

# Safety Bugle



## Today's Topic: Chemical Storage

### Storage of chemicals in labs or stockrooms

The storage requirements and limitations for stockrooms and laboratories vary widely depending on:

- Level of expertise of the employees.
- Level of safety features designed into the facility.
- Level of security designed into the facility.
- Location of the facility and neighboring homes or buildings.
- Nature of the chemical operations.
- Accessibility of the stockroom.
- Local and state regulations.
- Insurance requirements.
- Building and fire codes of the location.

### Basic storage guidelines

Store materials and equipment in approved cabinets and shelving designated for the specific material. Additional guidelines include:

- Avoid storing on top of cabinets & maintain a clearance of 18" from sprinkler heads.
- Do not store on shelves higher than 5' to reduce accidents caused by overreaching. If too high, use a step stool.
- Keep exits, passageways and emergency equipment areas free of stored materials to allow for ease of egress.

### General guidelines for storing chemicals

- Label all chemical containers appropriately.
- Separate chemicals into compatible groups as this will reduce the risk of mixing in case of breakage, fire or response in an emergency.
- Maintain segregation of incompatible chemicals & return chemicals to their appropriate location after each use.
- Avoid storing chemicals on bench tops and chemical hoods unless currently in use.
- Volatile toxic chemicals should be stored in a ventilated cabinet.
- Flammable liquids are stored in approved vented flammable cabinets.
- Use corrosion resistant secondary containment trays for accidental breakage, spills and leaks.

### Cold storage guidelines

- Use for chemicals only, such as thermally unstable materials. No food in the same storage area!
- No flammable liquids in refrigerators.
- Compatibility rules apply here as well.
- Label all materials with contents, owner, date of prep, nature of any hazard.
- Review entire contents regularly and dispose of all unlabeled, unknown or unwanted materials.
- When a lab employee leaves, identify and dispose of all materials or reassign.

### Store according to compatibility

**STORAGE GROUPS**  
Store chemicals in separate secondary containment and cabinets

**A** Compatible Organic Bases  
**B** Corrosive Peroxides & Water Reactive Materials  
**C** Compatible Inorganic Acids  
**D** Compatible Organic Acids  
**E** Compatible Oxidizers (including Peroxides)  
**F** Compatible Inorganic Acids (not including Oxidizers or Corrosives)  
**G** Non-toxically Reactive or Flammable Corrosives  
**J\*** Inert Compressed Gases  
**K\*** Corrosive Liquids (not other highly flammable liquids)  
**L** Non-Reactive Flammable and Compressed Gases (including Acetylene)  
**X†** Incompatible with all other storage groups

\*Storage Groups J, K and X: Consult EHS Department For specific storage - consult manufacturer's MSDS

†Specialists not allow Storage Groups to be kept in separate cabinets the following criteria can be used with extra care taken to provide stable, unneeded, and carefully monitored conditions

Storage Group X must be segregated from all other chemicals.

Storage Group B can be compatible with a specific storage group.

### Storing gas cylinders

- Cylinders should be properly labeled with their contents.
- Securely strap to a wall or bench top in an upright position.
- Keep flammable gases away from reactive materials as oxidizers and corrosives.
- Segregate empty cylinders from full ones and return empty cylinders to the supplier.

### Other things to consider relating to storage

- Purchase and store solvents / chemicals are not to exceed the anticipated usage.
- Save money and avoid future performance surprises by ordering industrial grade where it makes sense in process development.