UNIVERSITY OF NEBRASKA MEDICAL CENTER℠
ENVIRONMENTAL HEALTH AND SAFETY

UNMC CHEMICAL SPILL PLAN

Updated: April 2025

UNMC Chemical Spill Plan
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1. Introduction

Chemical spills can and do occur despite our best intentions. Depending on the chemical properties and quantity of the spilled chemical, it can create potentially dangerous situations. Therefore, UNMC personnel must be prepared for chemical spills. For more information on this plan or to ask questions, please get in touch with the UNMC Environmental Health and Safety Office (EHS) at 402-559-6356.

2. The Basis for the Chemical Spill Response Plan

Chemicals are used throughout the UNMC Campus. Despite efforts to be careful when handling chemicals, laboratory, environmental service, and facilities employees sometimes spill chemicals. Chemical spills can pose significant health and safety hazards, resulting in death, injury, property damage, and environmental contamination, which can leadto regulatory violations and fines. The Environmental Protection Agency (EPA), as outlined in Title 40 of the Code of Federal Regulations (CFR), requires that all chemical spills be evaluated and reported if the quantity threshold is exceeded.

Chemical spill response at UNMC must be a shared responsibility among personnel who use chemicals, Principal Investigators, Department Heads, Security/Public Safety, the UNMCIncident Commander, Environmental Health and Safety, Facilities, Environmental Services, and sometimes independent contractors.

This comprehensive chemical spill response plan assigns responsibilities and guides the minimization, preparation for, and cleanup of chemical spills. Following the Chemical Spill Response Plan will help UNMC protect human health, facilities, and the environment.

3. Responsibilities

3.1 UNMC Personnel (who use chemicals)

In most cases, personnel working with hazardous chemicals or in areas where they are stored will be required to report and potentially clean up chemical spills. These individuals should receive this information from their Principal Investigator (PI).

These individuals need to know:

1. The hazard of the chemical they are working with.
2. Which chemicals and quantities they can safely clean.
3. The proper personal protective equipment (PPE) to use.
4. How to report chemical spills.

3.2 UNMC Principal Investigators (PIs)

UNMC Principal Investigators shall be responsible for the safe operation of their laboratories and chemical handling, including but not limited to:

1. Maintaining a laboratory emergency response plan.
2. Updating laboratory safety/NFPA signs whenever information changes.
3. Providing a chemical inventory and the maximum quantity on an annual basis to EHS.
4. Maintaining Safety Data Sheets (SDS) for each chemical.
5. Ensuring that 24/7 phone numbers are provided to EHS for all areas where chemicals are stored or used. Emergency contacts should be able to provide specific laboratory information about chemicals in the lab space.
6. Preparing for and cleaning up chemical spills.
7. Providing spill control material and personal protective equipment (PPE) for laboratory personnel.
8. Training on how to properly clean up spilled chemicals.

Following the above guidelines will enable the safe handling of chemical spills, provide guidance on chemical spill cleanups, and ensure compliance with federal regulations. If outside contractors are needed to clean up a spill in their laboratory, the PI's department may be financially responsible and may be required to provide a cost centerto cover the costs.

3.3 UNMC Department Heads

Some areas within the UNMC campus are managed by a department rather than a single person (e.g., Comparative Medicine, Facilities). UNMC Department Heads shall be responsible for the safe operation of their areas and chemical handling, including:

1. Maintaining a laboratory emergency response plan.
2. Updating laboratory safety/NFPA signs whenever information changes.
3. Providing a chemical inventory and the maximum quantity on an annual basis to EHS.
4. Maintaining Safety Data Sheets (SDS) for each chemical.
5. Ensuring that 24/7 phone numbers are provided to EHS for all areas where chemicals are stored or used. Emergency contacts should be able to provide specific laboratory information about chemicals in the lab space.
6. Preparing for and cleaning up chemical spills.
7. Providing spill control material and personal protective equipment (PPE) for laboratory personnel.
8. Training on how to properly clean up spilled chemicals.

Following the above guidelines will enable the safe handling of chemical spills, provide guidance on chemical spill cleanups, and ensure compliance with federal regulations. If outside contractors are needed to clean up a spill in their area, the

department may be financially responsible and may be required to provide a cost center to cover the costs.

3.4 UNMC Security/Public Safety

UNMC Security/Public Safety personnel shall be responsible for the following:

1. Taking spill calls at 402-559-5111 for controlled chemical spills.
2. Taking spill calls at 402-559-5555 for uncontrolled chemical spills.
3. Contacting OFD and on-call UNMC Incident Commander for all uncontrolled spills..
4. Contacting the appropriate 24/7 on-call PI, Department Head, or designee, depending on the location of the spill.
5. Contacting the UNMC EHS on-call spill response contact for all chemical spills.
6. Responding to all spills that require assistance to secure the area, help with evacuations if necessary, and assist outside personnel responding to the event.
7. Cordon off spill areas and buildings until proper spill determinations are made and the spill is properly mitigated and cleaned.

3.5 UNMC Incident Commander

The 24/7 on-call UNMC Incident Commander shall be responsible for the following:

1. Activating the UNMC Disaster Response Plan if necessary.
2. Acting as the on-site incident commander, unless otherwise directed by an outside authority (e.g., the Omaha Fire Chief) for uncontrolled spills.
3. Approving the shutdown of all operations in the affected spill area.
4. Deciding to contact the retained independent spill remediationcontractor to provide chemical spill clean-up.
5. Deciding to contact the retained independent industrial hygiene contractor to provide monitoring and guidance, allowing for the safe re-entry ofUNMC personnel.

3.6 UNMC Environmental Health and Safety

Environmental Health and Safety shall be responsible for the following:

1. Ensuring that all laboratory and area NFPA signs are up to date.
2. Ensuring that all PIs and departments maintain a list of chemicals in their respective areas.
3. Ensuring that areas maintain Safety Data Sheets (SDS) for each chemical.
4. Ensuring that 24/7 phone numbers for all areas where chemicals are stored orused (PI, Department Head, and/or designee) are on file and that Public Safety has access to the information.

5. Maintaining the contracts for independent spill remediation and industrial hygiene contractors.
6. Reviewing the Safety Data Sheet (SDS) and providing consultation to UNMC personnel working with chemicals to determine the appropriate actions necessary to mitigate a controlled spill.
7. Maintaining a 24/7 on-call spill response contact person to provide guidance oncontrolled spill clean-ups and assist in mitigating controlled spills requiring assistance. Environmental Health and Safety can only assist with spills that require Level C or Level D personal protective equipment (PPE), such as air-purifying respirators and Tyvek suits.
8. Contacting the retained independent spill remediation contractor to provide chemical spill clean-up at the request of the UNMC Incident Commander.
9. At the request of the UNMC Incident Commander, contacting the retained independent industrial hygiene contractor to provide monitoring and guidance for the safe re-entry of UNMC personnel.
10. Consulting with and assisting OFD and independent contractors (ifrequired) on uncontrolled chemical spill clean-up and remediation efforts that necessitate a response in Level A or B PPE, including the use of a self-contained breathing apparatus (SCBA).
11. Consulting with the UNMC Incident Commander, the primary investigator, andindustrial hygiene experts to allow reoccupation of the affected area.
12. Performing a hazardous waste determination on all spill residues.
13. Ensuring that spill residue identified as hazardous waste is transported to a hazardous waste disposal facility in accordance with the EPA and DOT requirements.
14. Determining whether any spill is reportable and making the necessary reports to federal and state entities.
15. Maintaining 24/7 on-call Emergency Coordinators, as required by the EPA, to evaluate chemical spills originating from the UNMC Hazardous Waste Accumulation Building (WAB).
16. Notifying the UNMC Compliance Officer to resolve any improper chemical spill clean-up or non-compliance issues.

3.7 UNMC Compliance Officer

The UNMC Compliance Officer shall be responsible for the following:

1. Assist Environmental Health and Safety in resolving improper spill clean-up.
2. Assist Environmental Health and Safety in resolving non-compliance issues.

3.8 UNMC Facilities

UNMC Facilities shall be responsible for the following:

1. Cutting electricity, gas, or water supplies to affected areas if necessary and safe to do so.
2. Increasing ventilation if necessary.
3. Assisting the incident commander as needed.

3.9 Omaha Fire Department/Hazmat

The Omaha Fire Department's (OFD) Hazardous Materials team has agreed to respond to chemical spills as follows and with the stated provisions:

1. OFD will be called if the spill involves fire or explosion, injured personnel, or forspills larger or more dangerous than EHS can handle.
2. If necessary, OFD will consult with personnel responsible for the area to determine which chemical has spilled and identify any other potential hazards before entering the laboratory.
3. The OFD can respond to spills requiring level A and B PPE (supplied air).
4. The OFD will respond to spills of unknown chemicals but reserve the right not toenter the area unless further identification is provided or determined.
5. Omaha Hazmat can provide further identification, but this may be limited.
6. An outside contractor may be hired to provide further identification.
7. OFD will stop further chemical spillage and contain the spilled material; however, further chemical clean-up and disposal are the requirements of UNMC or an outsidecontractor.

3.10 Spill Remediation Contractor

UNMC EHS has contracted with an outside contractor to provide 24-hour emergency response cleanup and/or remediation of chemical spills that are beyond the scope of OFD services and EHS's limited capabilities. The PI or department responsible for the spill is financially responsible for paying the costs associated with using the spill remediation contractor. UNMC EHS will assist the spill remediation contractor in any way they can and coordinate the disposal of spill debris.

3.11 Industrial Hygiene Contractor

UNMC EHS has contracted with an outside contractor to provide industrial hygiene services. This may be required if there is concern about safe re-entry. The PI or Department responsible for the spill is financially responsible for paying the costs associated with using the industrial hygiene contractor. UNMC EHS will assist the Industrial Hygiene Contractor in any way possible.

3.12 UNMC Environmental Services (EVS)

The UNMC EVS contractor shall be responsible for the following:

1. Cleaning, mopping, and re-waxing (if necessary) floors in spill areas after the chemical spill has been cleaned up and its determined that the area is safe to enter.
2. Assisting with the clean-up of non-hazardous spills.
3. Removing trash generated from a spill, provided it has been deemed non-hazardous.

4. Procedures

To ensure the safety of UNMC personnel who work with and may potentially clean up chemical spills, as well as to ensure compliance with federal regulations and minimize the need for hiring expensive outside contractors, PIs, department chairs, and laboratory personnel must follow these steps.

4.1 Minimizing Spills

- Plan experiments carefully and use only the minimum amount of chemicals necessary.
- Eliminated excess chemicals that are no longer in use. Contact EHS for disposal guidelines.
- Train all personnel working with chemicals on the proper use and potential hazards associated with the chemicals they will be using.
- Keep bench tops, hoods, and walkways clear to prevent potential spills.

4.2 Preparing for a Chemical Spill

- Review the Safety Data Sheets (SDS) of the chemicals used to identify physical and health hazards and consider the material needed to respond to aspill.
- Consider the amount of spilled chemicals that you would be comfortable cleaning up and ensure you have the appropriate supplies to do so. See Attachment 1:Spill Cleanup Reference
- Identify the procedures that are most likely to have the highest spill risk and attempt to minimize or eliminate those risks.
- Minimize ignition sources, especially when using flammable material, and use toxic materials in a fume hood.
- Identify and locate PPE, spill clean-up supplies, fire extinguishers, eyewash stations, emergency showers, first aid kits, and other equipment that would beneeded in the event of a chemical spill.
- Determine the maximum amount of spilled material you are prepared to handle and capable of cleaning and identify the point at which outside assistance would be needed. This can depend on quantities and/or toxicities.

- Train all personnel working with chemicals on the proper spill cleanup.
- Identify evacuation routes and muster points.
- Identify notification procedures for outside assistance. In most cases, this will involve calling UNMC Security/Public Safety at 402-559-5111 (for small, controllable spills) or 402-559-5555 if the spill involves an explosion, fire, or injured personnel.
- Identify procedures for documenting spills and near misses, including those that can be cleaned by yourself.

4.3 Chemical Spill Kits

All laboratories are required to have a chemical spill kit. It is the responsibility of each laboratory to assemble or purchase a spill kit suitable for their own lab. The Brady Universal Yellow Bag Spill Kit (Product #17-111-228) is offered at a discounted price to UNMC through Fisher Scientific in Ariba. Chemical spill kits should be stored at or near the point of chemical waste generation. Additional information can be found here: https://www.unmc.edu/ehs/factsheets/ChemicalSpillKits.pdf

Spill kits must include an inventory of contents, a chemical spill response procedure, and appropriate spill signage, At a minimum, the spill kit should contain the following:

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

Spill kits must be inspected at least once a year to determine the viability of their supplies. Replace supplies if degraded, expired, or removed from the kit for use.

Spill kits must be stored in a readily accessible location near the area where chemical work is performed and ensure that all lab personnel are aware of the kit's location and contents.

4.4 Cleaning up a Chemical Spill

The goal is to minimize the potential for spills and prepare for the event of a chemical spill. Chemical spill kits should be available in laboratory areas where chemicals are used. Labs should also post a copy of the Chemical Spill Emergency Response in their labs. Please reference page 2 of the Chemical Spill Kit Fact Sheet.

Chemical Spill Response Procedure

If any of the following apply, contact Public Safety at 402-559-5555 for assistance.

- Excessive or uncontrollable volume.
- Immediate threat to health or environment
- You are not comfortable or not able to respond to the spill on your own.

Reminder! For chemical exposures (eye, mucus membrane, or skin contact, aerosol inhalation, injury, etc.) use the nearest eyewash or safety shower and/or seek immediate medical attention, as needed.

1 Alert others, evacuate the area.

Post signage.

2 Review chemical SDS for guidance.

Don *all* recommended PPE

3 Cover/contain the spill with absorbent material.

(Spill sock contains spread)

(Spill pad coverage)

4 Collect, secure, & tag waste.

Contact EHS for waste pick up (402) 559-6356
www.unmc.edu/ehs

Use tools to collect broken glass/sharps.

5 If necessary, clean spill area with water or compatible cleaning agent.

Doff PPE & wash hands.

6 Notify your manager/supervisor

For our lab:_____

_____

_____

_____

& complete an incident report within 24 hours.

https://www.unmc.edu/ehs/safety/incident-reporting.html

Additional information can be found in the UNMC Chemical Spill Plan
https://www.unmc.edu/ehs/_documents/UNMCChemicalSpillPlan.pdf

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4.5 Spill Response Types

UNMC EHS classifies spill responses into three categories Controlled Spills, Controlled Spills, requiring assistance, and Uncontrolled Spills. Additional information on spill response types is listed below and can be found here: https://www.unmc.edu/ehs/factsheets/ChemicalSpillResponse.pdf

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

4.6 Unknown Chemical Spills

Spills of unknown material that are reasonably expected to cause serious injury or damage will be treated as uncontrolled spills. Lab personnel must label all chemical containers to minimize the potential expenses associated with cleaning up a spill of unknown material.

4.7 Mercury Spills

In the event of a mercury spill, cordon off the area, keep personnel away, and contact EHS at 402-559-6356 during office hours (Monday through Friday, 7:00 a.m. to 4:30 p.m.) or call Public Safety at 402-559-5111 after hours and weekends.

4.8 Radioactive Material Spills

For radioactive spills, please refer to section B4 of the UNMC Radiation Safety Manual.

4.9 Biological/Infectious Agent Spills

For biological or infectious agent spills, please refer to the UNMC Institutional Biosafety Committee Policy IBC-04, Biological Spill Cleanup.

Information on biological spill kits can be found here:
https://www.unmc.edu/ehs/biosafety/biologicalspillkitguide.pdf

Attachment 1: Spill Cleanup Reference Table

Chemical Spilled	Cleanup
Acids, organic	Apply sodium bicarbonate or acid spill neutralizer. Absorb with a spill pad.
Acids, inorganic	Apply sodium bicarbonate/calcium oxide, sodium carbonate/calcium oxide, or acid spill neutralizer and absorb the spill with a spill pad. **NOTE:** Hydrofluoric acid is an exception to this general practice. See below.
Acid chlorides	Do not use water. Absorb with a spill pad or acid spill neutralizer.
Aldehydes	Absorb with a spill pad.
Aliphatic amines	Apply sodium bisulfite. Absorb with a spill pad.
Aromatic amines	Absorb with a spill pad. Avoid skin contact or inhalation.
Aromatic halogenated amines	Absorb with a spill pad. Avoid skin contact or inhalation.
Azides (potential explosives)	Absorb with a spill pad. Decontaminate with 10% ceric ammonium nitrate solution
Bases (caustic alkalis)	Neutralize with acid or commercial chemical neutralizers, and absorb the spill with a spill pad.
Chlorohydrins	Absorb with a spill pad. Avoid skin contact or inhalation.
Cyanides	Wet or mist the solids before sweeping or use a HEPA filter vacuum to collect them. Absorb liquids with a spill pad.
Halides, organic or inorganic	Apply sodium bicarbonate. Scoop up or absorb with a spill pad.
Halogenated hydrocarbons	Absorb with a spill pad.
Hydrofluoric acid	Absorb with calcium carbonate (or calcium oxide) rather than sodium bicarbonate.The use of sodium bicarbonate will lead to the formation of sodium fluoride, whichis considerably more toxic than calcium fluoride. Be careful when choosing the spill pads used to absorb the acid. Certain pads contain silicates that are incompatible with hydrofluoric acid.
Inorganic salt solutions	Absorb with a spill pad.
Mercaptans/organic sulfides	Neutralize with calcium hypochlorite solution. Absorb with a spill pad.
Nitriles	Sweep up solids. Absorb liquids with a spill pad.
Nitro compounds, organic nitro	Absorb with a spill pad. Avoid skin contact or inhalation.
Oxidizing agents	Apply sodium bisulfite and absorb with a spill pad.
Peroxides (react violently with water)	Absorb with a spill pad.
Phosphates, organic and related	Absorb with a spill pad.
Reducing substance	Apply sodium bicarbonate and absorb with a spill pad.