

Lesson Learned Briefing

No.: LL16-0017

Title: Incompatible Chemical Storage

Event: LBNL Event

Event Date:

Category: ES&H - Chemical Hygiene, Gases, Chemical Inventory

Lesson Learned Statement:

During recent laboratory safety inspections, several issues regarding chemical storage were observed including incompatible chemicals being stored together. Incompatible chemical storage can lead to hazardous results.

Discussion:

Segregation of incompatible chemicals usually means chemicals are kept in separate approved cabinets, lockers, bins, etc. For incompatible compressed gas cylinders, segregation by distance is allowed (e.g., hydrogen and oxygen are kept 20 feet apart). A pdf of this lessons learned and some helpful chemical compatibility charts are available when you click the link below for the complete briefing. The attachment can be found at the end of the briefing.

Key points for safe chemical storage include:

- Segregate flammable and combustible liquids from oxidizing acids and oxidizers.
- Segregate acids from bases.
- Acetic acid is a combustible liquid; store it in a flammable cabinet (not with other acids).
- Segregate acids from reactive metals such as sodium, potassium, and magnesium.
- Segregate oxidizing acids from organic acids and flammable and combustible materials.
- Segregate acids from chemicals that could generate toxic or flammable gases upon contact, such as sodium cyanide, iron sulfide, and calcium carbide.
- Do not store flammable gases (e.g., propane) in flammable storage cabinets with flammable liquids
- Remember to always store hazardous liquids in secondary

containment trays.

The Chemical Hygiene and Safety Plan (CHSP), Work Process K "Chemical Storage", provides details on proper storage of chemicals, including help to ensure chemicals are compatible with each other when stored together. The attached chemical incompatibility charts/tables provide additional guidance for segregating incompatible chemicals. Material Safety Data Sheets (MSDSs), which are now called Safety Data Sheets or SDSs, are also useful resources. The CHSP and MSDSs may be accessed from the Lab's A-Z index.

If you have any questions regarding proper chemical storage contact your Division Safety Coordinator or Health and Safety Representative who provides service to your division.

Lessons Learned are part of the ISM Core Function 5, Feedback and Improvement. Applicable Lessons Learned are to be considered during working planning activities and incorporated in work processes, prior to performing work.

Please contact the following subject matter experts if you have any questions regarding this briefing.

- Ettinger, Kurt R (KREttinger@lbl.gov)
- Toor, Herb S (HSToor@lbl.gov)
- McLouth, Lawrence D (LDMcLouth@lbl.gov)
- Zhu, Li (LiZhu@lbl.gov)

Uploaded documents/attachments:

[LL Chem Storage Final 2016-0316.pdf](#)

[Give feedback for this briefing](#)

For other lessons learned and best practices, go to [Lessons Learned and Best Practices Library](#).