


CHEMICAL STORAGE AND SEGREGATION


This document provides guidance for chemical storage and must be used in conjunction with specific storage conditions from the Safety Data Sheet

Flammable cabinets Flammable approved refrigerators



PYROPHORICS & WATER REACTIVES

Ex: diethyl zinc, sodium, lithium hydride



FLAMMABLES

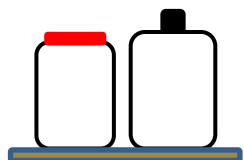
Ex: acetone, methanol, diethyl ether



Domestics fridges are not suited for flammables

General Storage

On benches, shelves, and in cabinets



Ex: Agar, common salts, buffer solutions

Common Incompatibles

Incompatible: Flammables and Oxidizers

Incompatible: Acids and Bases


Incompatible: Inorganic acids and Organic acids

Incompatible: Water reactives and Aqueous solutions/alcohols

General Process

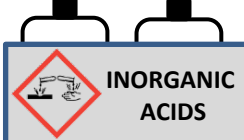
1. Isolate highly reactive (i.e. pyrophorics, water reactives, and potentially explosive compounds), strong oxidizers and highly toxic or carcinogenic compounds.
2. Prioritize flammable cabinet and flammable approved refrigerator/freezer space (required for >10 gallons of flammables), for storing flammable liquids.
3. Within the flammable cabinet or flammable approved refrigerator/freezer use secondary containers to store pyrophorics and to group different hazard classes (i.e. peroxide forming compounds, carcinogens, toxic compounds)
4. Prioritize corrosive cabinets to store acids and bases. Be sure to segregate inorganic acids from organic acids and all acids from bases with the use of compatible secondary containers. Isolate corrosives with additional hazards such as oxidizers, high degree of acute toxicity, and carcinogens.
5. If no corrosive cabinets are available store corrosives in secondary containment but as low as possible avoiding ground storage or underneath sinks. Maintain proper segregation of acids and bases.
6. The remaining chemicals should be stored where appropriate maintaining segregation of incompatibles.

Corrosive Cabinet




BASES

Ex: sodium hydroxide, Tetramethylammonium hydroxide, ammonia



INORGANIC ACIDS

Ex: hydrochloric acid, sulfuric acid, perchloric acid




ORGANIC ACIDS

Ex: Acetic acid, formic acid, *p*-toluenesulfonic acid



Nitric acid is also an OXIDIZER and must be stored separately from other acids and organics chemicals

Separate from other hazards




Potential EXPLOSIVES

Ex: picric acid, organic azides, sodium amide



HIGHLY TOXIC or CARCINOGEN

Ex: osmium tetroxide, cyanides, benzene, formaldehyde



OXIDIZERS

Ex: nitrates, perchlorates, permanganates

- ✓ **DO** use secondary containers to contain potential spills and segregate chemicals if lab space is limited
- ✓ **DO** date chemicals upon opening (required for peroxide forming chemicals)
- ✓ **DO** label all storage areas
- ✓ **DO** limit the amount of hazardous chemicals you purchase and store in your lab
- ✓ **DO** store volatile toxic and odoriferous chemicals in ventilated cabinets

- * **Do not** store chemicals just by alphabetical order
- * **Do not** store any chemicals under the sink
- * **Do not** store hazardous liquids above eye level
- * **Do not** store chemicals on the floor and do not stack chemicals



THE UNIVERSITY OF
CHICAGO

Office of
Research Safety

P: 773-834-2707
researchsafety@uchicago.edu
<http://researchsafety.uchicago.edu>

