



A BRIEF GUIDE ON SAFE STORAGE OF HAZARDOUS CHEMICALS AND WASTE

The extensive hazards associated with laboratory chemicals and gases necessitate precise organization and storage to ensure a safe workspace. Such practices are fundamental aspects of environmental, health, and safety programs throughout academic and industrial settings. This edition serves as a brief guide on proper storage and separation of chemicals and waste.

- 1 Chemical Inventory.** Safe storage practice entails maintaining an accurate inventory of hazardous chemicals. Inventories serve to inform laboratory personnel about potential risks in their workspace. Each hazardous substance listed in the inventory must include the following details: CAS number, chemical name, physical state, quantity, amount, and the location within the laboratory. Moreover, it's imperative to ensure that Safety Data Sheets for these chemicals are easily accessible to all laboratory personnel.
- 2 Label your chemicals.** It is important that all hazardous chemicals are distinctly labelled to provide crucial information for future users and emergency responders. Disposing of unknown chemicals can be costly, so it is essential to ensure that all labels are easily readable and well-preserved. Any labels that are damaged or missing should be promptly repaired or replaced. For hazardous chemicals stored outside of their original manufacturer's containers, it is essential to label new containers and ensure compatibility.
- 3 Chemical storage.** Chemicals must be stored by compatibility. Materials must be separated and organized based on their chemical family or hazard classification. Furthermore, incompatible chemicals must never be stored near each other, as they could potentially combine and trigger violent reactions or release toxic gases in the event of an earthquake, fire, or spill. Below, you will find tables and links for downloading chemical storage guidelines, as well as a "quick guide" for arranging chemicals according to their compatibility.

Chemical storage guide

Flammable liquids Do not store with acids or oxidizers Only store in refrigerators rated for flammables Keep quantities to a minimum (no 5 gallon cans permitted) Amounts over two(2) gallons: Store in an approved flammable cabinet	Acids Do not store with bases, flammables, or cyanides Do not store under the sink	Bases Do not store with acids May be kept with flammable liquids if in secondary containment	Oxidizers Do not store with flammable liquids or solids Do not store under the sink Avoid storage on wooden shelves	Toxics Store on sturdy shelves below eye level or in secured cabinets Store separate from other hazard classes
Examples Acetone Methanol Ether Hexane	Examples Sulfuric acid Hydrochloric acid Nitric acid Acetic acid	Examples Sodium hydroxide Potassium hydroxide Bleach	Examples Silver nitrate Ammonium persulfate Sodium periodate	Examples Sodium cyanide Sodium azide Aniline Ethidium bromide
Special circumstances Combustible liquids (i.e. toluene) can be stored in the flammable cabinet if there is room.	Special circumstances Some acids are flammable (i.e. Acetic acid) but still store them with the acids.	Special circumstances Some bases are flammable (i.e. ethanol amine) but still store them with the bases.	Special circumstances Some acids are oxidizers (i.e. nitric acid) but still store them with the acids.	Special circumstances Some acids are oxidizers (i.e. nitric acid) but still store them with the acids.

Quick guide for chemical storage by compatibility

Chemical Hazard <small>Always refer to the SDS</small>	Flammable	Acid	Base	Oxidizer	Toxic
Flammable					
Acid					
Base					
Oxidizer					
Toxic					

Information on this article is adapted from: [UH EHS](#) - [UC Berkeley EHS](#) - [UVA EHS](#). Please refer to their web for more detailed information.

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