

A biohazardous spill is an unintended release of a potentially infectious material (including body fluids such as blood, tissues or organs, and stock cultures) into the work environment. Proper response to such incidents can ensure personnel and community safety while reducing environmental contamination. It is essential that biohazardous spill response is effective and safe. All lab personnel must:

- Implement a spill response procedure required for the specific situation;
- Ensure that spill cleanup materials are available for use;
- Ensure that all personnel are trained to implement the requirements of the spill response procedures.

Biohazard Spill Kits

Have spill kits (supplies) on hand in areas where biohazardous materials are used. Preparation of a spill kit consolidates spill control materials and personal protective equipment in one location. Tailor each spill kit to meet the needs of each work area. Personal protective equipment (PPE) must be selected based on the hazardous materials used. Store kits in a location where individuals can quickly gain access to items needed in the event of a spill. Hazardous materials users should know where to locate the spill kit and how to use the spill response materials contained in the kit.

Composition of a Basic Spill Kit

Container

Obtain a container to hold the kit contents such as a 5-gallon plastic bucket or Rubbermaid™ tub. If a sharps container is not readily available in the lab, it is recommended that one be added to the spill kit.

Personal Protective Equipment (minimum)

- 2 pairs Safety goggles (face shield strongly recommended)
- 2 pairs Nitrile gloves.
- 2 pairs plastic, vinyl or rubber shoe covers.
- 2 disposable lab coats, aprons, or coveralls.

Absorbent Materials

Include universal absorbents such as paper towels, commercial spill pads, pillows, spill socks, and loose absorbents.

Cleanup Tools and Materials

- 3-5 red biohazard waste bags for biohazard spill debris.
- Forceps or tongs for picking up broken glass or other sharps.
- Concentrated Bleach and empty bottle (for making fresh preparation of 10% bleach) or other appropriate disinfectant which is approved EPA registered (make sure it is not expired) for final cleanup.

Biohazardous Spill Procedures

General Guide for Cleaning up all Biological Spills

1. Stop, notify others and isolate the area immediately. Put up signage (e.g. "Biohazard spill – Do not Enter"). Wait 30 minutes for aerosols to settle.
2. Put on appropriate PPE (lab coat, gloves, eye and face protection).
3. Remove any contaminated sharp items (syringes, broken glass, etc.) with forceps or tongs, if applicable, and place into a rigid, puncture-resistant, biohazard sharps container.
4. Place paper towels soaked in 1:10 dilution of household bleach, 5.25% sodium hypochlorite ("chlorox") or an appropriate disinfectant directly on the spill and let soak for 20 – 30 minutes.
5. Wipe up area from the outside in and discard towels in biohazard waste container.
6. Continue wiping area with paper towels soaked in bleach until the spill is completely cleaned.
7. Discard all materials in biohazard waste container.
8. Remove PPE and wash hands thoroughly with soap and water.
9. Report all spills to the supervisor.

Spill in a Biological Safety Cabinet

1. Let the BSC run. Do not turn off.
2. Remove broken glass with forceps, tweezers or other tools and place glass in a sharps container. Do not wipe up broken glass.
3. Cover spill with paper towels.
4. Pour (don't spray) 1:10 dilution of household bleach, 5.25% sodium hypochlorite ("chlorox") or an appropriate disinfectant to contaminated surface by pouring it around the periphery of the spill moving inward. Allow the appropriate contact time (20 – 30 minutes for Chlorox) for the disinfectant and agent. If a drain system is involved, consult the BSC manufacturer's specific instructions regarding decontamination
5. After the contact time, wipe up the spilled material.
6. Reapply disinfectant to the affected area and after the appropriate contact time, wipe up the area. Repeat if necessary. Perform disinfection before removing items
7. After a spill is decontaminated, the area shall be thoroughly cleaned with mild detergent and dried, and decontaminated again with an appropriate disinfectant. Residual contaminants can support the growth and multiplication of microorganisms that can jeopardize experimental results. (Note: Be mindful of the effects bleach has on stainless steel and be ready to follow-up with a thorough ethanol wipe to avoid corrosion.)
8. Segregate contaminated cleanup materials into the appropriate biohazardous waste containers.
9. Remove PPE and wash hands.

Spill in a Centrifuge

1. Close off the area and allow aerosols to settle.
2. Notify others including supervisor.
3. Wait 30 minutes to allow the aerosols to settle.
4. Don appropriate PPE: laboratory coat, safety glasses and Nitrile gloves.
5. Remove rotors and bucket and place in Biosafety Cabinet.
6. Thoroughly disinfect the inside and outside of the centrifuge rotor, cups and accessories and allow proper contact time. After disinfection, move to sink for a thorough rinse, dry thoroughly.

7. Decontaminate all exposed centrifuge and environmental surfaces with an appropriate disinfectant.
8. Segregate contaminated cleanup materials into the appropriate biohazardous waste containers.
9. Remove PPE and wash hands.

Minor Spill Outside of the Biological Safety Cabinet

A spill of lesser volume and/or with agents of lesser pathogenicity, for which cleanup can usually be handled by lab personnel using absorbent materials/ disinfectants routinely kept on the bench or in lab spill kits.

1. Close off the area and allow aerosols to settle.
2. Notify others including supervisor.
3. Assemble all spill cleanup materials and review procedure.
4. Don appropriate PPE: laboratory coat, safety glasses or chemical splash goggles (depending on risk of splashes), Nitrile gloves.
5. Cover spill with paper towels.
6. Pour (don't spray) disinfectant to contaminated surface by pouring it around the periphery of the spill moving inward. Allow the appropriate contact time for the disinfectant and agent.
7. Wipe up spill. Dispose of the waste in the biohazardous waste containers.
8. Re-apply disinfectant to contaminated surface and allow it to stand for proper contact time.
9. Wipe up disinfectant, repeat if necessary.
10. Segregate contaminated cleanup materials into the appropriate biohazardous waste containers.

Major Spill Outside of the Biological Safety Cabinet

- A major spill is one which, in your judgment, could represent a significant environmental risk or serious human health risk as a result of release or exposure,
- and/or is a larger-volume spill of biohazardous agents or recombinant/synthetic nucleic acids which is beyond the capacity and training of lab personnel to safely execute cleanup, and will require cleanup by haz-mat professionals.

1. Presume a contaminated aerosol has been generated. The incident should be treated as a potential exposure.
2. Inform all others in the area that an aerosol may have been generated. All persons shall evacuate the room immediately.
3. Post 'No Entry' sign.
4. Contact EHS for assistance (615-327-6642 or after hours call Security 615-327-6666)
5. Notify the Principal Investigator
6. Remove contaminated clothing, turn exposed area inward, and put in autoclave bag. Wash all exposed skin with disinfectant.
7. Wait 20 minutes to allow dissipation of aerosols by the room ventilation changes.
8. EHS will conduct a risk assessment of the space to determine appropriate PPE and clean-up procedures.

Spill of Human Blood

1. Wear gloves, eye protection, and a lab coat.
2. Collect any sharp objects with forceps or other mechanical device and place in a sharps container. Absorb blood with paper towels and place in a biohazard bag.
3. Using detergent solution, clean the spill site of all visible blood.
4. Spray the spill site with 10% household bleach and allow to air-dry for 15 minutes.
5. After 15 minutes contact time, wipe the area down with disinfectant-soaked paper towels.
6. Discard all disposable materials used to decontaminate the spill and any contaminated personal protective equipment into a biohazard bag.
7. Wash hands with soap and water.