Lane Community College

Science Division

Chemical Spill Response Plan

Building 16 on the 30th Ave. Campus

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and the Science Safety Committee
3/12/2025

Contents

INTRODUCTION

Small hazardous releases or chemical spills must regularly be dealt with by laboratory staff or instructors. The Chemical Spill Response Plan helps guide employees who are the first line of defense in assessing and containing a chemical spill.

SCOPE

The Chemical Spill Plan for the Science Division provides guidance in the event of a hazardous chemical spill to employees specifically in Building 16 of the 30th Avenue Main Campus of LCC.

Related documents with additional details are the **Standard Operating Procedures*** for:

Carcinogens

Compressed Gases in Laboratories

Corrosives

Flammable Liquids

Carcinogens

Peroxide-Forming Chemicals

Radioactive Minerals and Specimen Handling

Science Division Hazardous Waste Management

Sodium Metal

Standard Microbiological Practice and Biosafety Level 1 Laboratory Work

* These SOPs can be found on the Science Division internal we page - Link

Related documents for Emergency Procedures:

Emergency Response Plan / Hazardous Materials Accident section in COPPS - Link

Employee Emergency Manual - Link

RESPONSIBILITIES

- **Departments, Supervisors, Lab Coordinators, and the Chemical Hygiene Officer** (CHO) are responsible for creating and maintaining a safe work environment including oversight of simple spill response and training of employees who may need to assess and respond to spills.

- **Public Safety / Hazardous Materials (HAZMAT) Team** is responsible for emergency response in the case of complex spills, life- or environment-threatening chemical releases, and when

appropriately trained employees, necessary personal protective equipment (PPE) or required clean-up materials are not available to handle simple spills.

- **First responders** are responsible for initiating written incident reports when required.

- **Employees (experienced laboratory staff)** handling containment of a simple spill are responsible to complete and keep current all required training.

DEFINITIONS

Acronyms

CHO: Chemical Hygiene Officer
PPE: Personal Protective Equipment
SAA: Satellite Accumulation Area
SDS: Safety Data Sheet
SOP: Standard Operating Procedure

Simple Chemical Spill (Incidental Spill):

- Spill **does not affect individuals or the environment**.
- Spill **does not spread**.
- Spill has **low to moderate hazard level**.
- Spill involves **LESS THAN**
    - 1 L of non-volatile chemical – in general
    - 100 mL concentrated acid (See Corrosives SOP)
    - 100 mL concentrated alkaline (See Corrosives SOP)
    - 500 mL flammable liquid (See Flammable Liquids SOP)
- **No one has been exposed** to the chemical or is in reasonable danger of being exposed.
- Appropriate **Spill Response Kit, cleanup materials and PPE are readily available**.
- Faculty or laboratory staff have **sufficient training** to properly clean up the spill.

Complex Chemical Spill:

- Spill can **affect individuals or the environment,** and **requires outside help to clean up.**

Complex Spills can be:

- volatile (flammable or toxic vapors)
- corrosive
- air or water reactive
- of significant quantity (usually more than one liter) that will cause harm to individuals and the environment
- of a greater quantity than the amount of absorbent in the nearest spill kit
- smaller spills that are
    - highly toxic

- carcinogenic (cancer-causing)
- concentrated corrosives
- flammable liquid or metal
- highly reactive or explosive

PROCEDURE FOR EMERGENCY / LIFE-THREATENING SPILLS

1. Evacuate the affected area or building, close all doors, **call Public Safety at (541) 463-5555 (x5555).**
2. Report the location and type of material, if known.
3. Refer to Emergency Response Plan / Hazardous Materials Accident section and Employee Emergency Manual with map if building evacuation is needed.
4. **Individuals who believe they have been exposed to the spilled chemical** by:
    - **contact with skin**:
        i. Remove all contaminated clothing.
        ii. Rinse with water, then wash with soap and water.
        iii. Use emergency shower if large area of body is affected.
    - **contact with eyes:**
        i. Rinse eyes with water for 15 minutes using emergency eye-wash.
    - **inhalation:**
        i. Move outside to fresh air.
    - **Call Public Safety at (541) 463-5555 (x5555) for medical assistance.**
5. Notify supervisor and CHO.
6. Fill out any required reports such as an incident report.

GENERAL CLEAN-UP PROCEDURE FOR ALL SPILLS

1. **Evacuate** students and other staff **from the affected area**.
2. Protect sewer floor drains if possible.
3. **DO NOT** turn off laboratory fume hoods. **Increase ventilation** by opening fume hood sashes.
4. If safe to do so, **identify the chemical and its hazards** by checking its **SDS**.
   Link to LCC's online SDS system: https://lanecc.kha.com
5. **Notify** the Lab Coordinator and/or the CHO.

Life Sciences Lab Coordinator:	Adam Gabay (541) 463-5449
Physical Sciences Lab Coordinator:	Jordan Mohrhardt (541) 463-5048/5497
Chemical Hygiene Officer:	Magdalena Parker (541) 463-5036

6. **Assess** if the spill is simple or complex.
    - **For complex spills**
        - **FIRST Call Public Safety at x5555** or (541) 463-5555
        - **Call Facilities Management & Planning** at (541) 463-5000 or (541) 463-5001 to report location and type of material.

- **For simple spills**, proceed with Step 7.

7. Review **Procedure Details for Specific Chemical Types** in **next section** (flammable, corrosive, toxic, mercury, etc.) and ensure that required spill kit, clean-up materials, and PPE are available. **OR** open a **Science Department Spill Kit** and follow instructions inside (See APPENDIX 1).
8. Don disposable **nitrile gloves, safety goggles,** and other **appropriate PPE**.
9. **Contain or dike the spill** with pigs if needed.
10. **Absorb liquids with cat litter and/or pads.**
11. **Collect solids** and place wastes into appropriate sealable bags or containers.
12. **Label all waste containers** with the following information:
    - Name of the chemical(s) spilled
    - Material used to clean up the spill
    - The words **"Hazardous Waste"**
    - Preferably the hazard warnings from the chemical's SDS
13. For **highly toxic material clean-up**, place contaminated cleanup materials and disposable PPE into sealable bags or containers and include with hazardous waste. Collect contaminated cleaning water in a sealable vessel.
14. Move labeled waste containers to the Satellite Accumulation Area (SAA) in the lab or nearest stockroom (if no SAA available). The CHO and/or Lab Coordinator will arrange for proper disposal.

DETAILS FOR CLEAN-UP OF SPECIFIC CHEMICAL TYPES

Flammable Liquid

1. Extinguish all ignition sources within the common airspace of the spill and avoid any activities that may cause arcing, like switching lights or electrical equipment on or off.
2. Confine fumes by shutting the door to the room.
3. Use non-sparking, fire-retardant cleanup materials. The clean-up materials in the Science Department Spill Kit are appropriate.
4. Place collected wastes in a fume hood or flammables cabinet.
5. Additional Information can be found in the SOP for Flammable Liquids.

Corrosive Liquid (Liquid with pH of 4.0 or lower OR 9.5 or higher)

1. Don rubber gloves over the nitrile gloves for concentrated corrosive spills.
2. Contain the spill by pouring sand or kitty litter in a circle around it.
3. If you are not sure of the corrosivity, check liquid with pH paper.
4. Cover the spill with acid or base neutralizer (whichever is appropriate):
   A. Acid Spill (having a pH of 6.0 or less): Sodium bicarbonate (baking soda), sodium carbonate, and commercial kits designed for acid spills are sufficient for neutralizing many acids.
   B. Alkaline Spill (having a pH of 9.5 or greater): Vinegar, citric acid, sodium bisulfate, and commercial kits designed for alkali or caustic spills are sufficient for neutralizing many bases.

   If neutralizer is not available, cover the spill with absorbent material (pads, vermiculite, kitty litter).
5. Use pH paper to check that acidic or caustic material has been neutralized; pH should be near 7.0. Some of the commercial kits have color indicators to show when a spill has been neutralized.

6. Cover the neutralized spill with absorbent material (kitty litter, vermiculite, or pads).
7. If the spilled chemical(s) is not hazardous for any reason other than corrosivity (i.e. not toxic), once neutralized, the waste can be disposed of in the trash can if solid or down the sink if liquid; **pH of liquid must be between 6.0 and 9.5 to go down sink**. (See SOP for SME Hazardous Waste Management for more detail.)

Toxic or Carcinogenic Chemical

- If not within an exhausted enclosure, evacuate everyone and immediately call **Public Safety at x5555** or (541) 463-5555 **and Facilities Management and Planning** at (541) 463-5000 or (541) 463-5001.
- If in an exhausted enclosure:
    1. Evacuate everyone from the area immediately.
    2. If safe to do so, contain or dike the spill with pigs if needed and apply absorbent such as cat litter.
    3. Close the fume hood sash.
    4. Call Public Safety at **x5555** or (541) 463-5555.

Reactive Material

- If within an exhausted enclosure and safe to do so, confine spill and apply appropriate absorbent.
- Incidents outside of a protective enclosure may require Public Safety / HAZMAT assistance.
- Depending upon reaction products, sensitivity, and other characteristics, response can vary significantly. If you are unsure or don't have proper materials and PPE, call **Public Safety at x5555** or (541) 463-5555 **and Facilities Management and Planning** at (541) 463-5000 or (541) 463-5001.

Biological Spill (Biosafety Level 1)

1. Clear all people away from the spill area.
2. Don appropriate PPE (safety goggles, disposable nitrile gloves, apron or lab coat).
3. Assess personnel involved.
    - If any biohazardous material gets in a person's eyes, flush the eyes at the emergency eyewash for at least 15 minutes.
    - If any biohazardous material gets on a person's skin, wash with soap and water.
4. If there is broken glass, first remove large pieces using tongs, then sweep up smaller shards with a broom and dust pan. Place all glass debris into a biohazard sharps container. The tongs, broom, and dust pan must be chemically decontaminated afterwards.
5. Cover the spill with paper towels twice the size of the spill.
6. Apply disinfectant solution starting from the outside inward and soak the paper towels for 20 minutes or the amount of time recommended by the disinfectant manufacturer.
7. Dispose of the paper towels into the trash.

8. Spray the spill area again with disinfectant and wipe up with paper towels.
9. Properly doff the disposable gloves. Provided that the gloves have been effectively exposed to the disinfectant, they can be disposed of in regular trash; if not, apply ample disinfectant to a paper towel and wipe gloved hands before doffing gloves.
10. Wash hands with soap and water for at least 20 seconds.

Mercury

1. Evacuate everyone from the affected area.
2. Close all doors to the affected area.
3. Call **Public Safety at x5555** or (541) 463-5555.
4. Call **Facilities Management and Planning at x5000** or (541) 463-5000.

Compressed Gas Cylinder Leak

If a compressed gas cylinder leaks and you believe this is dangerous:

1. Evacuate everyone from the area.
2. Confine the fumes by shutting the door.
3. Call **Public Safety at x5555 or (541) 463-5555**
4. Call **Facilities Management and Planning at x5000** or (541) 463-5000.

APPENDIX 1: SPILL KIT INSTRUCTIONS and CONTENTS

Science Department Spill Kit Instructions (for one liter or less **OR** ≤100mL concentrated corrosive **OR** ≤500mL flammable liquid)

1. **Evacuate** everyone from the affected area.
2. **Contact Public Safety** at x5555 or (541) 463-5555 **if the spill is life threatening, reactive, highly toxic, or too large**.
3. **Identify the chemical hazards** if possible, using Safety Data Sheet (SDS). Website: lanecc.kha.edu
4. **Open** the 5-gallon spill kit bucket and remove the spill kit bag.
5. **Don PPE**: goggles, nitrile gloves, and disposable apron.
6. **Isolate spill** with pigs.
7. **For corrosive materials** don rubber gloves over nitrile gloves and locate and use neutralizers as directed.
8. **Soak up** spill with absorbent materials (**pads, cat litter**).
9. **Place all materials containing hazardous chemicals** in appropriately sized **Ziplock bag**(s).
10. **Label bag as "Hazardous Waste"** and identify **chemical contents** and **spill date**.
11. **For small amount of hazardous waste**, place the bag(s) into the Satellite Accumulation Area (SAA) under fume hood. If no SAA available, take to nearest Science Stockroom SAA.
12. **For larger spills** (up to one liter):
    a. Use the 5-gal bucket as a hazardous waste container.
    b. Attach a "Hazardous Waste" label and identify the material contents and spill date.
    c. Place sealed bucket in SAA (under fume hood). If no SAA available, take to nearest Science Stockroom SAA (located under the fume hood).
13. **Remove disposable PPE** and throw into trash if not contaminated with toxic chemical. Place any contaminated disposable PPE in a plastic bag and include with hazardous waste.
14. Place rubber gloves (if used) in plastic bag and seal it.
15. Return goggles, rubber gloves, and all unused spill kit materials to the stockroom and **notify Lab Coordinator and/or Chemical Hygiene Officer** (see other side).

Science Department Spill Kit Contents

	Qty	
☐	**1**	**5-gallon DOT approved plastic bucket with screw lid top**
☐	**2**	**sets of nitrile gloves**
☐	**1**	**set of rubber gloves**
☐	**1**	**disposable apron**
☐	**2**	**absorbent pigs**
☐	**2**	**absorbent pads**
☐	**1**	**gallon of cat litter**
☐	**1**	**mini-broom / dust pan set**
☐	**5**	**1-quart sized Ziplock bags**
☐	**5**	**1-gallon sized Ziplock bags**
☐	**5**	**2-gallon sized Ziplock bags**
☐	**1**	**permanent marking pen**
☐	**2**	**“Hazardous Waste” labels**
☐	**4**	**chemical tape strips**
☐	**1**	**plastic bag to hold all spill kit contents**

Contact Persons:	**Phone Number**	**Email**
Life Science Lab Coordinator:		
_____	_____	_____
Physical Science Lab Coordinator:		
_____	_____	_____
Chemical Hygiene Officer:		
_____	_____	_____

APPENDIX 2: OSHA Regulatory Interpretations

- OSHA Standard Interpretation letter 10/21/1992
    - "An incidental release is a release of a hazardous substance which does not pose a significant safety or health hazard to employees in the immediate vicinity or to the worker cleaning it up, nor does it have the potential to become an emergency. For example, a small amount of a substance considered low in toxicity and released from a valve during a maintenance operation would be considered an incidental release, not an emergency.
    - OSHA does not define the phrase "incidental release" in terms of the levels of personal protective equipment (PPE) used by employees. Incidental releases are defined in terms of the lack of danger or safety and health risks that the release poses to workers. Workers who are exposed to or who clean up incidental spills must have the proper PPE, equipment and training in accordance with OSHA standards."

- OSHA Standard Interpretation letter 7/21/1990
    - "The intent is that spills without emergency consequences are not covered by the emergency response provisions of this standard. As you may be aware, the quantity of product spilled does not by itself determine if an incidental spill has occurred. Several variables, including the volume of the spill, must be considered in evaluating the hazard of the release to employees. Examples of other variables include the type of material spilled and the location of the spill. Other OSHA standards such as the Hazard Communication Standard (29 CFR 1910.1200) would be applicable for incidental spills."

Appendix 3: Important Links

Accident Reporting in COPPS

- *https://inside.lanecc.edu/copps/documents/accident-reporting*

Employee Emergency Manual without map

- *https://www.lanecc.edu/sites/default/files/2023-02/Main%20campus%20for%20web.pdf*

Emergency Plan in COPPS

- *https://inside.lanecc.edu/copps/documents/emergency-plan*

Online Safety Data Sheet (SDS) System

- *https://lanecc.kha.com/*

Moodle-based Science, Math, and Engineering Division Safety Training

- ❖ Log in with L# and find Science, Math, and Engineering Division Safety Training
- ➢ *LaneOnline: Welcome to Moodle (lanecc.edu)*

SME Internal Web Page

- ➢ *https://inside.lanecc.edu/sme*