Lesson Learned Briefing

No.: LL12-0005

Title: Chemcial Storage

Event: LBNL Event

Event Date: 10/18/2011

Category: ES&H - Chemical Hygiene

Lesson Learned Statement:
During recent laboratory safety inspections, several issues regarding improper chemical storage were observed. These include poor chemical segregation, using defective flammable storage lockers, storing chemicals under sinks and lack of secondary containment for liquid chemicals.

Discussion:
Proper chemical storage includes separating incompatible chemicals from one another, using approved storage cabinets and using secondary containment and drip trays to control leaks and spills. These precautions are required to protect personnel, equipment and facilities. The Chemical Hygiene and Safety Plan (CHSP) section entitled "Chemical Storage" provides details on proper storage. The CHSP can be accessed via the Lab's A-Z index.

Recommended Actions
Ensure that your chemicals are stored in accordance with the requirements provided in the CHSP Storage Section. These are summarized below. If you should have any questions regarding proper chemical storage contact the industrial hygienist who provides service to your Division.

- Chemical Segregation: Segregate incompatible chemicals (e.g., store oxidizing acids and flammable solvents in separate locations). This prevents unintended mixing of incompatible chemicals, which can produce harmful gases/vapors, heat, fire and explosions. The CHSP has chemical incompatibility charts with guidelines for segregating incompatible chemicals. Material Safety Data Sheets (MSDSs) are also useful resources. MSDSs may be accessed from the Lab's A-Z index

- Storage Cabinets: Store flammable and combustible liquids, totaling more than 10 gallons in one room or a laboratory, in an approved flammable storage

cabinets. They are constructed of steel and are equipped with self closing doors with a three point latch arrangement. Flammable storage cabinets can be located under fume hoods or exist as stand- alone units. Refrigerators may also be used, provided they are designed and built for that purpose. Keep inorganic acids in corrosive or acid storage cabinets. Their interiors and hardware (door hinges and shelf brackets) are corrosion resistant.

Do not store chemicals, other than cleaners, detergents and bleach, in cabinets under sinks. These are not designed and constructed for chemical storage. Moreover, water leaks from plumbing may potentially contact and react with chemicals.

- Secondary Containment for Liquids: It is also important to remember to keep liquid hazardous materials in drip trays. These are used to contain leaks and spills, and they come in a variety of sizes and materials. Polypropylene photo trays are commonly employed, but trays made of other materials, such as stainless steel or Pyrex, can also be used. Drip tray capacity must be 110% of the largest container or 10% of the aggregate volume of all containers, whichever is larger. Information on drip tray selection, chemical resistance and ordering is provided in the CHSP.

Priority Boxes: ☐ ORPS Reportable ☐ OSHA Recordable ☐ PAAA ☐ Other

ISM Code:

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