Chemical Storage – Segregation Groups

FLAMMABLE

Segregate Further by:

Peroxide Formers

Water Reactives

Air Reactives

CORROSIVE

Segregate Further by:

Organic Acids

Acetic, Benzoic, Butanoic, Citric, Formic, Oxalic

Inorganic Acids

Hydrochloric, Phosphoric

Oxidizing Acids

Chloric, Chromic, Sulfuric, Perchloric

Nitric Acid

(Isolate)

Bases

Hydroxides

Highly TOXIC

Acute Toxins

- Lethal by Inhalation
- Lethal by Dermal contact
- Highly Toxic

Carcinogens

- OSHA 13 regulated
- Known or reasonably anticipated
- Causes tumors

Reproductive Toxins

(Also known as)

Particularly Hazardous Substances

OXIDIZER

- Bromine
- Bromates
- Chlorates
- Chromates
- Nitrates
- Nitrites
- Perborates
- Perchlorates
- Permanganates
- Peroxides
- Persulphates

Hydrogen Peroxide

Potassium Permanganate

Segregate from:
Flammables *and*
Combustibles

OTHER

Segregate Further by:

General Storage

Chemical Families / Functional Groups

Refer to the Chemical Segregation & Incompatibilities Guidelines, and Safety Data Sheets for specific incompatibilities.

Organize Chemicals by Hazard

- Establish storage space and separate chemicals according to their hazard. The following categories of chemicals and color-coding are strongly recommended as a starting point for determining storage. In all cases, classification is done based upon the potential interaction of the chemical.
- **Separate Solids from Liquids** - to minimize the involvement of chemicals in the event of a liquid spill
- **Remember the "Big Five" common hazards -**

1. **FLAMMABLES – Red** - Store in a corrosion-proof area, and separate the following:
   - Air Reactive flammables
   - Water incompatible flammables (sodium, potassium, lithium metals)
2. **CORROSIVES – White** - Separate the following:
   - **Acids** –
     - Inorganic Acids
     - Organic Acids
     - Oxidizing Acids (Sulfuric, Perchloric, Chloric, etc.)
     - Nitric Acid (Isolate)
   - **Bases**
3. **OXIDIZERS – Yellow** - Store away from flammables and combustibles
4. **TOXICS / POISONS – Blue** - Secure in poisons area
5. **OTHER CATEGORIES – Gray** - **and** general storage area.

- Designate a cabinet, shelf, or area (with secondary containment) for each color according to the guidelines above.
- Place color-coded chemicals by hazard in the area that matches their color. You can alphabetize chemicals within each hazard.
- **Classify chemicals by organic or inorganic, within hazard color codes.** This can provide an extra level of safety with materials that could interact, especially where large amounts of organic and inorganic chemicals are present.
- **Some items need separate storage:** Nitric acid should be stored in an isolated compartment within an acid storage cabinet.

  Sodium and potassium metals are supplied under oil in a bottle that is in turn enclosed in a sealable can. The can provides isolation for the chemical.

One Page Segregation Compiled from the University of Illinois, Fisher Scientific, and Ward's Science segregation groups, and NFPA diamond.