Safe chemical handling requires routine inspections of chemical storage areas and maintenance of stringent inventory control. The inherent hazards of chemicals can be reduced by minimizing the quantity of chemicals on hand. However, when chemicals must be used, proper storage and handling can reduce or eliminate associated risks. All chemical storage areas and cabinets should be inspected at least annually and any unwanted or expired chemicals should be removed.

Typical storage considerations may include temperature, ignition control, ventilation, segregation and identification. Proper segregation is necessary to prevent incompatible materials from inadvertently coming into contact. A physical barrier and/or distance is effective for proper segregation.

Proper storage information can usually be obtained from the Safety Data Sheet (SDS), label, or other chemical reference material. As required by 29 CFR 1910.1200, an SDS must be on hand for every hazardous chemical in your workplace. SDSs must be provided by the manufacturer or distributor of chemicals purchased.

Keys for safe chemical storage:

- Label hazardous chemicals with the identity of the hazardous chemical(s) and appropriate hazard warnings.
- Segregate all incompatible chemicals for proper storage of chemicals by hazard class.
- Chemicals should not be stored alphabetically unless compatible.
- Flammables should be stored in a flammable materials storage cabinet or storage room if the volume exceeds ten gallons.
- Keep cabinet doors closed when not in use.
- Corrosive chemicals should be stored below eye level.
- Avoid storing chemicals on the floor.
- Store acids in a dedicated acid cabinet. Nitric acid should be isolated from other acids.
- Store highly toxic or controlled materials in a locked, dedicated poison cabinet.
- Volatile or highly odorous chemicals should be stored in a ventilated cabinet.
- Chemical fume hoods shall not be used for storage.
- Chemicals should be dated upon receipt. This is especially important for peroxide-forming chemicals such as ethers, dioxane, isopropanol, and tetrahydrofuran. Solutions should be labeled and dated when prepared.
- First aid supplies, emergency phone numbers, eyewash and emergency shower equipment, fire extinguishers, spill cleanup supplies and personal protective equipment should be readily available and personnel trained in their use.
- Chemicals stored in explosion-proof refrigerators or cold rooms shall be sealed and labeled with the name of the person who stored the material in addition to all other required hazard warnings.
- Only compressed gas cylinders that are in use shall be kept in the laboratory. All others shall be kept in a compressed gas cylinder storage area.
- Keep all chemicals away from heat and direct sunlight.