

## Chemistry Storage Room Safety

If your chemistry storage room has not been evaluated recently as to contents and storage practices, you should plan to include this in your hazard identification activities. Chemistry storage rooms contain flammable liquids, acids, compressed gas cylinder storage, and poisons. And, some chemicals, if stored together, present the potential for a hazardous reaction resulting in fire and the discharge of toxic vapors.

Some chemicals such as benzoyl peroxide, carbon disulfide, diisopropyl ether, ethyl ether, picric acid, perchloric acid, and potassium metal are explosive and are not recommended for use or storage in schools.

Benzene and other known and probable carcinogens are not recommended for use or storage in schools unless absolute need is determined and all proper handling and storage procedures are followed.

The chair of the Chemistry Department or a chemistry teacher should be enlisted to assist in the evaluation of chemical storage practices.

If not currently being done, a physical inventory should be completed as soon as possible, and thereafter on an annual basis. The physical inventory will help ensure that chemicals are properly labeled and stored.

When completing the chemical inventory, the type, quantity, and container size of chemicals being stored should be evaluated. All unneeded and excessive amounts of chemicals should be properly disposed of.

To reduce the potential for a reaction between incompatible chemicals, chemicals in storage should first be separated into their organic and inorganic families and then further divided into related and compatible families.

Acids should be stored in an approved acid storage cabinet, with a separate compartment provided for the storage of Nitric Acid. Flammables should be stored in an approved flammable liquids storage cabinet. Any poisons should be stored in a secured dedicated poisons cabinet.

The benefits of a formal inventory of chemicals will help ensure that:

- only compatible chemicals are stored together;
- flammables are stored in specialized cabinets;
- acids are stored in specialized cabinets;
- poisons are secured;
- eliminates a build-up of old, and excessive amounts of chemicals; and

- maintains a record of all chemicals in storage.

Students should not be permitted in chemical storage rooms. And, except when occupied by the chemistry teacher or a qualified staff member, access to chemical storage rooms should be kept secured.

An excellent resource on the proper storage and handling of chemicals is the Flinn Scientific Chemical & Biological Catalog Reference Manual. Most chemistry teachers have a copy of this catalog and reference manual.

An additional resource is the School Chemistry Laboratory Safety Guide, which was developed in conjunction with the U. S. Consumer Product Safety Commission, Centers for Disease Control and Prevention (CDC), and the National Institute for Occupational Safety and Health (NIOSH). This guide can be reviewed and printed at the following link: <http://www.cpsc.gov/CPSCPUB/PUBS/NIOSH2007107.pdf>

**John L. Stains**

Director of Loss Control Services  
School Claims Service, LLC  
P.O. Box 811  
New Cumberland, PA 17070-0811  
866-401-6600, ext. 115

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