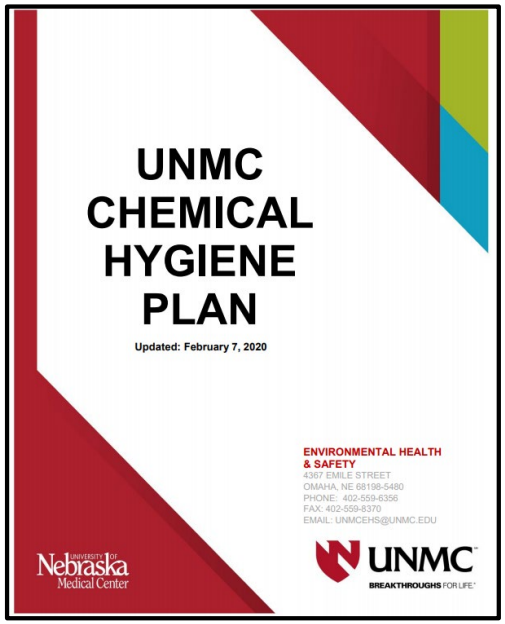
Chemical Hygiene Plan Training

University of Nebraska Medical Center

What is the Chemical Hygiene Plan (CHP)?

The CHP is a written program stating the policies, procedures and responsibilities that protect workers from the health hazards associated with the hazardous chemicals used in that particular workplace.

All UNMC employees and students who work with hazardous chemicals must adhere to the requirements outlined in this CHP. All employees are responsible for following safe work practices to protect themselves and others.



UNMC Chemical Hygiene Plan

Why do we have a CHP?

- Required by Federal Law
  - OSHA Laboratory Standard 1910.1450

OSHA
Occupational Safety and Health Administration

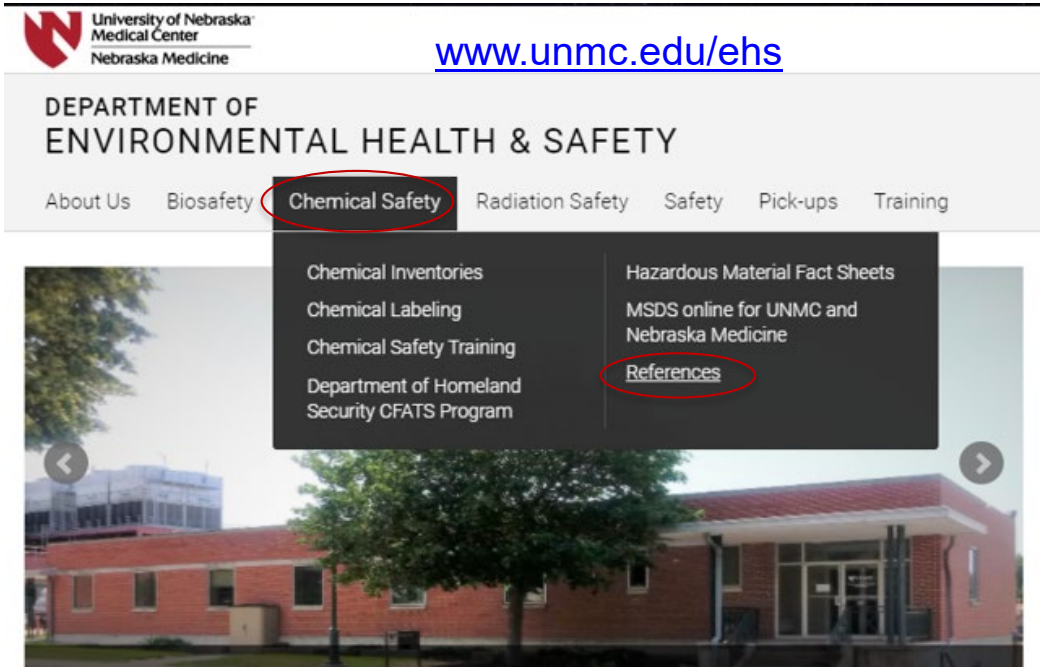
- The CHP is a program stating the policies, procedures and responsibilities that protect workers from the health hazards associated with the hazardous chemicals used in that particular workplace.

- All employees and students who work with hazardous chemicals must adhere to the requirements outlined in the CHP. Employees and students are responsible for following safe work practices to protect themselves and others.

Where can I find the CHP?

The UNMC Chemical Hygiene Plan is available online.

It is recommended that laboratories download and save a copy of the pdf file on a shared drive for all laboratory personnel to access at any time. Laboratories may also keep a printed copy within the laboratory.



Training Requirements

Employees and students working with hazardous materials should complete the Chemical Hygiene Plan training and meet all other UNMC safety training requirements.

Employees and students should also review safety policies, procedures and guidelines prior to beginning their work in the laboratory.

Please visit the EHS website for more information.

Where can I find Safety Data Sheets and other references?

Safety Data Sheets are available online by accessing UNMC MSDS Online.

Environmental Health and Safety has developed Hazardous Material Fact Sheets for certain chemical/chemical products.

Additional resources are also available online.

- Chemical Safety
- Laboratory Safety

Roles and Responsibilities

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Roles and Responsibilities

The CHP outlines individual responsibilities for the following:

- Environmental Health and Safety Department
- Primary Investigator (PI)
- Lab Manager
- Lab employees
- Chemical Safety Committee

SAFETY IS EVERYONE'S RESPONSIBILITY.

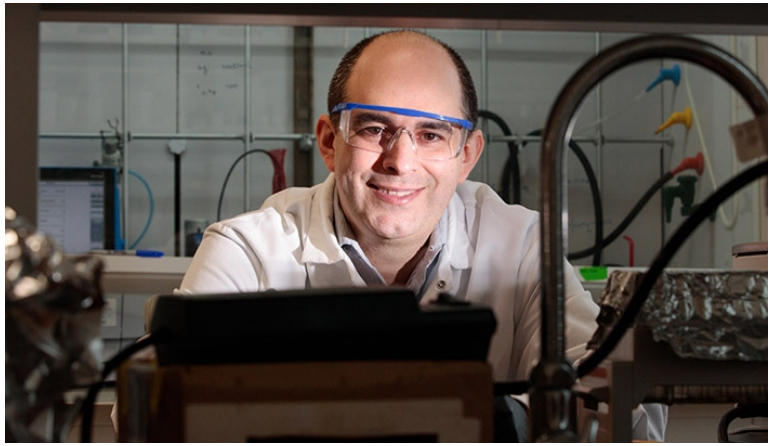
Environmental Health and Safety

UNMC Environmental Health and Safety (EHS) serves as the primary health and safety resource to assist laboratories in promoting best practices in safety and environmental performance. It maintains compliance with applicable federal, state and local regulatory requirements, agreements and permits, including implementation of each laboratory's specific CHP in compliance with the OSHA Standard 29 CFR 1910.1450.

- Provide technical support and assistance in the areas of chemical safety, radiation safety, hazardous waste, biological safety, industrial hygiene, fire/life safety and environmental stewardship.
- Develop and implement applicable training and educational material.
- Conduct annual visits to laboratories for compliance audits.
- Implement policies approved by the University administration.

Principal Investigator

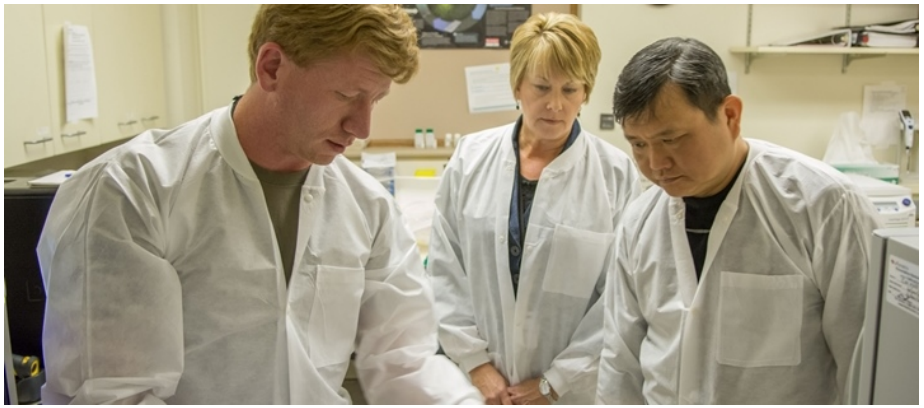
- Ensure laboratory personnel meet UNMC safety training requirements.
- Ensure laboratory personnel receive adequate laboratory process and/or equipment-specific safety training.
- Ensure appropriate personal protective equipment (PPE) is available and used.
- Ensure containers are properly labeled and hazards are identified with appropriate signage.
- Ensure laboratory signage is current and up to date.



Additional requirements can be found in the UNMC Chemical Hygiene Plan.

Lab Manager

- Ensure laboratory personnel conduct activities consistent with good laboratory practices.
- Ensure that appropriate PPE is available and used.
- Ensure that appropriate spill control material is available and personnel are trained in its use.
- Ensure that Safety Data Sheets (SDS) are available and accessible.
- Ensure that chemical inventory is prepared, maintained and accessible electronically.
- Ensure proper disposal of laboratory waste.



Additional requirements can be found in the UNMC Chemical Hygiene Plan.

Lab Employees

- Complete all UNMC Safety training requirements.
- Using appropriate engineering controls (e.g., biological safety cabinet, chemical fume hood, radiation shielding) and PPE when working in the laboratory.
- Planning and conducting each operation in accordance with laboratory standard operating procedures.
- Using the appropriate PPE.
- Review and understand emergency response procedures.
- Safely handling and disposing of chemicals.

Additional requirements can be found in the UNMC Chemical Hygiene Plan.

Chemical Safety Committee

The UNMC Chemical Safety Committee (CSC) supports and advances UNMC's continued commitment to promoting best practices in safety and environmental performance in all education and research activities.

- Maintains compliance with applicable federal, state and local regulatory requirements, agreements and permits.
- Assists in establishing research safety and environmental program goals based on issues and objectives deemed to be priorities committee members.

Management of Hazardous Chemicals

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General Classes of Hazardous Chemicals

The OSHA Laboratory Standard requires as part of the Chemical Hygiene Plan that provisions for additional employee protection be included for work involving particularly hazardous substances. These substances include “select carcinogens”, reproductive toxins, and substances which have a high degree of acute toxicity.

The OSHA Laboratory Standard defines particularly hazardous substances as:

- Carcinogens
- Reproductive Toxins
- Substances with a High Acute Toxicity
- Flammable and Combustible Liquids
- Corrosive Materials
- Highly Reactive and Unstable Materials
- Compressed Gases and Toxic Gases
- Cryogenic Materials
- Sensitizers
- Irritants
- Restricted Chemicals
- Nanomaterials
- Select Agent Toxins
- Newly Synthesized Chemicals

- **Carcinogens**

A carcinogen is a substance capable of causing cancer. Carcinogens are chronically toxic substances; that is, they cause damage after repeated or long-duration exposure, and their effects may become evident only after a long latency period.

- **Reproductive Toxins**

Reproductive toxins are substances that have adverse effects on various aspects of reproduction, including fertility, gestation, lactation, and general reproductive performance.

- **Substances with a High Acute Toxicity**

High acute toxicity includes any chemical that falls within any of the following OSHA-defined categories:

- A chemical with a median lethal dose (LD50) of 50 mg or less per kg of body weight when administered orally to certain test populations.
- A chemical with an LD50 of 200 mg less per kg of body weight when administered by continuous contact for 24 hours to certain test populations.
- A chemical with a median lethal concentration (LC50) in air of 200 parts per million (ppm) by volume or less of gas or vapor, or 2 mg per liter or less of mist, fume, or dust, when administered to certain test populations by continuous inhalation for one hour, provided such concentration and/or condition are likely to be encountered by humans when the chemical is used in any reasonably foreseeable manner.

Additional information can be found in the UNMC Chemical Hygiene Plan.

- **Flammable and Combustible Liquids**

Flammable and combustible liquids are classified according to their flash point, with flammable liquids having a flash point of less than 100°F and combustible liquids having a flash point between 100-200°F. Both flammable and combustible liquids are considered fire hazards.

- **Corrosive Materials**

Corrosive chemicals can cause irreversible and visible tissue damage through chemical action at the point of contact. Corrosive chemicals can be liquids, solids, or gases and can affect the skin, eyes, and respiratory tract. Chemicals with a low or high pH are considered corrosive. Therefore, acids and bases are corrosive.

- **Highly Reactive and Unstable Materials**

Highly reactive or unstable materials are those that have the potential to vigorously polymerize, decompose, condense, or become self-reactive under conditions of shock, pressure, temperature, light, or contact with another material. They can release heat, toxic gas, or flammable gas upon contact with water or air, or moisture in air. Water reactive materials react violently in contact with water.

Additional information can be found in the UNMC Chemical Hygiene Plan.

- **Compressed Gases and Toxic Gases**

A compressed gas is any gas or mixture of gases exerting in a container, a pressure exceeding 40.6 psia (280 kPa, abs) at 68°F (20°C). Generally, the term “compressed gas” also refers to liquefied and dissolved gases meeting these criteria and also include cryogenic gases.

- **Cryogenic Materials**

A cryogenic liquid is defined as a liquid with a normal boiling point below -150 °C (-240 °F). The most common cryogenic liquid used in a laboratory setting is liquid nitrogen. By definition, all cryogenic liquids are extremely cold. Cryogenic liquids and their vapors can rapidly freeze human tissue and can also pose an asphyxiation hazard if handled in confined spaces.

- **Sensitizers**

A sensitizer (allergen) is a substance that causes exposed individuals to develop an allergic reaction in normal tissue after repeated exposure to the substance. Examples of sensitizers include diazomethane, chromium, nickel, formaldehyde, isocyanates, arylhydrazines, benzylic and allylic halides, and many phenol derivatives. Sensitizer exposure can lead to all of the symptoms associated with allergic reactions, or can increase an individual’s existing allergies.

Additional information can be found in the UNMC Chemical Hygiene Plan.

- **Irritants**

Irritants are defined as chemicals that cause reversible inflammatory effects on living tissue by chemical action at the site of contact. A wide variety of organic and inorganic compounds, including many chemicals that are in a powder or crystalline form, are irritants.

- **Nanomaterials**

Nanomaterials are defined as materials that have at least one external dimension that ranges in size from 1- 100 nanometers. Occupational risks associated with manufacturing and using nanomaterials are not yet clearly defined.

- **Select Agent Toxins**

Select Agents and Toxins are certain biological agents and toxins which are subject to stringent regulatory requirements under 42 CFR 73, 9 CFR 121, and 7 CFR 331 for their potential to pose a severe threat to public, animals, plant health, or to animal or plant products. These toxins, along with specified biological agents (viruses, bacteria, fungi), fall under the oversight of the Federal Select Agents Program (FSAP) which requires registration for possession, use, and transfer of the listed Select Agents.

Additional information can be found in the UNMC Chemical Hygiene Plan.

- **Newly Synthesized Chemicals**

Principal Investigators will be responsible for ensuring that newly synthesized chemicals are used exclusively within their laboratories and are properly labeled. If the hazards of a chemical synthesized in the laboratory are unknown, then the chemical must be assumed to be hazardous and the label should indicate the potential hazards of that substance have not been tested and are unknown.

The Principal Investigator must ensure a SDS is prepared for newly synthesized chemicals if:

- ✓ The chemical is hazardous according to the OSHA definition of hazardous (if the hazards are not known, then the chemical must be assumed to be hazardous).
- ✓ The newly created chemical or intermediate compound is going to be kept in the lab for an on-going basis for use by current and/or future researchers in the lab where it was originally made.

- **Restricted Chemicals**

What constitutes a restricted chemical is left up to the PI who:

- ✓ Assesses the use of certain chemicals that can result in conditions of higher risk for laboratory personnel and to facilities.
- ✓ Approves the use of Restricted Chemicals when they carry a higher risk due to their inherent hazardous properties.

Typical restricted chemicals include but are not limited to extremely toxic gases, reactive metal compounds and controlled substances (restricted in terms of licensing requirements).

Additional information can be found in the UNMC Chemical Hygiene Plan.

Particularly Hazardous Substances (PHS)

The OSHA Laboratory Standard requires as part of the Chemical Hygiene Plan that provisions for additional employee protection be included for work involving particularly hazardous substances (PHS).

These substances include:

- Select carcinogens
- Reproductive toxins
- Substances which have a high degree of acute toxicity.

The listing provided in the Hazardous Material Fact Sheet,

PHS List contains examples of chemicals that may be used in your lab. They are examples of Particularly Hazardous Substances (PHS) which are a special subset of OSHA Hazardous Chemicals.

Before working with any PHS, it is advisable that you perform a PHS Assessment to determine if additional protective work practices are needed. The purpose is to conduct a risk assessment specific to activities in your laboratories. EHS recommends risk assessments are reviewed annually to ensure they are appropriate and training on their use also be conducted annually and prior to any new laboratory personnel prior to work in the affected laboratories.

Minimizing Exposures to Hazardous Chemicals

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Minimizing Exposures to Hazardous Chemicals

For the general safety of laboratory personnel, all chemical usage must be conducted in adherence with the general safe laboratory practices below. Methods used to specifically control chemical exposures are categorized as follows:

- Engineering Controls
- Administrative Controls
- Personal Protective Equipment

Engineering Controls

General lab ventilation cannot be relied upon alone to protect personnel from localized exposures to hazardous levels of airborne chemicals. Engineering controls such as laboratory fume hoods, glove boxes, and other local exhaust systems (e.g. drop down flexible ducts) may be necessary to provide additional exposure control.

In general, laboratory fume hoods are recommended whenever using hazardous chemicals that:

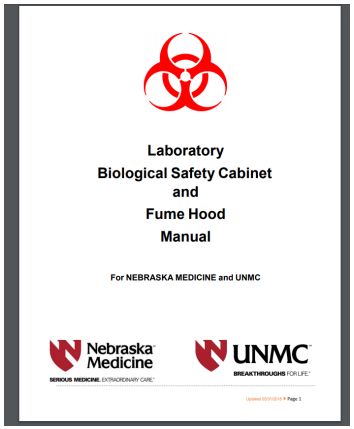
- Have a high degree of acute toxicity, are carcinogens, or are reproductive toxins, except where there is very low risk of exposure (e.g., use of minimal quantities in a closed system).
- Have a permissible exposure limit of less than 50 ppm (or 0.25 mg/m3 for particulate matter).
- Are appreciably volatile (e.g., solvents) or are easily dispersible in air (e.g., dust).

Additional resources related to engineering controls:

Laboratory Hood Manual

Laboratory Fume Hoods Safety Guideline

Laboratory Hoods – What's the Difference?



Administrative Controls

Administrative controls are one of the steps in the hierarchy of hazard control and they should be used if elimination, substitution and engineering controls cannot effectively minimize the hazard to individuals. Administrative controls include training, procedures, policy, and changes in work schedule to minimize the amount of time an individual may be at risk. Administrative controls include work practices like prohibiting mouth pipetting, recapping needles, lab safety signs warning of hazards present in labs and rotating workers in noisy environments to prevent hearing loss.

Administrative controls for minimizing exposures to hazardous chemicals include, but are not limited to:

- Substituting in less hazardous chemicals (e.g., using proprietary detergents instead of chromic acid for cleaning glassware; or, using toluene instead of benzene for liquid-liquid extraction or chromatography).

- Isolating or enclosing an experiment within a closed system (e.g., glove box, sealed chamber).

- Micro-scaling the size of the experiment to reduce the amount of chemical usage.

- Scale up reactions in small steps and evaluate safety issues after each step to fully understand the reactive properties of the reactants and solvents, which may not have been evident at a smaller scale. Evaluate safety issues after each step.

Personal Protective Equipment (PPE)

Personal protective equipment is protective gear needed to keep workers safe while performing their jobs. It is a general term used to describe anything you can wear and/or use in order to protect yourself when working with chemical or biological hazards.

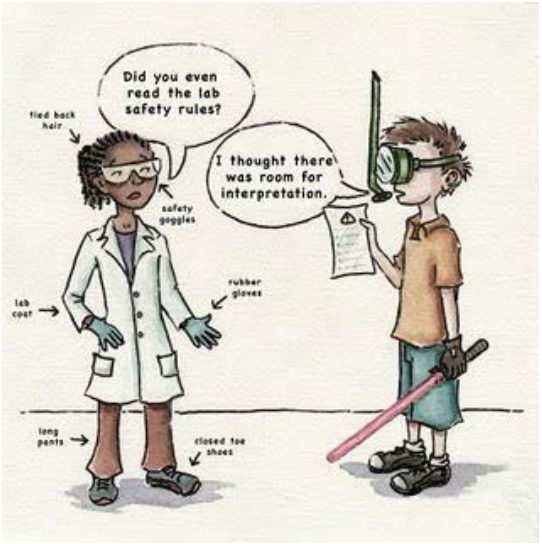
It is important that PPE be selected based upon the hazard to the worker, properly fitted and in some cases periodically refitted (e.g. respirators), conscientiously and properly worn, regularly maintained and replaced in accordance with manufacturer's specifications, properly removed and disposed of to avoid contamination of self, others or the environment.

Additional resources for PPE:

Laboratory Safety Manual

Laboratory PPE Selection Guide

PPE Training and Issuance Record



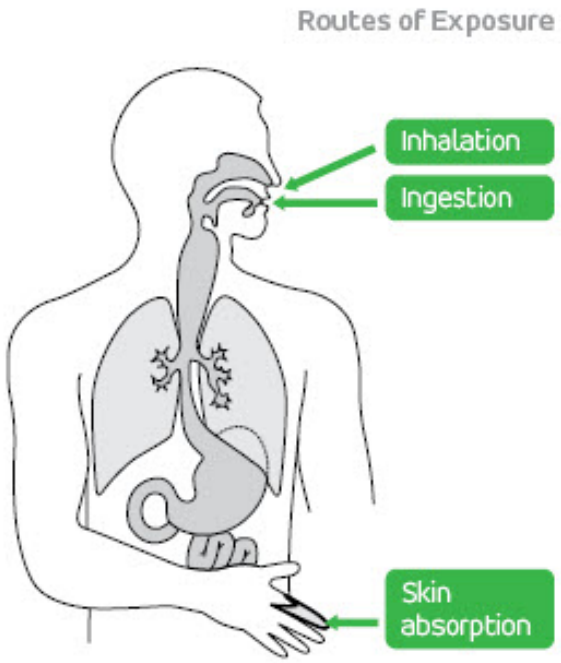
What are the signs and symptoms of hazardous chemical exposures?

There are three main “routes of exposure,” or ways a chemical can get into your body.

- **BREATHING (INHALATION):** Breathing in chemical gases, mists, or dusts that are in the air.

- **SWALLOWING (INGESTION):** This can happen when chemicals have spilled or settled onto food, beverages, cigarettes, beards, or hands.

- **SKIN OR EYE CONTACT:** Getting chemicals on the skin, or in the eyes. They can damage the skin, or be absorbed through the skin into the bloodstream.



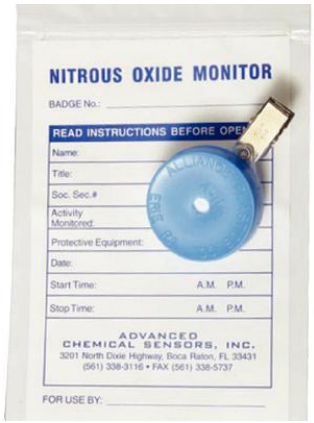
Additional information on hazardous chemical exposures can be found here: OSHA Understanding Chemical Hazards.

Chemical Exposure Assessment

Information on chemical hazards can be found on-line in the **NIOSH Pocket Guide to Chemical Hazards**.

Personal Exposure Monitoring

- Environmental Health & Safety and College of Public Health can provide assistance in conducting a risk assessment to determine if chemical exposure monitoring is necessary in the laboratory.
- For more information on exposure monitoring in the laboratory, please contact Environmental Health and Safety at (402) 559-6356.



Chemical Labeling, Storage and Inventory

University of Nebraska Medical Center

Chemical Labeling

The Globally Harmonized System (GHS) is an international system that the United Nations created for the unified classification and labeling of chemicals adopted in the U.S. in 2012. OSHA's adoption of the GHS is a revision of the Hazard Communication Standard designed to align with the GHS.

Labeling is the cornerstone of GHS compliance. With an emphasis on consistency and comprehension of chemical labels, it is important to know what goes into a GHS compliant label.

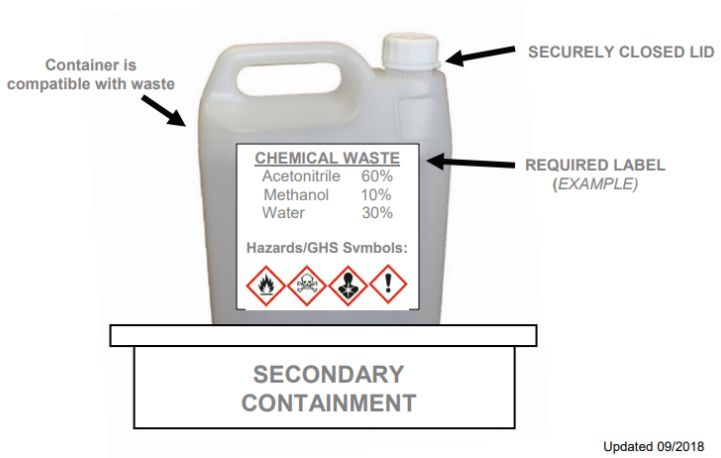
Chemical Waste Labeling

Basic Rules for Used Chemical Collection

- Label containers “Chemical Waste” and list chemical contents.
- Use full chemical names (no abbreviations) and list all chemicals and their percentages in the container.
- Choose collection containers that are in good condition, clean and that are compatible with the contents you will be adding (e.g., no acids in metal containers).
- DO NOT place incompatible chemicals in the same container.
- Keep used chemical collection containers closed, except when adding chemical.
- Store used chemical collection containers in secondary containment.
- Separate incompatible chemicals in storage, and store all used chemicals that are flammable in a flammable liquid storage cabinet.

To meet the EPA regulations of chemical labeling, templates are available for laboratories to print and use within their laboratories.

Chemical Label Template
Chemical Waste Label Template



Updated 09/2018

Chemical Storage

Due to the diverse individual properties of chemicals that may be located in a chemical use area, proper storage requirements may be complicated. Specific instructions on chemical storage may be obtained from the Safety Data Sheet, container label or by contacting EHS.

General Chemical Storage Requirements

- Ensure that all containers are in good condition.
- Ensure that all containers are properly closed.
- Ensure that all containers are properly labeled with the full chemical name(s).
- Ensure that storage areas are dry and adequately ventilated.
- Do not store chemicals above eye level.
- Always store flammable chemicals in a flammable cabinet.
- Store incompatible chemicals separately. Chemicals should not simply be stored in alphabetic order without regard to compatibility.
- Segregate chemicals according to compatibility class to avoid reactions if the containers leak or break. *Reference Table 1, Chemical Compatibility Classes*.
- Gas cylinders should be individually secured and stored away from heat sources.
- Store highly reactive or corrosive liquids in spill trays.
- Chemicals should not be permanently stored in fume hoods.
- **There should be no unlabeled containers.**

Table 1

Chemical Compatibility Classes

Compatibility Class	Code	Groups
Explosives/ Shock-Sensitives	**EX**	Explosive
	SS	Shock-Sensitive
Flammable/ Combustible Liquids	**FL**	Organic Group-One[1]
	FL-2	Organic Group-Two[2]
	FL-HYZ	Hydrazine
	FL-A	Flammable Acid
	FL-B	Flammable Base
Flammable Solids	**FS**	Flammable Solid
Oxidizers	**OX-A**	Inorganic Acid
	OX-B	Basic and Other
	OX-O	Organic Oxidizer
Acids	**AC-I**	Inorganic Acid
	AC-O	Organic Acid
Bases	**BS-I**	Inorganic Base
	BS-O	Organic Base
Cyanides and Sulfides	**CN**	Cyanide
	SU	Sulfide
Poisons	**PO**	Organic Group-One[1]
	PO-2	Organic Group-Two[2]
	PO-I	Inorganic Poison[3]
Other	**SA**	STORE ALONE!!

[1] Group-One: Alcohols, glycols, aldehydes, amides, esters, ethers, aromatic hydrocabons, halogenated organics, ketones and aliphatic saturated hydrocarbons.

[2] Group-Two: Aliphatic and aromatic amines, dithio-carbamates, carbamates, mercaptans and other organic sulfides, nitriles, organic nitro compounds, and unsaturated aliphatic hydrocarbons.

[3] Inorganic poisons generally can be placed with either Group-One or Group-Two poisons.

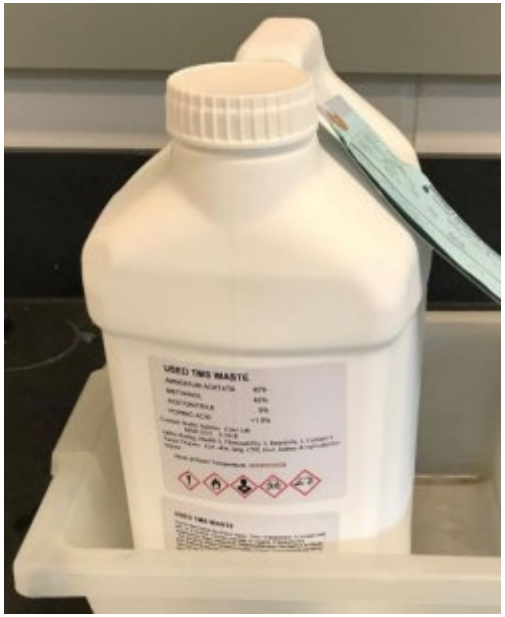
Updated 09/2018

Additional information can be found in the Chemical Storage Fact Sheet.

Chemical Waste Storage

All chemical waste collection containers must meet the following requirements outlined below. When chemical waste collection container is full, or you are no longer adding to it, please complete a chemical collection tag for EHS to pick-up and properly dispose of the chemical(s).

- Container is properly labeled with full chemical name(s), and the word “waste”.
- Container identifies hazards associated with the contents of chemical waste.
- Container is to be kept closed, except when adding waste.
- Container is storing materials that are compatible and compatible with waste being collected.
- Container is stored within secondary containment.
- Containers containing flammable chemicals, must be stored in a flammable liquids cabinet, except when adding waste.
- Total volume of hazardous waste storage is < 30 gallons or < 1 quart of acutely hazardous waste.



Additional information can be found in the Chemical Collection Containers and Storage Fact Sheet.

Chemical Inventory

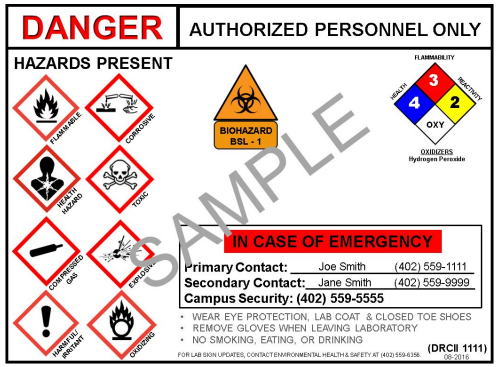
In order to respond safely to laboratory emergencies, the Omaha Fire/HAZMAT Department has requested chemical inventories to include chemical name, CAS number, location and quantity, for each laboratory room at UNMC/Nebraska Medicine.

With the support of Dr. Jennifer Larsen, Vice Chancellor for Research, EHS has committed to managing an online central database for all laboratory chemical inventories.

Laboratories are required to update their chemical inventories on an annual basis using the Chemical Inventory Instructions.

Each laboratory on campus must have a current lab sign posted at the corridor door leading into the laboratory room/space. Chemical inventories are used by EHS to assign the appropriate hazards on each lab sign.

PI Last Name	PI First Name	Physical State	Chemical Name	Bldg Code	Lab/Room #	Storage Location	Storage Device	# of Containers	Amount per Container	Unit of Measure	CAS #
Smith	John	Solid	Sucrose	DRC	8054			1	1	KG	57-50-1
Smith	John	Solid	Sodium Chloride	DRC	8054			1	500	G	7647-14-5
Smith	John	Solid	Sodium azide	DRC	8054			1	100	G	26628-228
Smith	John	Solid	Sodium Deoxycholate	DRC	8054			1	25	G	302-95-4
Smith	John	Solid	Sodium Dodeyl Sulfate	DRC	8054			1	500	G	151-21-3
Smith	John	Solid	Sodium Hydroxide	DRC	8054			1	3	KG	1310-73-2
Smith	John	Solid	Sodium Chloride	DRC	8056			2	1	KG	7647-14-5
Smith	John	Solid	Sodium Dodeyl Sulfate	DRC	8058			1	25	G	151-21-3



Additional information can be found online, Laboratory Signs.

Hazardous Waste Management

University of Nebraska Medical Center

Hazardous Waste Management

Environmental Health and Safety is responsible for the “cradle to grave” management of hazardous waste in accordance with Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) regulatory requirements. The primary mission of the Environmental Protection Agency (EPA) is to protect and enhance our environment.

The variety of chemicals generated at UNMC prohibits the development of guidelines specific to each chemical. However, guidelines for the disposal of some chemical wastes are presented and must be subsequently tailored to accommodate different types of chemicals.

Environmental Health and Safety has developed Hazardous Material Fact Sheets for certain chemical/chemical products. Please use these as a quick reference to guide you as you generate and dispose of these items.

Dangerous Goods Shipping

University of Nebraska Medical Center

Dangerous Goods Shipping

Environmental Health and Safety is also responsible for managing the ground and air shipping of Hazardous Materials/Dangerous Goods, in accordance with the Department of Transportation (DOT) and the International Air Transport Association (IATA) regulatory requirements.

The Department of Transportation (DOT) establishes the Nation's overall transportation policy. It bears the primary responsibility for issuing standards and regulations relating to the transportation of hazardous materials from State to State nationwide.

Information related to shipping chemicals can be found in the UNMC Hazardous Materials/Dangerous Goods Shipping Plan.

Chemical Spills & Exposures

University of Nebraska Medical Center

Chemical Spills

Chemical spills can and do occur despite our best intentions. The goal is to minimize the potential for spills and to prepare for chemical spills.

Depending on the chemical properties and quantity of the spilled chemical, it can create potentially dangerous situations. Therefore, it is important that UNMC personnel are prepared for chemical spills.

REPORT ALL CHEMICAL SPILLS!!!

BUSINESS HOURS:
CONTACT EHS
402-559-6356

AFTER BUSINESS HOURS:
CONTACT SECURITY
402-559-5555

Chemical Spills

All individuals who work with chemicals should review the UNMC Chemical Spill Plan.

The Chemical Spill Emergency Response shown below is available online and can also be found in the Emergency Preparedness Guide.

Controlled Spills

Controllable spills that can be cleaned up by personnel in the area of the spill.

1. These are spills of chemicals that are not reasonably expected to be a threat to human health or the environment, the properties are well known, and have been previously determined to be safely cleaned by laboratory personnel.
2. Evacuate other personnel from the area.
3. Review the Safety Data Sheet (SDS) for guidance.
4. Don the appropriate PPE.
5. Use the spill pads or absorbents to contain the spill.
6. Containerize the spilled material, fill out a chemical collection tag, and contact EHS.
7. Complete the Incident/Accident & Near-Miss Reporting Form at: https://www.unmc.edu/ehs/safety/incident-reporting.html

Controlled Spills, requiring assistance

Controllable spills that are beyond the capabilities of personnel in the area of the spill.

1. These are spills of chemicals that are not reasonably expected to pose a threat to human health or the environment, the properties are well known, but they are beyond the capabilities of laboratory personnel.
2. Evacuate other personnel from the area.
3. Contact UNMC Environmental Health and Safety (EHS) 402-559-6356 between the hours of 7:00 a.m. to 4:30 p.m., Monday - Friday, or call UNMC Security/Public Safety at 402-559-5555 after hours/weekends for assistance.
4. Provide the SDS for guidance.
5. The UNMC EHS Office will assist and containerize the spilled material and clean up the area if they can safely do so utilizing level C PPE.
6. Lab personnel will fill out a chemical collection tag, and contact EHS.
7. Complete the Incident/Accident & Near-Miss Reporting Form at: https://www.unmc.edu/ehs/safety/incident-reporting.html

Uncontrolled Spill

Spill may pose a threat to human health and/or the environment and personnel in the vicinity are not able to contain the spill.

These are spills of chemicals that involve personnel injury, fire or explosion and can pose a threat to human health, the environment or UNMC property. It also includes large uncontrollable chemical spills, unknown chemical spills that are reasonably expected to cause serious injury or damage, or spills of chemicals that are water reactive, pyrophoric, shock sensitive, temperature sensitive, or highly toxic materials and cannot be safely cleaned by laboratory personnel.

1. Evacuate other personnel from the area.
2. Contact UNMC Security/Public Safety at 402-559-5555.
3. Provide the SDS for guidance.
4. Complete the Incident/Accident & Near-Miss Reporting Form at: https://www.unmc.edu/ehs/safety/incident-reporting.html

Chemical Spill Kits

- Chemical Spill Kits should be readily available in laboratory areas where chemicals are used.
- Laboratories should purchase or make a chemical spill kit.
- Chemical spill kits should be stored in the laboratory, at or near the point of chemical waste generation.
- All lab personnel should know the location and contents of the kit.

At a minimum, all chemical spill kits must contain:

- Splash goggles
- Chemical resistant gloves (will depend on the chemicals you work with)
- Protective outer garments (lab coat, Tyvek suit, shoe covers)
- Chemically compatible spill pads, and/or absorbent material and/or neutralizers.
- Bags and zip ties for holding spill debris.

Chemical Exposures

In the event of a chemical exposure, contact the Campus Security at 402-559-5555 (off-campus 911) if the exposure has resulted in the person being grossly contaminated, injured or incapable of rending aid to themselves or if providing assistance to the injured party would put the rescuer at risk.

The poison control center can provide some guidance but will need to know the name of the chemical/ substance. In the Omaha area, call 402-955-5555 or call toll-free 1-800-222-1222.

Routes of Exposure

- Eye – See Figure 1, #7
- Ingestion – Call Poison Control Center and seek medical treatment.
  Victims who have ingested a toxic chemical may expose others through vomitus.
- Inhalation – Leave the area. Move to fresh air. Seek medical treatment.
- Skin – See Figure 1

FIGURE 1 – TREATMENT FOR CHEMICAL BURNS

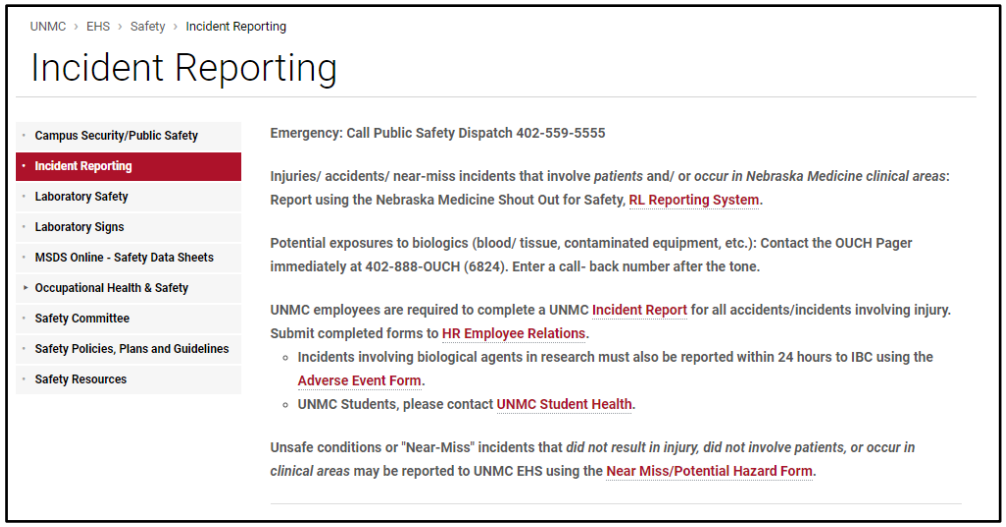
1. Identify the chemical that was involved. As work, have someone check the Safety Data Sheet (SDS) for this information.
2. Move the victim away from fumes or ventilate the area.
3. With a gloved hand or piece of cloth, brush off any dry chemical.
4. Remove clothing and jewelry from the burn area.
5. Flush the entire area as quickly as possible with large amounts of running water. Flush until Emergency Personnel arrive to give definitive care or until ta topic specific solution is available.
6. Contact the Poison Control Center in your area, or 911. Many chemical burns may be treated with local wound care. Some chemicals can cause life and limb threatening injuries and need emergency care.
7. Victims with chemical burns to their eyes should always seek emergency care. Flush the victim's eye with large amount of running water until Emergency personnel arrives. Have a victim wearing contact lenses remove them.

Reference: *Treating Burns, National Safety Council*

Incident Reporting

All chemical spills and exposures should be reported to EHS.

UNMC employees are required to complete a UNMC Incident Report for all accidents/incidents involving injury. Submit completed forms to HR Employee Relations.



Additional information can be found online, Incident Reporting.

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