



Contents

1. Composition of a Basic Biological Spill Kit	2
2. Disinfectant Type and Shelf Life	2
3. Exposure Incidents.....	3
4. Blood and Bodily Fluid Spills	3
5. Biosafety Level 1 Spill.....	4
6. Biosafety Level 2 Spill.....	4
7. Spill in a Biological Safety Cabinet.....	5
8. Centrifuge Spills	6



This guide outlines the basic procedures for dealing with exposures and some of the biological spills that may be encountered by the EHS response team in a university setting: blood or other human source body fluids, cultures of infectious agents or those containing recombinant DNA-bearing microorganisms or cells.

Composition of a Basic Biological Spill Kit

The following items should be included at a minimum in the spill kit:

- Concentrated household bleach
- Spray bottle for making 10% bleach solution
- Spray bottle containing 70% ethanol solution
- Forceps, brush and dustpan, or other mechanical devices for handling sharps
- Absorbent pads, socks, paper towels or other suitable absorbent material
- Biohazard bags and zip ties for the collection of contaminated spill cleanup items
- Utility gloves and nitrile gloves
- Face protection (eye wear and mask, or full face shield)
- Sharps container

Disinfectant Type and Shelf Life

Clorox bleach is recommended as a standard disinfectant in this guide, but use of chlorine-based disinfectants is subject to some caveats. Other disinfectants may be used provided the disinfectant is effective against the agents in use at the appropriate dilutions and contact time.

Disinfectants should be registered with the Environmental Protection Agency as “tuberculocidal” to meet the requirements of the Occupational Health and Safety Administration’s Blood borne Pathogens Standard. The EPA list of approved disinfecting agents can be accessed at <http://www.epa.gov/oppad001/chemregindex.htm>

Alcohol disinfectants, such as 70% ethanol is not suitable for decontamination of surfaces when working with human materials. This disinfectant is preferred for decontamination of surfaces where corrosion is a concern (e.g. biological safety cabinet, centrifuge rotor).

Chemical disinfectants vary in how long they last (shelf life). In general, concentrated disinfectants will have a longer shelf life than diluted solutions, unless specifically engineered to overcome this limitation, such as “Bleach-Rite”. Undiluted Clorox regular household bleach has a shelf life of 1 year. A fresh batch of 10% bleach solution loses effectiveness after 1-2 weeks. Bleach-Rite 10% bleach solution has a shelf life of 18 months. Imperative user verifies manufacture / expiration date prior to disinfecting.



Exposure Incidents

Exposures are any eye, nose, mouth or parenteral contact with potentially infectious materials or recombinant DNA – containing materials.

- Needle sticks / puncture wounds / cuts or scrapes coming into contact with infectious materials:
 - Wash the affected area with antiseptic soap and warm water for several minutes, then treat with antiseptic. Seek medical attention as necessary; if exposure involves Biosafety Level 2 or human source biological materials, always seek medical attention.
- Mucous membrane exposure:
 - Flush the affected area for 15 minutes using an eyewash station. Seek medical attention as necessary; if exposure involves Biosafety Level 2 or human source biological materials, always seek medical attention.
- Report all exposures to your supervisor. Information to include is type of materials involved, status of person(s) exposed (student, staff, faculty), route(s) of exposure.

Blood and Body Fluid Spills

For blood or other material with a high organic content and low concentration of infectious microorganisms:

- Notify others in the area, to prevent contamination of additional personnel and environment.
- Obtain Biological Spill Response Kit from DBH-264.
- Don disposable gloves, safety glasses, and closed-toe shoes (Face shield should also be utilized for large spills with potential for splashes.)
- Collect sharp objects with forceps or other mechanical device and place in sharps container.
- Wipe up the spill using paper towels or other absorbent material. Use detergent and scrubbing to remove all visible signs of blood. Place waste into red biohazard bag.
- Spray the spill site with 10% bleach or other suitable disinfectant and allow to air-dry for 20 minutes. Note: Bleach-Rite solution only requires a contact time of 5 minutes. Alternatively, disinfectant soaked paper towels can be placed over spill site.
- Wipe up remaining bleach solution.
- Discard all disposable materials used to decontaminate the spill and any contaminated personal protective equipment into red biohazard bag and place in biohazard bin at SHCC or DBH loading dock. The waste bin combination at DBH loading dock is 1-4-7-5. See BSL 2 Waste SOP for additional details.
- Remove gloves and wash your hands with soap and water.
- Inform department personnel when cleanup is complete.



Biosafety Level 1 (BSL-1) Spill

- Notify others in the area, to prevent contamination of additional personnel and environment.
- Obtain Biological Spill Response Kit from DBH-264.
- Don disposable gloves, goggles, lab coat and closed-toe shoes (Face shield should also be utilized for large spills with potential for splashes.)
- Pickup any pieces of broken glass with forceps and place in sharps container.
- Cover spill with paper towels or other absorbent material sufficient to absorb liquid.
- Using mechanical means, scoop up the absorbed spill with brush and dust pan.
- Pour or spray disinfectant around the spill allowing it to mix with the spilled material. Alternatively, disinfectant soaked paper towels can be placed over spill site. Allow at least 10 minutes of contact time.
- Discard all disposable materials used to clean up the spill into municipal waste.
- Wash hands with soap and water.
- Inform lab personnel when cleanup is complete.

Biosafety Level 2 (BSL-2) Spill

- If agent poses an inhalation risk, notify everyone to evacuate room immediately. Most agents used at BSL-2 are not airborne pathogens. Close door, and post with a warning sign.
- Allow aerosols to disperse for 30 minutes before reentering laboratory (If applicable).
- Obtain Biological Spill Response Kit from DBH-264.
- Don disposable gloves, goggles, lab coat, closed-toe shoes and shoe covers if necessary (Face shield should also be utilized for large spills with potential for splashes.)
- Depending on the nature of the spill, it may be advisable to wear an N-95 filtering face piece. The N-95 face piece should be worn if there is an airborne hazard present, and only by those who have met the requirements of CSUF Respiratory Protection Program.
- Pick up any sharp objects with forceps and discard in a sharps container. Smaller pieces of glass may be collected with cotton or paper towels held with forceps.
- Cover spill with paper towels or other absorbent material sufficient to soak up liquid.
- Using mechanical means, scoop up the absorbed spill with brush and dust pan and discard into red biohazard bag.
- Carefully pour or spray disinfectant on and around the spill avoiding enlarging the contaminated area. Alternatively, disinfectant soaked paper towels can be placed over spill site. Allow at least 20 minutes of contact time.
- Spray and wipe surrounding areas (where the spill may have splashed) with disinfectant and wipe up with paper towels. Place all contaminated paper towels and any contaminated clothing into a biohazard bag.
- Remove and discard gloves, then wash hands and exposed skin areas with soap and water.
- All BSL-2 waste is to be disposed at biohazard waste bin located at DBH loading dock. Lock combination is 1-4-7-5. See BSL 2 Waste SOP for additional details.
- Inform lab personnel when cleanup is complete.



Spill within a Biological Safety Cabinet (BSL-2)

- Notify others in the area, to prevent contamination of additional personnel and environment. Post warning signage on Biological Safety Cabinet (BSC).
- Obtain Biological Spill Response Kit from DBH-264.
- Don disposable gloves, goggles, lab coat, and closed-toe shoes.
- Leave BSC blower on.
- Obtain suitable disinfectant. A 70% ethanol solution is recommended for BSCs due to corrosive properties of chlorine. If a bleach solution is used on bare metal surfaces, then the surface must be followed by a rinsing of water or 70% ethanol after allowing appropriate contact time to prevent corrosion.
- Pick up any sharp objects with forceps and discard in a sharps container. Smaller pieces of glass may be collected with cotton or paper towels held with forceps.
- Cover area of the spill with paper towels or other suitable absorbent material sufficient to soak up the liquid (Do not use powder absorbent while BSC blower is on.)
- Using mechanical means, pick up the absorbed spill and discard into red biohazard bag.
- Carefully pour or spray disinfectant on and around the spill avoiding enlarging the contaminated area. Alternatively, disinfectant soaked paper towels can be placed over spill site. Do not place your head in the cabinet to clean the spill, keep your face behind the view screen.
- If necessary, flood the work surface as well as the drain pans and catch basins below the work surface with disinfectant. Be sure the drain valve is closed before flooding the area under the work surface.
- Wipe cabinet walls, work surfaces, and inside the view screen with disinfectant.
- Lift the front intake grill and work surface; wipe all surfaces with disinfectant. Be sure no paper towels or soiled debris are blown into the area under the spill tray.
- Allow disinfectant contact time of at least 20 minutes when using bleach solution.
- If the work surface, as well as drain pans and catch basins under the work surface have been flooded, soak up disinfectant on work surface. Place container under the drain valve and drain the disinfectant under the work surface into a container.
- Perform final wipe of disinfected areas to remove residual disinfectant.
- Collect all cleanup materials into red biohazard bag.
- Remove and discard gloves, then wash hands and exposed skin areas with soap and water.
- All BSL-2 waste is to be disposed at biohazard waste bin located at DBH loading dock. Lock combination is 1-4-7-5. See BSL 2 Waste SOP for additional details.
- Inform lab personnel when cleanup is complete.



Centrifuge Spills (BSL-2)

- If spill is identified in a centrifuge immediately after a run, carefully close the lid and do not re-open for at least 30 minutes. Post warning signage on equipment.
- Obtain Biological Spill Response Kit from DBH-264.
- Don disposable gloves, goggles, lab coat, closed-toe shoes and shoe covers if necessary (Face shield should also be utilized for large spills with potential for splashes.)
- If feasible, transfer rotors and buckets to a BSC. Utilize a tub or other suitable secondary containment when transporting equipment. Contact Biology technician if assistance is required to safely disassemble equipment.
- Carefully retrieve any broken glass from inside the centrifuge using forceps and discard into a sharps container. Smaller pieces of glass may be collected with cotton or paper towels held with forceps.
- Spray rotor and /or bucket with 70% ethanol, quaternary ammonium compound, or other non-corrosive disinfectant effective against the agent in use. Intact tubes may be wiped down and placed into a new container.
- Carefully wipe the inside of the centrifuge with disinfectant soaked paper towels.
- Perform final wipe of rotor and centrifuge to remove residual disinfectant.
- Collect all cleanup materials into red biohazard bag.
- Remove and discard gloves, then wash hands and exposed skin areas with soap and water.
- All BSL-2 waste is to be disposed at biohazard waste bin located at DBH loading dock. Lock combination is 1-4-7-5. See BSL 2 Waste SOP for additional details.
- Inform lab personnel when cleanup is complete.