

Storage Begins with Purchasing

- purchase minimum needed for experiment
 - do not “buy in bulk” to lower per unit costs (unless the “bulk” quantity is needed)
- initial & date chemical labels upon receipt
 - inform Hyomin to update inventory
 - print out MSDS for binder, place PDF of MSDS on server
 - for peroxide formers (e.g., THF, IPA) also date upon opening
 - chemicals must be disposed of before they reach certain age
 - THF: recommended disposal after 6 months
 - can buy strips to test peroxide levels of containers in use
 - crystals or viscous liquid are typical signs of peroxides
 - <http://www.ehs.washington.edu/forms/epo/peroxideguidelines.pdf>

Chemical Storage Basics

- https://web.mit.edu/environment/pdf/sop/sop_0023.pdf
- <http://www.lbl.gov/ehs/chsp/html/storage.shtml>
- store in groups based on compatibility
 - if possible, separate cabinets for separate groups
 - at minimum, secondary containment/ segregation for each group
 - examples on next slide
- do not store liquids above eye level
- do not store chemicals in fume hoods
- flammable storage refrigerator needed for flammable chemicals
- only store chemicals in intact containers
 - unsuitable container example: rusted metal cylinder

Chemical Compatibility Examples

- base storage
 - separate from acids
 - can be stored with flammables
 - secondary containment required
 - provided no volatile poisons (e.g., methylene chloride, chloroform) are present
 - acetone incompatible with strong bases
- separate oxidizing and organic acids
 - organic acids: acetic, formic, hydrochloric, phosphoric, propionic, butyric, glacial acetic, isobutyric, mercaptopropionic, trifluoroacetic
 - acetic acid should be stored as flammable liquid
 - oxidizing acids require secondary containment around original bottle
 - nitric, sulfuric, perchloric, chromic
- hydrogen peroxide must be stored by itself
 - not on wood shelf, or shelf lined with paper
 - spills may ignite