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Chemical Inventory Guidelines

Applies to: **(examples; Faculty,Staff, Students, etc)**

Faculty , Staff , Students

Policy Overview:

Issued: 07-01-2017

Next Review Date: 07-19-2022

Frequency of Review: Annually

In order to comply with numerous regulatory requirements, the University of Health Sciences and Pharmacy in St. Louis must compile an annual inventory identifying the location (building and room) and quantity of all hazardous materials on campus. We have implemented an on-line inventory system known as MSDS Online (now known as Velocity EHS), which will be used to aide in the fulfillment of all regulatory requirements.

This policy applies to all UHSP investigators, faculty, staff, visiting scientists, postdoctoral fellows, students, scholars, and any other person working at or for UHSP.

Details:

Purpose

One of the major regulatory elements the inventory is used to fulfill is the OSHA Hazard Communication Regulation - 1910.1200 (HazCom). The purpose of HazCom is to ensure that the hazards of chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. In addition to the OSHA regulations for hazard communication, there are other regulations and guidelines, which require an inventory system.

- Environmental Protection Agency (EPA) – Emergency Planning and Community Right-to-Know Act (EPCRA) hazardous chemical storage reporting
- Department of Homeland Security (DHS) – Chemicals of Interest (COI)
- Centers for Disease Control and Prevention (CDC) – Select agents and toxins
- Drug Enforcement Agency (DEA) and Bureau of Narcotics and Dangerous Drugs (BNDD) – Controlled Substances and List I & II regulated chemicals
- International Building Code - Flammable material and other storage limits
- Local Fire Department Requirements – Flammable material storage limits
- Veterans Administration (VA) – mandated inventory reconciliation every 6 months for VA funded researchers

Compliance

In order to achieve and maintain compliance, University of Health Sciences and Pharmacy in St. Louis has committed to inventorying chemical containers on site as described below in "Items REQUIRED to be Inventoried," except those exempted below under "Items NOT REQUIRED to be Inventoried". Initially, all labs will have to comply by manually inventorying all required material items mentioned in the "Items REQUIRED to be Inventoried" below. Thereafter, all hazardous and non-hazardous materials that are ordered through the purchasing system must be entered into the chemical inventory for each individual lab as they are received/accepted by each designated person. On an annual basis, each lab will be responsible for verifying that the items in the electronic inventory match what is currently found in the lab and other storage areas, such as common areas, refrigerators/cold rooms, and freezers. However, there are other materials which are highly regulated and may require more frequent inventory updates. These materials are items of interest to federal and local agencies, such as Department of Homeland Security, Centers for Disease Control and Prevention, Local Fire Department, etc. and are more controlled to prevent the following:

- Release: quantities of toxic, flammable, or explosive chemicals that have the potential to create significant adverse consequences for human life or health if intentionally or unintentionally released, detonated, or involved in a fire.
- Theft or Diversion: materials that have the potential, if stolen or diverted, to be abused or used as weapons, which can ultimately lead to significant adverse consequences for human life or health.
- Sabotage or Contamination: chemicals that, if mixed with other readily available materials, have the potential to create significant adverse consequences for human health or life.

Items REQURED to Be Inventoried

Any, but not limited to, chemical containers that have a manufacture's label which denotes physical or health hazards, or whose SDS denotes hazards, are to be included in the inventory. In general, laboratory chemicals and reagents are inventoried even if the hazard is considered low. Almost all chemicals received from chemical manufacturers such as Sigma-Aldrich, Fisher Scientific, Mallinckrodt Baker, Bio-Rad, Invitrogen, etc., will be included in the lab inventory. The list below provides some examples of common materials that need to be inventoried:

- DHS Chemicals of Interest* (a.k.a. Appendix A list) (Appendix A list can be found here.)
- DEA scheduled materials, to include those materials acquired from the Division of Comparative Medicine (DCM)* (http://www.justice.gov/dea/pubs/scheduling.html)
- Select agents that are classified as biological toxins* (A select agents list can be found here.)
- All flammable solvents*, to include primary & secondary chemical containers that are brought into the lab from another location (e.g.):
    - 10 gallon carboy of ethanol that is filled from a primary 55 gallon drum at the loading dock and brought into the lab
    - Materials that are transferred or inherited from another lab
- All organic solvents, including liquid scintillation counting cocktail
- Other research drugs and therapeutics
- All chemicals/reagents regardless of hazard class (in the first year of inventorying, non-hazardous reagents will be brought into the database through a lab's AIS/Marketplace purchases; in subsequent annual inventory counts, laboratory personnel will need to adjust the levels of nonhazardous chemicals/reagents to reflect the amount commonly stored in the room)
- Shock sensitive and potentially explosive mixtures produced by the lab must be inventoried (e.g. Bouin's stain made from saturated picric acid solution or serial dilution of ether mixtures). For further guidance in peroxide forming materials and shock sensitive materials see links below.
    1. Reactive or explosive materials requiring special attention
    2. Guidelines for Safe Handling and Disposal of Peroxide Forming
- Lecture cylinders, small compressed gas cylinders or small propane cylinders
- Corrosive cleaning agents (e.g. strong base/acid solutions, RNASE away, Chromerge, etc.)
- Materials used for maintenance, repair, or cleaning (e.g. bleach, mineral spirits, oils, lubricants and greases including vacuum pump fluid)
- Photographic Chemicals
- Activated charcoal Chemical kits** (Chemicals contained in a kit are usually not individually inventoried. They can be inventoried under the kit name.)
- Dyes and stains

Items NOT REQUIRED To Be Inventoried

Even though some items may not be entered into the inventory, the user is still responsible to obtain a current SDS for the product. The list below provides some examples of common materials that do not need to be inventoried:

- Any secondary chemical container that is produced in the lab from a primary chemical container(s) that is already inventoried (e.g.)
    - 1N NaOH that is made from a commercially available 10N NaOH solution or solid NaOH.
    - Squirt bottles and spray bottle
    - Conical and "Falcon" tubes with chemicals or samples in them
- Biological material (e.g.)
    - plant or animal tissue, blood or blood products
    - reproducing biological organisms, bacteria, viruses, fungi or yeast
    - Enzymes, antibodies, proteins, peptides, nucleic acids
    - Conjugated antibodies and proteins
- Tissue culture media or other growth media
- Buffer solutions for pH probes
- Non-chemical diagnostic materials that contain a film on any surface (e.g. 96-well plate)
- Chemical spill kits
- First aid kit (may include calcium gluconate as a first aid for hydrofluoric acid burns)
- Food or food additives (unless it will be used for R&D or operational purposes)
- Office Supplies (appropriate quantities for office administrative purposes)
- Non-Hazardous metals such as foils, bars, and rods
- Test strips (pH, peroxide, water hardness, iron, phosphate, etc.)

Note: Each PI or designated person(s) will be responsible for the proper hazard determination for all mixtures that are commonly made and used in the research lab. For hazard classification guidance concerning mixtures and solutions, the Hazard Communication Standard (29 CFR 1910.1200) states that a mixture (or solution) will be considered as having the same health hazards as the components that comprise $\geq 1\%$ of the mixture ($\geq 0.1\%$ for known carcinogens in the mixture). If the PI or designated person(s) is not comfortable with making hazard determinations or is unsure about the hazard classification of a particular solution, they should consult with EH&S.

Resources to guide you through entering in chemicals can be found here:

Responsibilities:

Position/Office/Department	Responsibility
PI or laboratory designated person	Properly determining hazards for all mixtures that are made and entering in ordered chemicals into the online inventory system.

Resources:

DHS Appendix A: Chemicals of Interest (COI): https://www.dhs.gov/appendix-a-chemicals-interest-list

Federal Select Agent Program. Select Agents and Toxins List: https://www.selectagents.gov/selectagentsandtoxinslist.html

MSDSonline Help Center: http://help.msdsonline.com/products/hq

Policy Contacts:

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