1. Purpose

The purpose of this document is to provide guidance on the safe and timely response to and/or mitigation of chemical spills while ensuring the safety of people, the protection of property, and the environment.

2. Scope

These guidelines apply to faculty, staff, and students who find a chemical spill, are present when a chemical spill occurs, or are the cause of a chemical spill in all areas owned, leased, or operated by KSU where chemicals are stored, handled, and/or used. These areas include, but are not limited to, laboratories, art studios, engineering shops, maintenance shops, chemical and hazardous wastes storage areas, and KSU grounds.

3. Definitions

a) Minor chemical spill – any chemical spill that meets the following criteria:
   - One (1) liter or less,
   - Spilled material is known.
   - The material is not an immediate fire, life safety, environmental, or health hazard regardless of quantity.
   - Material is not highly toxic, highly reactive chemicals, or elemental/organic mercury (i.e., methyl mercury).
   - The spill can be safely contained and cleaned up with the materials available, and without the assistance of Environmental Health and Safety (EHS) or emergency responders.

b) Major chemical spill – any spill that meets the following criteria:
   - Greater than one (1) liter.
   - The material is an immediate fire, life safety, environmental, or health hazard even in small quantities.
   - Material is highly toxic, highly reactive, or elemental/organic mercury (i.e., methyl mercury).
   - The spill material is unknown.

4. Responsibilities

KSU Personnel and Students

KSU faculty, staff, or students who work in areas where chemicals are used and stored will be expected to clean up minor chemical spills, but only under the following conditions:

- The individual(s) handling the spill are properly trained to do so.
- The individual(s) feel comfortable cleaning the spill.
- The spill can be safely contained and cleaned without causing harm to the individual(s) or bystanders.

- The appropriate personal protective equipment and spill material/spill kit is available for use.

If the employee or student is not able to clean the spill, an effort to contain the spill (i.e., prevent the spread) should be made.

During a major chemical spill event, KSU faculty, staff, or students must leave the area immediately and contact EHS for assistance. They must also be prepared to provide as much information about the chemical spill as possible (e.g., location of the spill, chemical spilled, how much was spilled, any injuries or other issues). If an injury or fire has occurred as a result of the spill, they must contact KSU Police immediately.

KSU Police

During major spill incidents, KSU Police will work with EHS to determine whether the Cobb County HAZMAT team needs to be dispatched. If the HAZMAT team must be dispatched, they will remain onsite until the HAZMAT team arrives. If an injury or fire has occurred as a result of the spill, KSU Police will dispatch the appropriate emergency response team for assistance.

Environmental Health and Safety (EHS)

EHS will work with KSU employees and students, KSU Police and emergency responders during all chemical spill events to determine the best course of action. EHS will assist with the containment and clean-up of chemical spills as needed, conduct hazard assessments to determine the level of risk, and conduct incident investigations to determine root causes and preventative measures.

5. Spill Preparedness

Chemical spills can happen at any time, in any area where chemicals are handled, used, and stored. Spills are usually an unexpected occurrence. Therefore, it is important for employees and students to always be prepared to respond properly, and in a timely fashion. Proper preparation for a chemical spill can reduce chemical exposures and potential health effects to personnel while also reducing the potential impact to the environment and property. The following are some general guidelines for spill preparedness:

- Know the hazards – Always be aware of the chemicals in their work areas and the associated hazards. This information can be learned by reading the safety data sheets (SDS) for each chemical in the area.
- Complete safety training – If you work with chemicals or work in areas where chemicals are used and stored, you must complete all required safety training. It is also prudent to be trained in spill response and clean-up.
- Spill response guidelines – These documents should be written for individual work areas and specific for the chemicals used in the area. Spill response guidelines should be reviewed regularly.
- Spill kit location – Always know where spill kits/spill clean-up materials are located. This will prevent the need to search for these materials if a spill occurs.
- Proper spill kit materials – Ensure that the spill kit contains the materials appropriate for cleaning the materials that are used in the work area. For example, most standard spill kits may contain materials that are safe for cleaning acids, bases, solvents, oils, etc. However, they will likely not contain the appropriate materials for cleaning chemicals such as hydrofluoric acid or mercury. These materials will require a separate spill kit with compatible materials for those spills.
- Keep the spill kit stocked - Ensure that spill kits are kept stocked. When materials are used from the spill kit, always replenish the used materials for future spills.

- Personal protective equipment (PPE) – Ensure that the proper PPE is available in the event of a spill. At minimum, cleaning a spill requires wearing safety goggles, nitrile gloves, and a protective outer garment such as a lab coat, disposable gown, or apron. Glove requirements may vary depending on the spilled material. Chemical glove guides can assist in determining the proper gloves for specific chemicals.

6. Spill Procedures

Minor Chemical Spills

Minor chemical spills can be contained and cleaned up by trained KSU faculty, staff, or students. The following steps are to be followed when responding to a minor spill:

1. Stop work immediately.
2. Inform everyone in the area that there has been a chemical spill.
3. Unless assisting with the clean-up, have everyone move away from the immediate area.
4. Immediately retrieve the appropriate items from the spill kit to contain the spill (i.e., keep it from spreading any further).
    i. Liquids can be contained by dikes, dams or similar barriers such as spill socks.
    ii. If necessary, solid materials can be covered by a compatible material to prevent spread by airflow, wind, rain, or tracking.
5. Don the appropriate PPE (i.e., safety goggles, gloves, and protective outer garment.
6. If the spill involved broken glass, first remove the broken glass with forceps or tongs and discard in a lined, hard walled waste container.
7. For liquid chemical spills:
    i. Cover the chemical spill with the appropriate compatible absorbent pads, loose absorbent, or other absorbent material.
    ii. Allow the spill clean-up materials time to absorb the liquid.
8. For solid chemical spills (e.g., salts, powders, etc.):
    i. Cover the material with a damp (compatible) disposable cloth or absorbent pad.
    ii. Use a dustpan, shovel, or scoop to collect the material.
    Note: Do not sweep materials that are toxic, poisonous, or inhalation hazards to avoid inhalation of dusts.
9. Collect the contaminated spill materials and discard them in a lined, hard walled waste container.
10. Wipe up any remaining residue with a damp absorbent cloth and discard in the waste container.
11. If appropriate, decontaminate the spill area with soap and water or other cleaning materials. Wipe the area with a damp absorbent cloth and discard in the waste container. Allow the area to dry.
12. Decontaminate any tools (e.g., dustpan, forceps, tongs, scoop, etc.) used during the spill clean-up.
13. Doff all PPE and discard into the waste container.
14. Tie the waste container liner in a single knot, close/secure the lid to the container, and label the waste container properly for disposal.

15. Restock (or make a note to restock as soon as possible) the spill supplies used from the spill kit during the clean-up.
16. Log-in to Chematix and create a waste card to have the waste picked up by EHS.

Major Chemical Spills

Major chemical spills can have serious safety implications and can lead to severe injury as they present immediate fire, life safety, environmental, or health hazard, even in small quantities due to the extremely hazardous nature of the materials. This is also the case if it is unknown what the material is. The cleanup of these chemical spills should not be attempted by KSU employees or students. The following steps are to be followed when a major chemical spill occurs:

1. Stop work immediately.
2. Inform everyone in the area that there has been a chemical spill, and that they need to vacate the area.
3. If someone has been injured, assist in ushering the individual to a safe area, but only if it is safe to do so, will not result in further injury to that person, or injury to anyone else.
4. For spills inside of a laboratory:
    a. If the spill occurs inside of a chemical fume hood, close the sash if it can be done safely.
    b. If time permits, activate the purge mode on all chemical fume hoods to increase ventilation.
    c. Turn off heat sources and other hazardous equipment.
5. Close doors and secure the area. If able, post "Do Not Enter" signs on all entrances.
6. If a fire resulted from the spill, activate the fire alarm pull station (i.e., pull the fire alarm).
7. If building evacuation is required, proceed to the designated meeting area outside the building.
8. Contact EHS at 470-578-3321 and KSU Police at ext. 6666.
    a. If the spill resulted in a fire, injuries, KSU Police will dispatch the proper emergency responders.
    b. EHS and KSU Police will determine if the HAZMAT team needs to be dispatched.
9. Be prepared to provide the following information, if available:
    a. Caller's name and contact information.
    b. The location of the spill.
    c. The material that was spilled (e.g., chemical name, concentration, etc.).
    d. The quantity of the material that was spilled.
    e. Any circumstances resulting from the spill (e.g., fire, injury, unconscious individual, fatality, etc.).
10. Remain onsite, but in a safe area in case more information is needed, or until the all-clear notification has been given.

7. Incident Reporting

Chemical spills are considered reportable incidents and must be promptly reported to the area supervisor or manager and to EHS in accordance with the University process for *Incident Reporting and Investigations* (EOSMS-108) through the Reliance system, the University's electronic system for safety incidents reporting and investigation. Prompt and thorough investigation of spills is crucial to identifying their causes so that appropriate actions can be taken to prevent similar occurrences.