Department of MI&I Chemical Hygiene Plan

2021 Annual Review

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THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

Topics Covered

- Lab Accidents, Safety Resources and Lessons Learned
- General Lab Safety
- Chemical Hygiene Plan (CHP)
- Standard Operating Procedures (SOPs)
- Hazardous Chemicals
- Personal Protective Equipment (PPE)
- Safety Equipment
- Containment Devices (fume hoods, etc.)
- Waste Handling
- Emergency Procedures & Exposure Response
- Additional Training - Bloodborne Pathogens & Exposure Control Plan

Why is Lab Safety Important?

“Lab safety is **important** because it keeps people from getting severely injured. Proper **lab rules** are **important** because they keep people from getting hurt. **Lab safety** is **rules** that are used in every **lab** to keep everyone **safe**. If you do not follow the **lab safety rules** then you could get hurt.”
Chemistry Lab Safety Essay - Course Hero

“Lab safety is one of the most **important** concerns when you are working with medical supplies, hazardous chemicals, and heavy-duty equipment. Because accidents can easily occur when working in the **lab**, it is critical to pay attention to the proper care and usage of the supplies you use in the **lab**.”
Blog | Five Lab Safety Rules You Must Follow - CarePath DX

Lab Accidents and Academic Institutions

A recent CDC report ranks Educational Services as #2 in injuries resulting from incidents involving hazardous chemical substances (1,562 persons injured). Human error was the leading contributing factor of these injuries. There were 1,092 student injuries (70% of 1,562 injuries). This report documents the significant incidents happening at academic institutions and shows the high risks to students when incidents occur. (Hill Jr., Journal of Chemical Health & Safety. 2016)

Laboratory safety attitudes and practices: A comparison of academic, government, and industry researchers.(Schröder et al., 2015, J Chem Health and Safety). This publication on the comparison of academic, government, and industry researchers illustrates a better safety behavior by industry researchers. The study illuminates the positive impact that PIs in academic research laboratories have on student PPE compliance behavior. Moreover, if PIs or their designated laboratory supervisor are actively engaged in promoting research safety, a significant reduction in lab-related accident was observed

Lab Safety Resources

U.S. Chemical Safety Board (CSB)

- Video entitled "Experimenting with danger". The 24-minute video focuses on three serious laboratory accidents: the death of a lab research assistant in 2008 in a flash fire at the University of California Los Angeles (UCLA); a death by accidental poisoning of a highly regarded Dartmouth College professor in 1997; and a 2010 explosion at Texas Tech University (TTU) that severely injured a graduate student, who lost three fingers in the blast and suffered eye damage.

The University of California

- The UC Center for Laboratory Safety. This center was created to improve the practice of laboratory safety through the performance of scientific research and implementation of best safety practices in the laboratory. The Center will operate under the oversight of the UC Center for Laboratory Safety Advisory Board with technical support from the UCLA Office of Environment, Health and Safety and the UCLA School of Public Health – Department of Environmental Health Sciences.

https://www.osha.gov/SLTC/laboratories/safetyculture.html

UC Center for Laboratory Safety: ~100 Safety Videos

Accidents	Experimenting with Danger	CSB	24 min	*2011*
Animal Biosafety	Working Safety in Animal Biosafety Levels 1	ABSA	11 min	
	Working Safety in Animal Biosafety Levels 2	ABSA	20 min	
	Working Safety in Animal Biosafety Levels 3	ABSA	23 min	
Autoclave Safety	Autoclave Safety Animation	Dartmouth	9 min	*2011*
Biosafety	Responding to a Biological Spill	Northwestern University	4:44 min	*2014*
	Management of Biomedical Waste in Florida	UMI	23 min	*2012*
Biosafety Cabinet	Biological Safety Cabinets: How They Work to Protect You	Northwestern University	5 min	*2015*
	Biosafety: BSL-2 spill management in biosafety cabinet (BSC)	Basler&Hofmann	2 min	*2014*
	Working safely in a Class II cabinet	Basler&Hofmann	18 min	*2013*
	Working Safely in your Biological Safety Cabinet Video | Biosafety Cabinets	ESCO	16 min	*2011*
	Biosafety Cabinet (BSC): Virus Culturing Practices (cell & tissue cultures)	Basler&Hofmann	3 min	*2011*
	Biosafety cabinet (BSC): Demonstration of airflow using a smoke pencil	Basler&Hofmann	3 min	*2011*
Bunsen Burner Safety	How to Light a Bunsen Burner	Geneseo TLC	4 min	*2010*
Chemical Fume Hood	The Difference Between Fume Hoods and Biosafety Cabinets	Cornell University	4 min	*2014*
	Fume Hood Safety: DOs and DON'Ts	LABCONCO	7 min	*2014*
	Chemical Fume Hood: How it works to protect you	Dartmouth	8 min	*2010*

UC Center for Laboratory Safety: Lessons Learned

Biohazards

Title	Hits
Bone Marrow from Infected Mouse Splashes Into Researcher's Eye	6830
Contaminated Glass in Sink Cuts Technician's Finger	7179
Student Cuts Himself with Scalpel When Sectioning Human Tissue	7664
Researcher Sustained Laceration to Leg and Was Exposed to a Bloodborne Pathogen	7027
Bone Sliver Penetrates Researcher's Hand and Exposes Him to HIV	7080

Chemicals

Title	Hits
Student Sustains Cold Burns When Retrieving vial from Liquid Nitrogen	127
Student Sustains Cold Burns When Touching Liquid Nitrogen	10044
Caustic Solution Splashes into Eye	8458
Trizol Splashes on Researcher's Face, Chest, and Neck during RNA Extraction	12769
Unattended Experiment Causes Exposure to Nitric Acid	8134
Three Researchers Exposed to Barium Oxide During Spill Clean-Up	7313
Hydrofluoric Acid Exposure to Eyes	8160
Lysis Buffer Splashed into Researcher's Eye	7775
Cesium Chloride Splash to Eye Due to Ill-Fitting Safety Glasses	7292

UC Latest Lessons Learned: Researcher Exposed by Confusing Ethanol with Formalin

What Happened?
A researcher attempted to make a stock solution of 70% ethanol but used 10% formalin instead of 100% ethanol. The researcher filled a spray bottle and took it home to use as a disinfectant, leaving the remaining solution in the lab labeled “70% ethanol”.

The researcher used the formalin solution at home as a disinfectant for their hands and belongings due to concerns related to COVID-19.

A different researcher in the lab wiped down a biosafety cabinet, experimental equipment, and gloved hands with the “70% ethanol”-labeled formalin solution to prepare for a routine experiment. This researcher paused their experiment because of mild irritation and the odd smell of the solution and notified their PI and lab mates.

The discovery was made that the labeled stock solution was not 70% ethanol and that it instead contained formalin.

What Was The Cause?
The immediate cause was that the researcher who made the solution did not recognize the hazard. The lab’s 10% formalin container looked very similar to that of 100% ethanol, and the researcher did not read the labels before preparing the dilution. The root cause was likely a lack of knowledge about hazards in the laboratory. Furthermore, the researcher did not have an awareness of associated risks when chemicals from the laboratory are taken home.

How Can Incidents Like This Be Prevented?
•Always double-check container labels when preparing solutions. Also, look at the GHS symbol.
•Never take lab chemicals home. Do not repurpose chemicals from the lab for personal use.

UC Latest Lessons Learned: Combining Unknown Waste Caused a Freak Reaction

What Happened?

During a pre-inspection lab cleanup, a researcher noticed a hand-labeled, hard-to-read waste container without a waste tag. The researcher thought they could read the letters “AES” on the container, so they reached out to the responsible person for Atomic Emission Spectroscopy (AES) and requested they pH the solution in order to properly combine the solution with one of their waste streams.

The person responsible for AES reported a pH of 1.1, and the researcher decided to combine the waste with the acid and heavy metal chemical waste assuming it also contained heavy metals due to the “AES” on the label. After a small test pour of the solution into the acid and heavy metal waste container, a plume of smoke ejected from the container. The researcher immediately stepped to the side, closed the sash of the fume hood, and allowed the chemicals in the container to react. Smoke began to fill the fume hood until the reaction came to a stop. Although ready to call 911, the researchers did not because the reaction had finished.

The emergency response of the lab members was great: they did not try to quench or otherwise interfere with the reaction but closed the sash of the fume hood and prepared to call for help. They also reported the incident to their PI and EHS Department.

What Was The Cause?

A researcher combined **unknown** chemical waste with acidic heavy metal waste. The researcher **assumed** that they knew the nature of the waste.

How Can Incidents Like This Be Prevented?

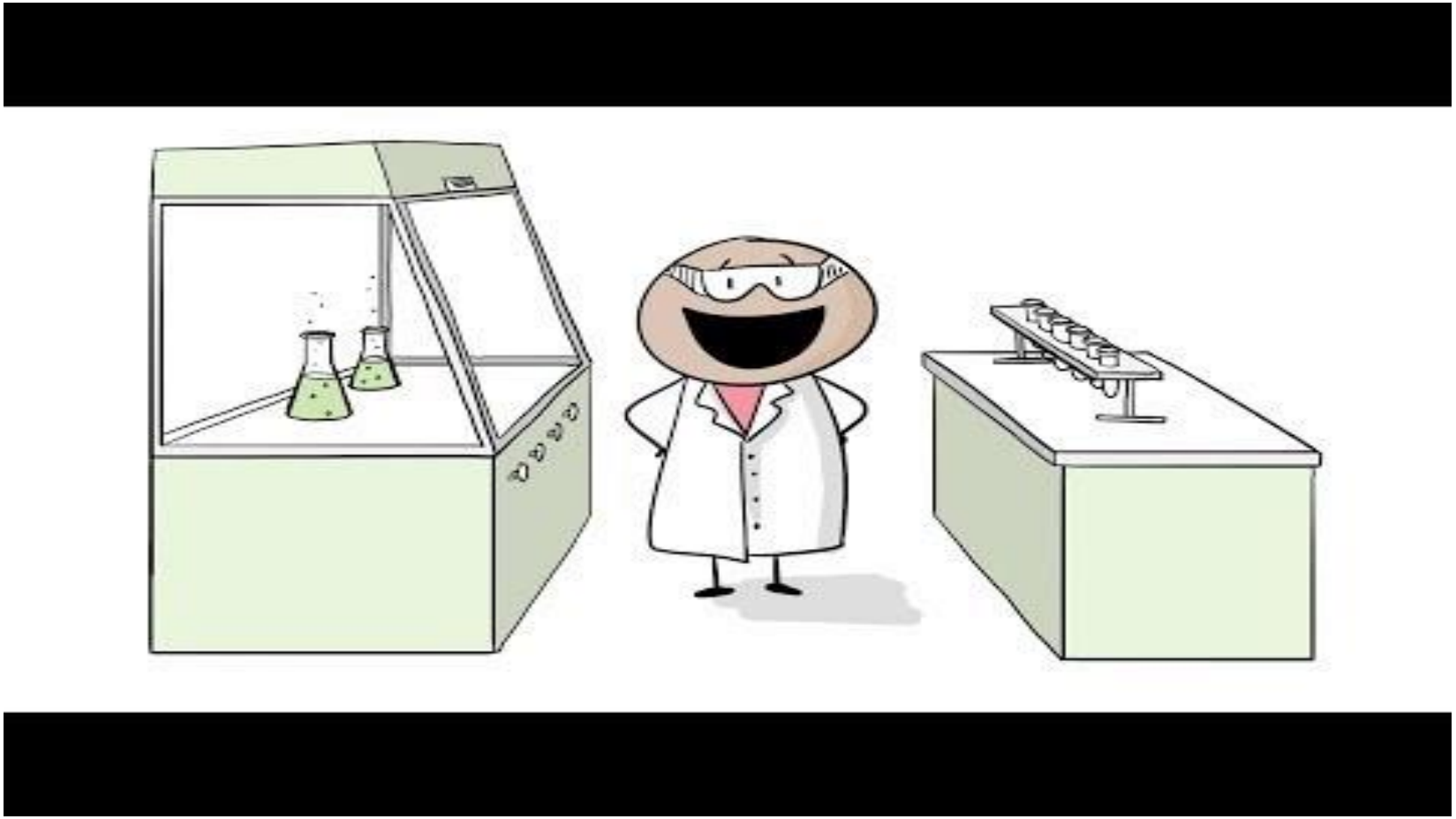
Do not rely on other people’s poorly readable label or verbal information when it comes to unknown chemical waste.
Insist that other researchers identify and properly tag a waste container with the appropriate waste tag.
If a waste container cannot be clearly identified treat it as unknown waste.

Best Line of Defense = Risk Assessment

Formal process for figuring out the potential risks associated with a particular job and devising ways to control or eliminate them before an exposure, injury or accident occurs.

The Office of Research and the Office of Environmental Health & Safety has a user-friendly web-based tool for conducting risk-based assessments - the Online Risk Assessment Tool (ORAT). http://go.osu.edu/riskassessment.

Video: Laboratory Risk Assessment



General Lab Safety

- Safe working protects everyone: you, colleagues, custodians, visitors
- All personnel are responsible for maintaining a clean and safe lab environment
- Food and drinks are excluded from the laboratory areas
- Wash hands often and before leaving laboratory area
- Clean up - return equipment/reagents/supplies to original location
- Do not block exits or safety equipment
- Wear appropriate PPE
- No open-toed shoes (sandals, flip-flops, crocs)
- Do not perform hazardous procedures alone

Working Alone. In the Evening. A Bang!

Vacuum Pump Explosion in Penn University

As usual incidents in the lab have the tendency to take place in the evening, with a researcher working alone, as it happened on August the 14th in a chemistry lab, Penn University. A vacuum pump exploded and luckily this time no one was injured.

For the complete Penn University's incident

post click here.

The **lesson learned** from the incident is priceless:

All vacuum exhaust must be properly vented and include sufficient condensing capacity prior to the pump. The exhaust ports of pumps stored in vacuum pump cabinets must be connected directly to the vent port inside the cabinet. The pump may not vent into the cabinet interior. See photo above for example of proper setup.

General Lab Safety Do's and Don'ts

Chemical spill spread by shoes

Liquid found in centrifuge rotor

DO clean up after using chemicals or equipment.
DO leave the lab cleaner than you found it.

Chemical Hygiene Plan (CHP)

The Foundation:

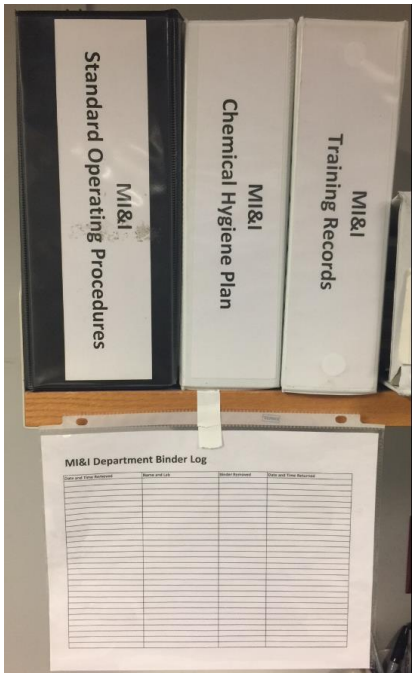
- OSHA-29CFR1910.1450 The Laboratory Standard
- In effect since 1990
- Applied the Hazard Communications “Right to Know” laws to labs
- Puts burden on researchers to document practicing safe science
- Covers use of hazardous chemicals in the labs

CHP Importance:

- OSU EHS will use CHP as a basis for the lab’s chemical safety program
- Source of all chemical and emergency procedures training for lab staff
- PPE determination and documentation

Chemical Hygiene Plan (CHP)

- **What is a CHP?** A manual of SOPs and regulations designed to aid in the protection of laboratory personnel from chemical related health hazards.
- **Contents:**
  - Laboratory locations – buildings and rooms
  - Standard Operating Procedures (SOPs)
  - Location of safety equipment
  - Chemical inventory (EHS HP Assist)
  - Training records
- **Hardcopy Location:** BRT 760X
- **PI is the Chemical Hygiene Officer in the Lab:**
  - Detailed training and ongoing safety education
  - PPE (availability and appropriate usage)
  - Equipment
  - Routine lab inspection

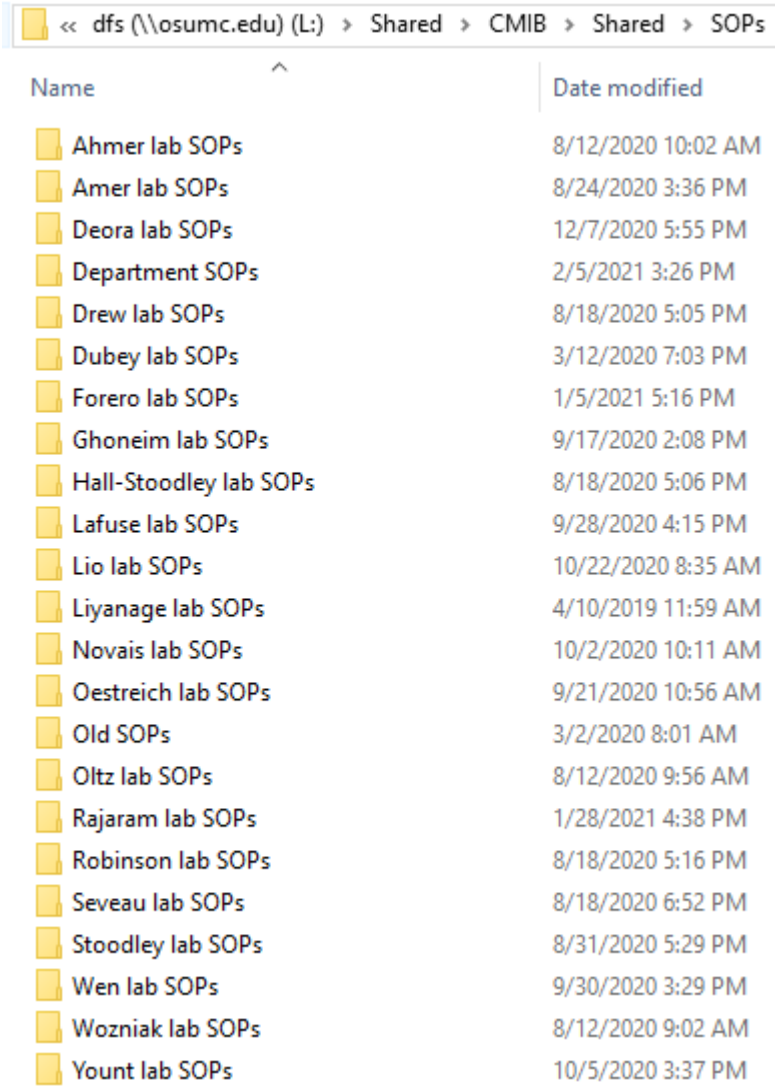


- **Designee:** (typically the lab manager) oversees implementation
- All lab personnel MUST review the CHP annually as required by OSU EHS (this training)

Standard Operating Procedures (SOP)

- Lab specific dangerous chemicals
- Gel electrophoresis
- Centrifugation
- Compressed gases
- Cryogenic liquids

Saved on MI&I (CMIB) Shared Drive (or accessible in 760X SOP Binders)



Chemical hazard definition

A chemical hazard generally refers to a type of occupational hazard caused by exposure to chemicals in the workplace. The hazard associated with a chemical depends on:

- What the specific chemical is
- What chemical(s) it is mixed with, if any
- The relative proportion of the chemical, if it is in a mixture or solution with other substances and chemicals

https://www.chemicalsafetyfacts.org/

Potential Chemical Hazards

Damage to clothing and possibly skin

Leaking container

Illegible label

Source – Safety First “Creating an Effective Lab Safety Program” and https://www.emsworld.com/article/11362795

Categories of Chemicals

- **Flammables:**
  - Ethanol, Methanol, Ether, Acetone, Glacial Acetic Acid
  - Store in flammable cabinet
- **Corrosives:**
  - Concentrated acids: such as hydrochloric, nitric, sulfuric, and acetic
  - Concentrated alkalis: sodium/potassium/ammonium hydroxide
  - Store in corrosives cabinet. Separate acid/base >2L
- **Reactive:**
  - Sodium Azide: reacts with heavy metal and heat to form explosive compounds
- **Carcinogens/Reproductive Toxins:**
  - Ethidium Bromide
  - Acrylamide: Polymerized acrylamide is not regulated. Unpolymerized liquid is a hazardous chemical
  - Formaldehyde, Phenol, Chloroform

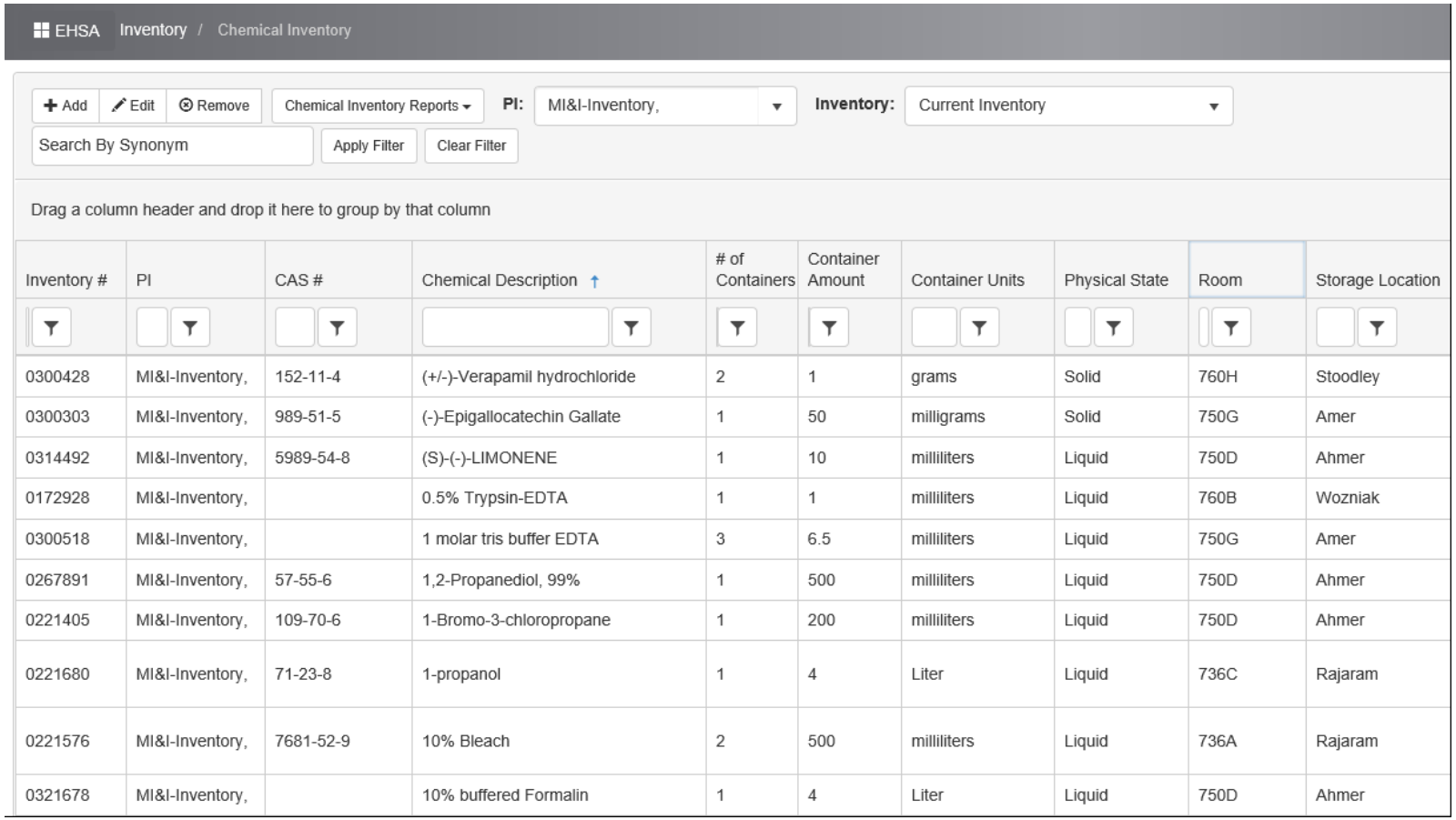
Hazardous Chemicals Procurement

Before chemicals are ordered, the following questions should be considered:

- What is the least hazardous chemical available that can be used?
- What is the minimum quantity needed to complete the experiment?
- Is the chemical already available?
- Is the lab equipped to handle a spill?
- How should the chemical be stored?
- Are personnel trained on how to safely handle the chemical?

MI&I Chemical Inventory – EHS Assist

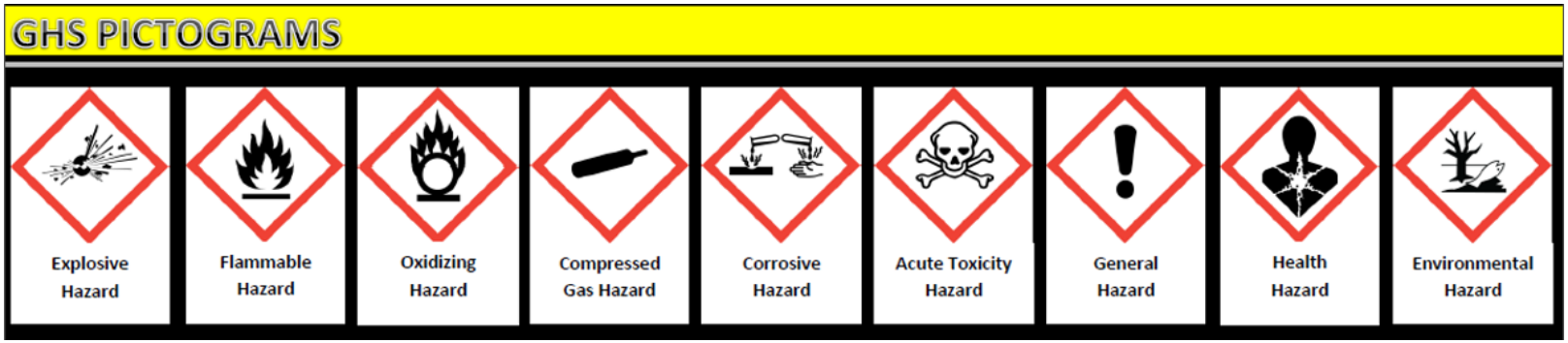
Chemical inventory is performed annually. PI's and Lab Managers have access to MI&I inventory through EHS Assist.



Inventory #	PI	CAS #	Chemical Description	# of Containers	Container Amount	Container Units	Physical State	Room	Storage Location
0300428	MI&I-Inventory,	152-11-4	(+/-)-Verapamil hydrochloride	2	1	grams	Solid	760H	Stoodley
0300303	MI&I-Inventory,	989-51-5	(-)-Epigallocatechin Gallate	1	50	milligrams	Solid	750G	Amer
0314492	MI&I-Inventory,	5989-54-8	(S)-(-)-LIMONENE	1	10	milliliters	Liquid	750D	Ahmer
0172928	MI&I-Inventory,		0.5% Trypsin-EDTA	1	1	milliliters	Liquid	760B	Wozniak
0300518	MI&I-Inventory,		1 molar tris buffer EDTA	3	6.5	milliliters	Liquid	750G	Amer
0267891	MI&I-Inventory,	57-55-6	1,2-Propanediol, 99%	1	500	milliliters	Liquid	750D	Ahmer
0221405	MI&I-Inventory,	109-70-6	1-Bromo-3-chloropropane	1	200	milliliters	Liquid	750D	Ahmer
0221680	MI&I-Inventory,	71-23-8	1-propanol	1	4	Liter	Liquid	736C	Rajaram
0221576	MI&I-Inventory,	7681-52-9	10% Bleach	2	500	milliliters	Liquid	736A	Rajaram
0321678	MI&I-Inventory,		10% buffered Formalin	1	4	Liter	Liquid	750D	Ahmer

Hazard Identification – Globally Harmonized System (GHS)

- Universal system with a logical approach to:
  - Defining hazards of chemicals
  - Creating classification processes
  - Communicating hazard information in a uniform way on labels and safety data sheets
- 3 major hazard groups = physical, health and environmental hazards



Hazard Identification – Safety Data Sheets (SDS)

- Can be obtained online from supplier or through OSU EHS website: http://ehs.osu.edu/ResBioSafety/StandardOP.aspx
- Primary source of information regarding a substance/chemical
- Universal format containing 16 distinct sections:

Identification of substance	Firefighting Measures	Physical/Chemical Properties	Disposal Considerations
Hazard(s) Identification	Accidental Release Measures	Stability/ Reactivity	Transport Information
Composition of Ingredients	Handling and Storage	Toxicological Information	Regulatory Information
First Aid Measures	Exposure Controls	Ecological Information	Other Information

- Lab personnel must be familiar with the SDS of chemicals used in their work

Hazard Identification – Safety Data Sheets (SDS)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 2), H330
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word	Danger

From OSU EHS Website: “Any chemical labeled with the GHS signal word of Danger on the SDS, or having specific handling procedures, must have a laboratory specific SOP.”

MI&I Hazardous Chemicals – GHS Labeling

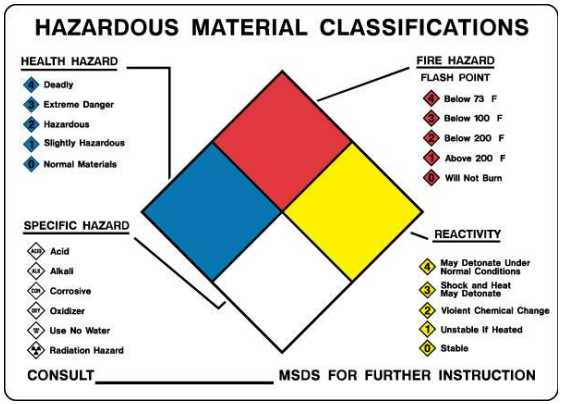
Chemicals are labeled according to GHS Signal Word

GHS Signal Word	Label
Non Hazardous	
Warning	
Danger	

Hazardous Chemical Identification - Overview

To determine a chemical's hazard(s):

- Consult the container label(s)
- Check the SDS
- Read the SOP



SAFETY DATA SHEET

Version 5.9
Revision Date 04/07/2017
Print Date 01/27/2018

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 **Product identifiers**

Product name	:	Acetic anhydride
Product Number	:	242845
Brand	:	Sigma-Aldrich
Index-No.	:	607-008-00-9
CAS-No.	:	108-24-7

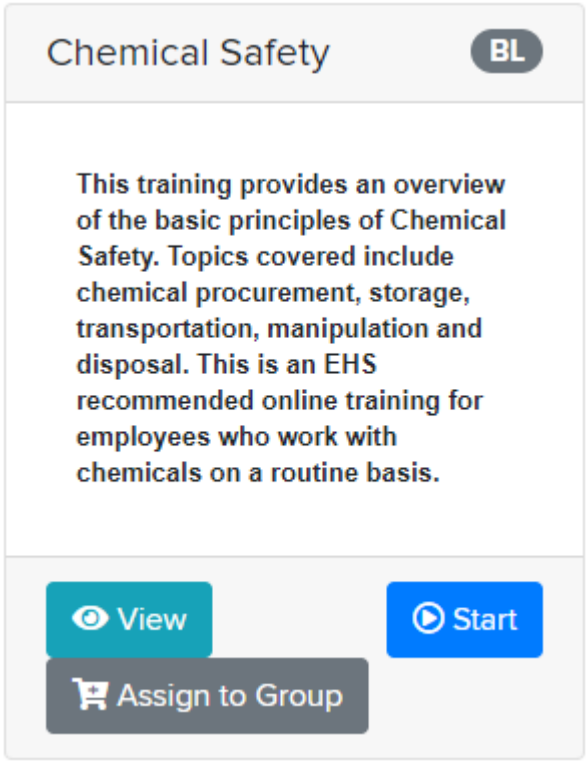
STANDARD OPERATING PROCEDURE

Chemical of Interest:

Hazardous Chemical - Storage

- Storage areas must be clearly marked (door/cabinet signs).
- Store below eye-level.
- Store like materials with like.
- Clearly label containers with Lab Name and Date Received.
- Use a secondary container with absorbent material during transportation and a cart to prevent dropping.

Hazardous Chemicals – Additional Training

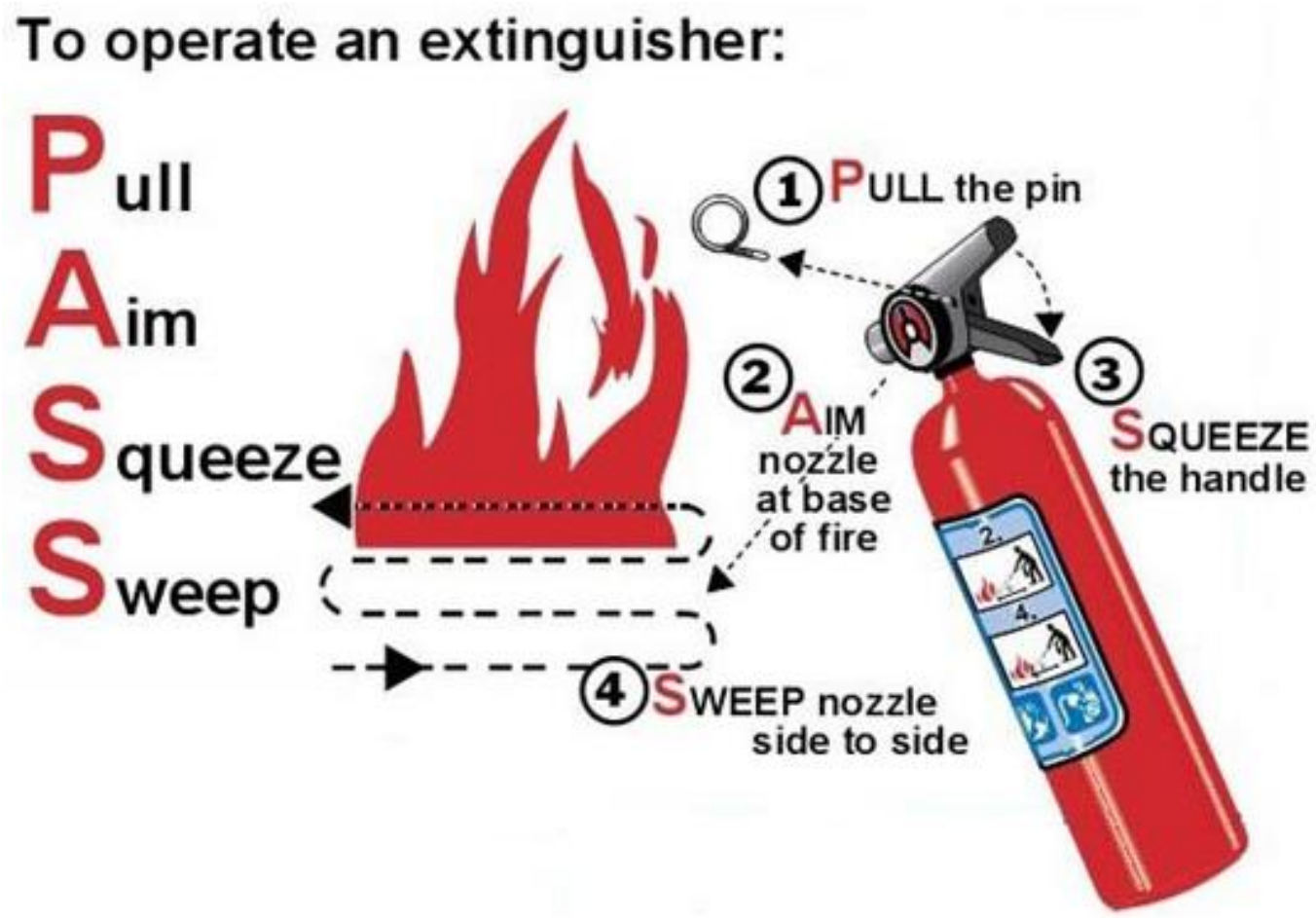


EHS Training Link

BRT 7th Floor Safety Equipment

Be familiar with the locations of lab safety equipment and exits

Fire Safety



https://www.redrivermutual.com

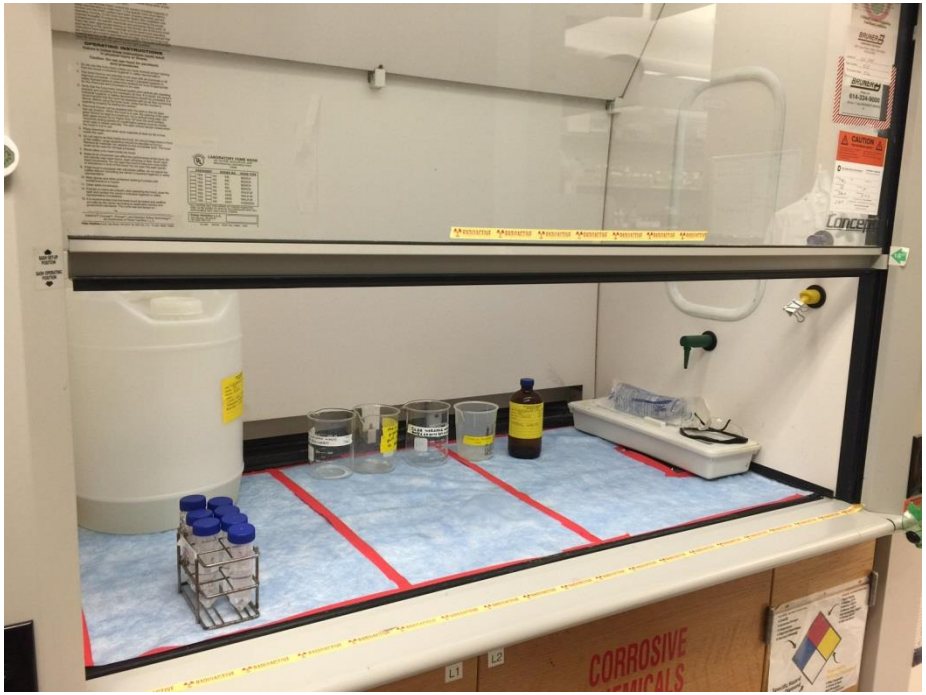
Personal Protective Equipment (PPE)

- Labs are BioSafety Level 2 (BSL-2) areas
- Pull long hair back (required in BSL1 areas as well)
- The parts of the body most frequently subject to injury in the laboratory are **eyes, skin, respiratory and digestive tracts**.
- Minimum PPE to wear while working at the bench: **gloves** & **lab coat.** Safety glasses should be worn whenever there is a risk of eye or face injury. May also require use of Face shield or fume hood.
- The chemical SOP/SDS should list required PPE
- Replace damaged or contaminated PPE
- Home-laundering of lab PPE is prohibited: Please utilize department lab-coat cleaning service.
- Remove PPE before leaving lab area: **not to be worn in elevators, office or administrative areas**
- Do not touch door handles with gloves

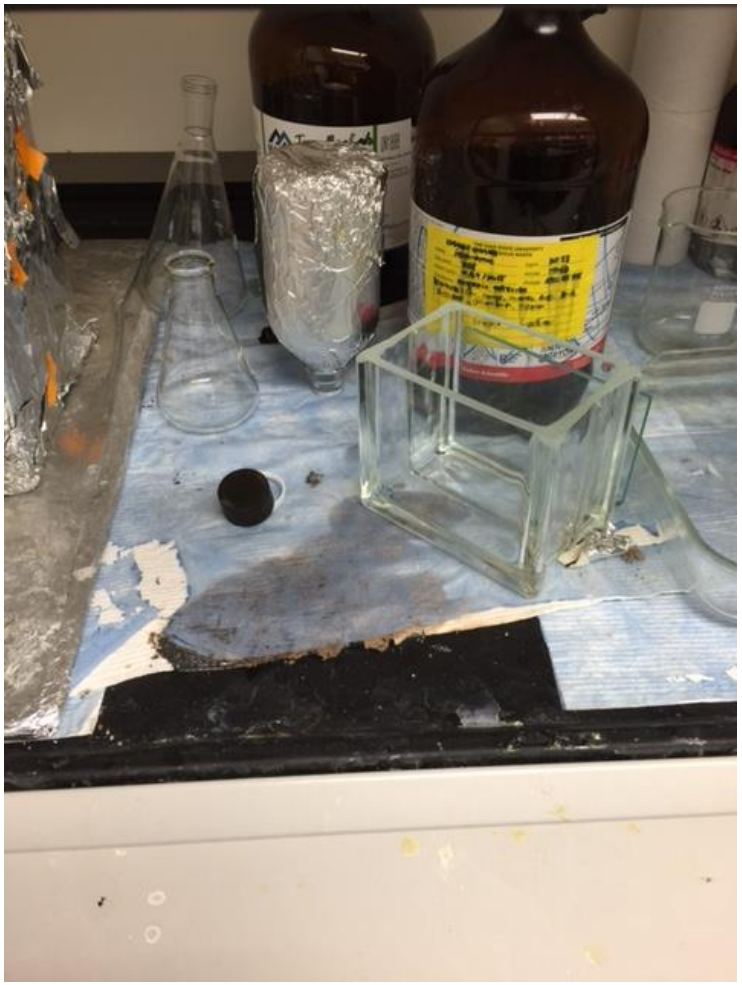
Fume Hoods

- **When to use?** While working with chemicals that produce unpleasant and/or hazardous fumes.
- **Airflow** – Air is drawn from the front of the fume hood to the baffles located in the back. Debris, such as foil and paper can easily get sucked into the baffles and block airflow.
- **Sash** – Keep at the lowest possible position and use the sash as a shield; keep closed when not in use. When left open, a single fume hood can consume as much energy as 3.5 households every day.
- **Inspect** – Check the air flow indicators before use. Properly functioning velocity = 80-120 feet per minute.
- **Not for storage** – Large numbers of chemical bottles or other items within the hood can dramatically impair air flow velocity. Items should not be left to evaporate in the fume hood – vapors may be exhausted into the atmosphere untreated. To maintain airflow, <30% of the working surface should be occupied.
- **Incompatible items** – For example, flammable solvents (alcohols, toluene, hexane, etc) should not be used/stored with concentrated acids (sulfuric or hydrochloric acids).

Fume Hoods



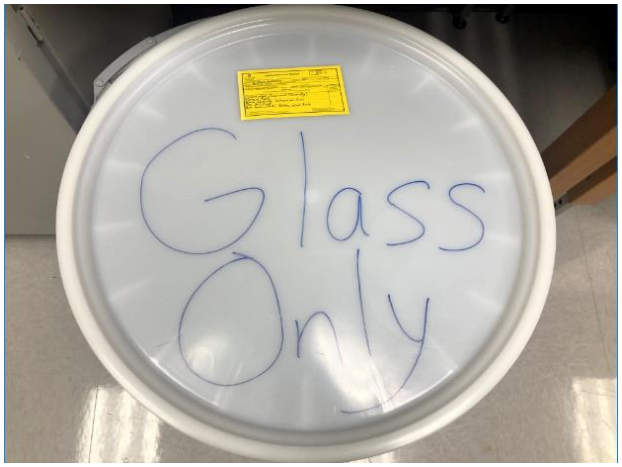
Safe

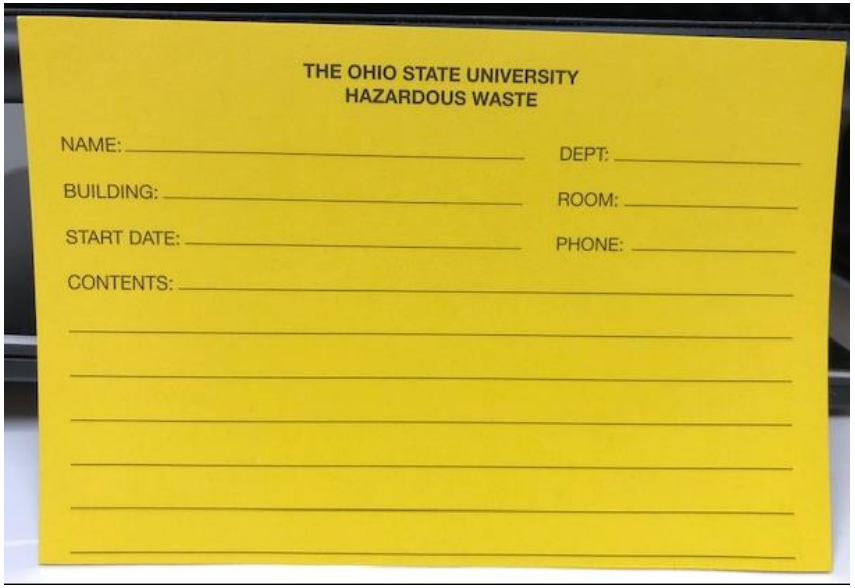


Hazardous

Hazardous Chemical Waste – Labeling

Chemical waste must be labeled with an EHS yellow tag





Chemical Waste

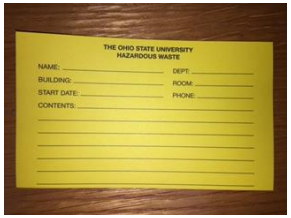
All chemical waste will be picked up by Environmental Health and Safety.
Submit disposal requests at *ehs.osu.edu/service-requests*

**Natural uranium and thorium must be segregated from other chemical waste.*
Payment must be received prior to pick-up.

CHEMICALLY CONTAMINATED DEBRIS

Examples: Gloves, pipette tips, weigh boats, tubes, vials, bench pads, ***EMPTY*** chemical bottles, and plasticware.

Label as dry chemically contaminated lab debris.



LIQUID CHEMICAL WASTE

Label with specific description of contents.

Flammable solvents only.
Label with specific description of contents.
Limited availability.

OPENED AND UNOPENED, UNWANTED CHEMICALS IN ORIGINAL MANUFACTURES CONTAINERS WITH ORIGINAL LABELS

Leave as is.

Chemicals will be placed in the Chemical Redistribution Program or disposed of as chemical waste.

Hazardous Chemical Waste - Disposal

Chemical waste must be picked up by EHS for disposal - NEVER dump down sink or throw in trash. OSU does not have a down the drain permit

Waste Pick-up Request

Environmental Health and Safety

THE OHIO STATE UNIVERSITY

CW196195

Chemical Waste
Status: Open
Opened: 2/24/2021

Requested by
Stacy Logan
logan.374
logan.374@osu.edu
(614) 292-8684

Location
COLUMBUS
(112) BIOMEDICAL RESEARC
Room 0749

Items

Description	Pick/Drop	Quantity	Status
Bottle 1lbs (drierite)	Pickup	1	Open
Bottle 500ml (methanol)	Pickup	1	Open
Other 1ml (Tris Glycine Gel)	Pickup	10	Open
Bottle 2.5gal (Lancerclean)	Pickup	1	Open
Other 1lbs (MAxicard Kit Trays)	Pickup	8	Open
Bottle 1gal (amphyl)	Pickup	2	Open
Bottle 1lbs (drierite)	Pickup	1	Open
Bottle 425ml (QC Buffer)	Pickup	3	Open
Bottle 500oz (Biocidal ZF)	Pickup	1	Open
Other 15ml (Slide-A-Lyzer Solution)	Pickup	10	Open

Emergency Procedures – Chemical Spill Cleanup

Spills that should be handled by:

Laboratory Personnel

- Minor spills
- Non-hazardous chemical spills
- Spills less than 1 gallon
- Spills that do not represent a fire or life hazard

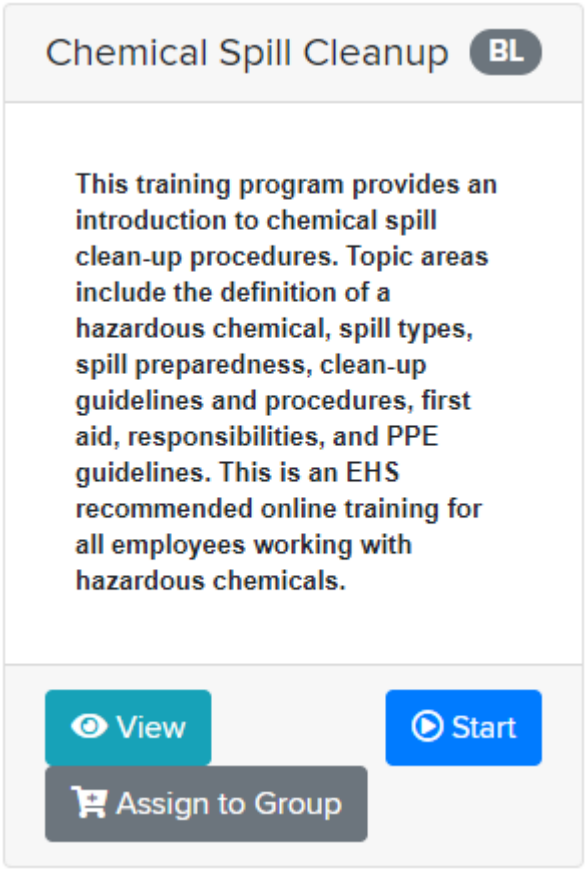
Environmental Health & Safety

- Spills which involve multiple chemicals
- Large volume spills which involve 1 gallon or more
- Acutely or Highly-toxic chemicals
- The user is not well trained, injured, or uncomfortable handling the spill
- Spills involving fire or explosive hazards

Emergency Procedures – Chemical Spill Cleanup

- **Spills Cleaned up by Lab Personnel:** Evacuate unnecessary personnel >> Close sash or isolate spill >> Reference SDS/SOP and retrieve spill kit >> Don all PPE >> Gather any broken glass in dust pan >> spread neutralizer around spill >> Sweep up spill and place in chemical waste container >> Remove PPE and place in chemical waste container >> Request a chemical pickup from EHS >> Replace spill kit contents.
- **Spills Handled by EHS:** Evacuate personnel and call 911 >> Isolate the spill, shut sash of fume hood >> Report the spill – call EHS and request Emergency Response Team >> Secure the spill area – have someone wait until the response team arrives

Chemical Spill Cleanup – Additional Training



EHS Training Link

Emergency Procedures - Exposure Response

Exposure Incidents and Reporting

An exposure incident is a specific eye, mouth, inhalation, or other mucous membrane, non-intact skin, or parenetreal contact with blood or other potentially infectious materials that result from the performance of an employee's job duties.

Initiate first-aid immediately

- Using soap and water, vigorously wash contaminated skin for 10 minutes
- Flush splashes to nose, mouth, or skin with water for 15 minutes
- Irrigate contaminated eyes for 15 minutes using sterile water or saline

Seek Medical Attention

- Notify PI/manager/supervisor immediately if available
- Seek medical attention ASAP at University Health Services during normal business hours or OSU-WMC Emergency Department after hours

- Complete and Employee Accident Report
- If incident involved a "sharp" such as a needle or scalpel, you must also complete the "Sharps Injury from Needlestick Report"
- If the incident involved rDNA or biohazards, the rDNA/Biohazard Incident Report form must be completed and submitted to the Office of Responsible Research Practices

FORM: https://hr.osu.edu/wp-content/uploads/form-accident-report.pdf

Bloodborne Pathogens – Annual Training

Login to EHS Training or BuckeyeLearn to complete BBP Training for 2021

[OSU EHS Training]

[BuckeyeLearn]

Bloodborne Pathogens Training

This training is an introduction to the OSHA Bloodborne Pathogen Standard, sharps safety, common bloodborne pathogens and the University Exposure Control Plan. This training is offered online and is required annually for all employees who are at risk for occupational exposure to human blood, body fluids, cell lines or other potentially infectious material (as defined by the OSHA standard).

This program is hosted at BuckeyeLearn.

If you've previously completed this program in BuckeyeLearn but are required to re-take it, please follow these instructions to request the program. **BuckeyeLearn will not update your completion date if you do not re-register for the training.** Programs completed today will appear on your EHS transcript tomorrow.

1. Click the ▶ **Start Program** button to open BuckeyeLearn
2. Click the dropdown arrow next to launch and choose “Request”.
3. Next click “Launch” to start the training.
4. You may need to wait up to 24 hours before the new completion date appears on your EHS Online transcript.

▶ Start Program Assign to Group

Exposure Control Plan (ECP) – Annual Training

Lab specific ECPs are developed annually for each lab. Training is provided by the Lab Manager/PI/designee. Documents are in binders across from the 761 Stockroom.

THE OHIO STATE UNIVERSITY

Bloodborne Pathogens

Exposure Control Plan

Revised September 2017

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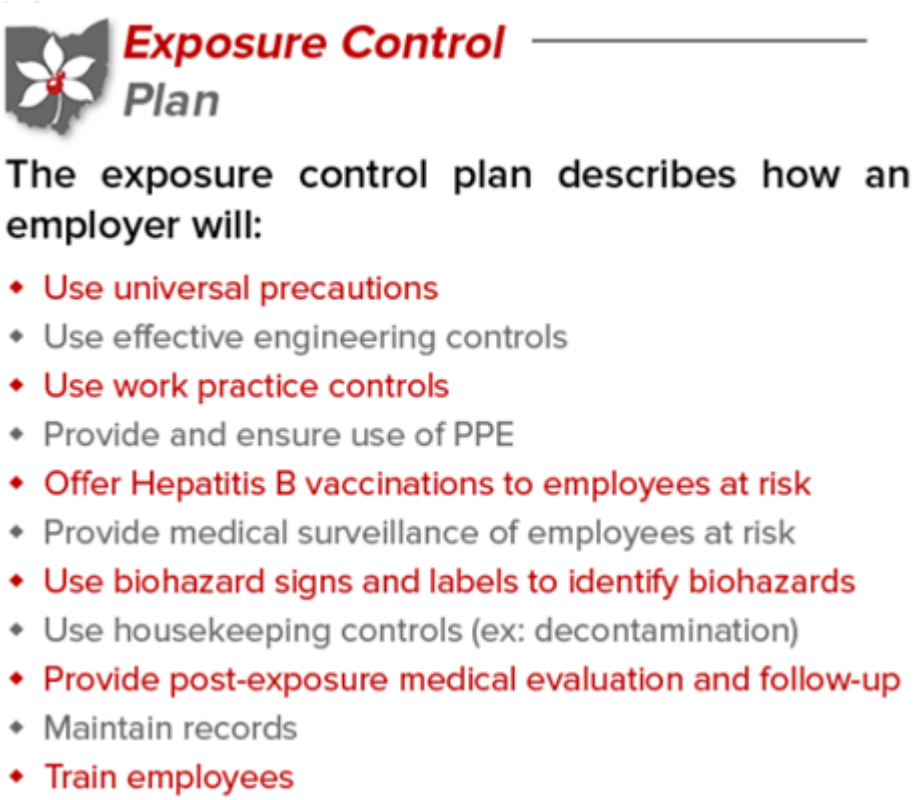

Exposure Control Plan

The exposure control plan describes how an employer will:

- Use universal precautions
- Use effective engineering controls
- Use work practice controls
- Provide and ensure use of PPE
- Offer Hepatitis B vaccinations to employees at risk
- Provide medical surveillance of employees at risk
- Use biohazard signs and labels to identify biohazards
- Use housekeeping controls (ex: decontamination)
- Provide post-exposure medical evaluation and follow-up
- Maintain records
- Train employees

HAVE A PLAN!

Be accountable for what you do.
Know what you are working with.
Think about what could happen – What if…?
Be prepared to respond.

Thank You!