



# Environmental Safety Division

## UNIVERSITY OF GEORGIA

### Compatibility Guide

The Chemical Lab Safety team recommends against organizing chemicals in alphabetical order due to possible incompatibles. Below is a list of common chemicals and their respective incompatible chemicals. Please make sure to separate any waste containing these from one another with a physical barrier in order to prevent potential reactions. The ESD Hazardous Materials team provides secondary containers to assist with this process.

CHEMICAL	INCOMPATIBLE CHEMICAL(S)
<b>Acetic acid</b>	aldehyde, bases, carbonates, hydroxides, metals, oxidizers, peroxides, phosphates, xylene
<b>Acetylene</b>	halogens (chlorine, fluorine, etc.), mercury, potassium, oxidizers, silver
<b>Acetone</b>	acids, amines, oxidizers, plastics
<b>Alkali and alkaline metals</b>	acids, chromium, ethylene, halogens, hydrogen, mercury, earth nitrogen, oxidizers, plastics, sodium chloride, sulfur
<b>Ammonia</b>	acids, aldehydes, amides, halogens, heavy metals, oxidizers, plastics, sulfur
<b>Ammonium nitrate</b>	acids, alkalis, chloride salts, combustible materials, metals, organic materials, phosphorous, reducing agents, urea
<b>Aniline</b>	acids, aluminum, dibenzoyl peroxide, oxidizers, plastics
<b>Azides</b>	acids, heavy metals, oxidizers
<b>Bromine</b>	acetaldehyde, alcohols, alkalis, amines, combustible materials, ethylene, fluorine, hydrogen, ketones (acetone, carbonyls, etc.), metals, sulfur
<b>Calcium oxide</b>	acids, ethanol, fluorine, organic materials
<b>Carbon (activated)</b>	alkali metals, calcium hypochlorite, halogens, oxidizers



<b>Carbon tetrachloride</b>	benzoyl peroxide, ethylene, fluorine, metals, oxygen, plastics, silanes
<b>Chlorates</b>	powdered metals, sulfur, finely divided organic or combustible materials
<b>Chromic acid</b>	acetone, alcohols, alkalis, ammonia, bases
<b>Chromium trioxide</b>	benzene, combustible materials, hydrocarbons, metals, organic materials, phosphorous, plastics
<b>Chlorine</b>	alcohol's, ammonia, benzene, combustible materials, flammable compounds (hydrazine), hydrocarbons (acetylene, ethylene, etc.), hydrogen peroxide, iodine, metals, nitrogen, oxygen, sodium hydroxide
<b>Chlorine dioxide</b>	hydrogen, mercury, organic materials, phosphorous, potassium hydroxide, sulfur
<b>Copper</b>	calcium, hydrocarbons, oxidizers
<b>Cyanides</b>	acids, alkaloids, aluminum, iodine, oxidizers, strong bases
<b>Hydroperoxide</b>	reducing agents
<b>Flammable liquids</b>	ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens
<b>Fluorine</b>	alcohols, aldehydes, ammonia, combustible materials, halocarbons, halogens, hydrocarbons, ketones, metals, organic acids
<b>Hydrocarbons (Such as butane, propane benzene, turpentine, etc.)</b>	acids, bases, oxidizers, plastics
<b>Hydrofluoric acid</b>	metals, organic materials, plastics, silica (glass), (anhydrous) sodium
<b>Hydrogen peroxide</b>	acetylaldehyde, acetic acid, acetone, alcohol's carboxylic acid, combustible materials, metals, nitric acid, organic compounds, phosphorous, sulfuric acid, sodium, aniline



<b>Hydrogen sulfide</b>	acetaldehyde, metals, oxidizers, sodium
<b>Hypochlorites</b>	acids, activated carbon
<b>Iodine</b>	acetaldehyde, acetylene, ammonia, metals, sodium
<b>Mercury</b>	acetylene, aluminum, amines, ammonia, calcium, fulminic acid, lithium, oxidizers, sodium
<b>Nitrates</b>	acids, nitrites, metals, sulfur, sulfuric acid
<b>Nitric acid</b>	acetic acid, acetonitrile, alcohol's, amines, (concentrated) ammonia, aniline, bases, benzene, cumene, formic acid, ketones, metals, organic materials, plastics, sodium, toluene
<b>Oxalic acid</b>	oxidizers, silver, sodium chlorite
<b>Oxygen</b>	acetaldehyde, secondary alcohol's, alkalis and alkalines, ammonia, carbon monoxide, combustible materials, ethers, flammable materials, hydrocarbons, metals, phosphorous, polymers
<b>Perchloric acid</b>	acetic acid, alcohols, aniline, combustible materials, dehydrating agents, ethyl benzene, hydriotic acid, hydrochloric acid, iodides, ketones, organic material, oxidizers, pyridine
<b>Peroxides</b>	acids (organic or mineral)
<b>Phosphorus (white)</b>	oxygen (pure and in air), alkalis
<b>Potassium</b>	acetylene, acids, alcohols, halogens, hydrazine, mercury, oxidizers, selenium, sulfur
<b>Potassium chlorate</b>	acids, ammonia, combustible materials, fluorine, hydrocarbons, metals, organic materials, sugars
<b>Potassium perchlorate (also see chlorates)</b>	alcohols, combustible materials, fluorine, hydrazine, metals, organic matter, reducing agents, sulfuric acid
<b>Potassium permanganate</b>	benzaldehyde, ethylene glycol, glycerol, sulfuric acid
<b>Silver</b>	acetylene, ammonia, oxidizers, ozonides, peroxyformic acid



<b>Sodium</b>	acids, hydrazine, metals, oxidizers, water
<b>Sodium nitrate</b>	acetic anhydride, acids, metals, organic matter, peroxyformic acid, reducing agents
<b>Sodium peroxide</b>	acetic acid, benzene, hydrogen sulfide metals, oxidizers, peroxyformic acid, phosphorous, reducers, sugars, water
<b>Sulfides</b>	acids
<b>Sulfuric acid</b>	potassium chlorates, potassium perchlorate, potassium permanganate