

This Information Sheet provides guidance on chemical compatibility to assist in the safe storage and mixing of common laboratory chemicals. It should be read in conjunction with other supporting Information Sheets eg 'Identifying Chemical Hazards'.

The improper storage or mixing of chemicals can result in serious accidents. Violent reactions can occur between incompatible chemicals, leading to injury, fire, explosion, property and environmental damage and even death.

The following is a list of common laboratory chemicals that should guide you to ensure you only mix / store compatible chemicals together.

REMEMBER this list only includes common chemicals found at the University. You must also **ALWAYS** refer to the COSHH Assessment and supporting Material Safety Data Sheet information before storing or mixing chemicals. *Information Sheet 3 – Safe Storage of Chemicals* also provides useful information.

| CHEMICAL | INCOMPATIBLE WITH |
|------------------------------------|---|
| Acetic Acid | Chromic Acid, Nitric Acid, Hydroxyl Compounds, Ethylene Glycol, Perchloric Acid, Peroxides, Permanganates, Sulphuric Acid |
| Acetylene | Chlorine, Bromine, Copper, Fluorine, Silver, Mercury |
| Acetone | Concentrated Nitric Acid, Sulphuric Acid and Sulphuric Acid Mixtures |
| Alkali and Alkaline Earth Metals | Water, Carbon Tetrachloride, Chlorinated Hydrocarbons, Carbon Dioxide, Halogens |
| Ammonia (Anhydrous) | Mercury, Chlorine, Calcium Hypochlorite, Iodine, Bromine, Hydrofluoric Acid (Anhydrous) |
| Ammonium Nitrate | Acids, Powdered Metals, Flammable Liquids, Chlorates, Nitrates, Sulphur, finely divided Organic or Combustible Materials |
| Aniline | Nitric Acid, Hydrogen Peroxide |
| Arsenical Materials | Any reducing Agent |
| Azides | Acids |
| Bromine | See Chlorine |
| Calcium Oxide | Water |
| Carbon (Activated) | Calcium Hypochlorite, Oxidising Agents |
| Chlorates | Ammonium Salts, Acids, Powdered Metals, Sulphur, finely divided Organic or Combustible Materials |
| Chromic Acid and Chromium Trioxide | Acetic Acid, Naphthalene, Camphor, Glycerol, Alcohol, Flammable Liquids |
| Chlorine | Ammonia, Acetylene, Butadiene, Butane, Methane, Propane (other Petroleum Gases), Hydrogen, Sodium Carbide, Benzene, finely divided Metals, Turpentine |
| Chlorine Dioxide | Ammonia, Methane, Phosphine, Hydrogen Sulphide |
| Copper | Acetylene, Hydrogen Peroxide |
| Cumene Hydroperoxide | Acids, Organic and Inorganic) |
| Cyanides | Acids |

| CHEMICAL | INCOMPATIBLE WITH |
|---|--|
| Flammable Liquids | Ammonium Nitrate, Chromic Acid, Hydrogen Peroxide, Nitric Acid, Sodium Peroxide, Halogens |
| Fluorine | All other chemicals |
| Hydrocarbons (such as Butane, Propane, Benzene) | Fluorine, Chlorine, Bromine, Chromic Acid, Sodium Peroxide |
| Hydrocyanic Acid | Nitric Acid, Alkali |
| Hydrofluoric Acid (Anhydrous) | Ammonia (Aqueous or Anhydrous) |
| Hydrogen Sulphide | Fuming Nitric Acid, Oxidising Gases |
| Hypochlorites | Acids, Activated Carbons |
| Iodine | Acetylene, Ammonia (Aqueous or Anhydrous), Hydrogen |
| Mercury | Acetylene, Fulminic Acid, Ammonia |
| Nitrates | Acids |
| Nitric Acid (Concentrated) | Acetic Acid, Aniline, Chromic Acid, Hydrocyanic Acid, Hydrogen Sulphide, Flammable Liquids and Gases, Copper, Brass, Heavy Metals |
| Nitrates | Acids |
| Nitroparaffins | Inorganic Bases, Amines |
| Oxalic Acid | Silver, Mercury |
| Oxygen | Oils, Greases, Hydrogen, Flammable Liquids, Solids, Gases |
| Perchloric Acid | Acetic Acid, Anhydride, Bismuth and its alloys, Alcohols, Paper, Wood, Grease, Oils |
| Peroxides, Organic | Acids (Organic or Mineral) |
| Phosphorous (White) | Air, Oxygen, Alkalies, Reducing Agents |
| Potassium Chlorate | Sulphuric and other Acids |
| Potassium Perchlorate (also see Chlorates) | Sulphuric and other Acids |
| Potassium Permanganate | Glycerol, Ethylene Glycol, Benzaldehyde, Sulphuric Acid |
| Selenides | Reducing Agents |
| Silver | Acetylene, Oxalic Acid, Tartaric Acid, Ammonium Compounds, Fulminic Acid |
| Sodium | Carbon Tetrachloride, Carbon Dioxide, Water |
| Sodium Nitrite | Ammonium Nitrate, Ammonium Salts |
| Sodium Peroxide | Ethyl, Methyl Alcohol, Glacial Acetic Acid, Acetic Anhydride, Benzaldehyde, Carbon Disulfide, Glycerin, Ethylene Glycol, Ethyl Acetate, Methyl Acetate, Furfural |
| Sulphides | Acids |
| Sulphuric Acid | Potassium Chlorate, Potassium Perchlorate, Potassium Permanganate (similar compounds of Light Metal eg Sodium, Lithium), Acetic Acid, Acetone |
| Tellurides | Reducing Agents |