Acetylene, ammonia (anhydrous or aqueous)
Mercury	Acetylene, fulminic acid (produced in nitric acid-ethanol mixtures), ammonia
Nitrates	Acids
Nitric acid (concentrated)	Acetic acid, acetone, alcohol, aniline, chromic acid, hydrocyanic acid, hydrogen sulfide, flammable liquids, flammable gases, nitratable substances
Nitrites	Acids
Nitrocellulose (wet, dry)	Phosphorus
Nitoparaffins	Inorganic bases, amines
Oxalic acid	Silver and mercury and their salts
Oxygen	Oils, grease, hydrogen, propane, other flammable liquids, flammable solids, flammable gases
Perchloric acid	Acetic acid, acetic anhydride, bismuth and its alloys, alcohol, paper, wood, grease, oils (all organics)
Peroxides, organic	Acids (organic or mineral), (also avoid friction, store cold)
Phosphorus (white)	Air, oxygen
Phosphorus pentoxide	Alcohols, strong bases, water
Potassium	Carbon tetrachloride, carbon dioxide, water
Potassium chlorate	Acids (see also chlorates)
Potassium perchlorate	Acids (see also perchloric acid)
Potassium permanganate	Glycerol, ethylene glycol, benzaldehyde, sulfuric acid.
Selenides	Reducing agents
Silver and silver salts	Acetylene, oxalic acid, tartaric acid, fulminic acid (produced in nitric acid-ethanol mixtures), ammonium compounds
Sodium	Carbon dioxide, carbon tetrachloride and other chlorinated hydrocarbons
Sodium chlorate	Sulfur in bulk
Sodium nitrite	Ammonium nitrite and other ammonium salts
Sodium peroxide	Any oxidizable substance, such as ethanol, methanol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulfide, glycerol, ethylene glycol, ethyl acetate, methyl acetate, furfural
Sulfides	Acids
Sulfuric acid	Chlorates, perchlorates, permanganates
Tellurides	Reducing agents

For additional information, ask your faculty advisor and look on the

Material Safety Data Sheets for the chemical.