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## **PURPOSE**

To protect the people, animals and the environment from contamination of a biological agent.

## **BIOLOGICAL SPILLS**

A spill kit should be kept in each laboratory where work with microorganisms is conducted. Basic equipment is: diluted disinfectant (such as 10% chlorine bleach), a package of paper towels, household rubber gloves, autoclave bags, sharps container, and forceps to pick up broken glass.

## **GENERAL SPILL CLEANUP GUIDELINES**

- A. Wear gloves, lab coat, and safety glasses.
- B. Use forceps to pick up broken glass and discard into sharps container.
- C. Cover spilled material with paper towels.
- D. Add diluted disinfectant in sufficient quantity to ensure effective microbial inactivation.
- E. Allow a 30-minute contact for disinfection.
- F. Dispose of towels in biohazard waste container.
- G. Wipe spill area with diluted disinfectant.
- H. Wash hands with soap and water when finished.

## **SPECIFIC SPILL CLEANUP GUIDELINES**

### **A. Spill of BSL1 material:**

1. Wearing gloves and a lab coat, pick up broken glass with forceps and place in sharps container.
2. Absorb the spill with paper towels or other absorbent material.
3. Discard these contaminated materials into biohazard waste container.
4. Wipe the spill area with the appropriate dilution of a disinfectant effective against the organism.
5. Autoclave all towels, gloves, and other materials worn or used to clean up the spill.
6. Wash hands with soap and water.

### **B. Spill of Human Blood:**

1. Wear gloves and lab coat to clean up spill.
2. If broken glass is present, use forceps to pick up and place in sharps container.
3. Absorb blood with paper towels and discard in biohazard waste container.
4. Wet spill area with disinfectant, allow 30 minute contact time and wipe up.
5. Using a detergent solution, clean the spill site of all visible blood.
6. Wipe the spill site with paper towels soaked in a disinfectant such as bleach diluted 1:10 (vol/vol).



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7. Discard all contaminated materials into biohazard waste container.
8. Wash hands with soap and water.
9. Inform PI and Biosafety Officer of spill.

**C. Spill of BSL2 material:**

1. Keep other workers out of the area to prevent spreading spilled material.
2. Post warning sign, if needed.
3. Remove contaminated clothing and put into a biohazard bag for decontamination later.
4. Wash hands and exposed skin and inform the PI of the spill. Call the Biological Safety Officer at 742-3876 for assistance, if necessary.
5. Put on protective clothing (lab coat, gloves and if needed, face protection and shoe covers) and assemble clean-up materials (disinfectant, autoclavable container or bag, forceps, sharps container, and paper towels).
6. Pick up broken glass with forceps and dispose into sharps container.
7. Cover the spill with paper towels and add appropriately diluted disinfectant.
8. After at least 30 minutes contact time, pick up the paper towels and re-wipe the spill area with diluted disinfectant.
9. Collect all contaminated materials into biohazard waste container and autoclave.
10. Wash hands with soap and water.

**D. Spill in a Biological Safety Cabinet:**

1. Leave the cabinet turned on.
2. Wearing gloves and lab coat, spray or wipe cabinet walls, work surfaces, and equipment with disinfectant such as 70% ethanol. If necessary, flood work surfaces, as well as drain pans and catch basins below the work surface, with disinfectant. Allow 30 minutes contact time.
3. Soak up the disinfectant and spill with paper towels, and drain catch basin into a container. Lift front exhaust grille and tray, and wipe all surfaces.
4. Ensure that no paper towels or solid debris are blown into area below the grille.
5. Surface disinfect all items that may have been spattered before removing them from the cabinet.
6. Discard all clean-up materials into biohazard waste container. Wash hands and exposed skin areas with soap and water.
7. The Biosafety Officer should be notified if the spill overflows into the interior of the cabinet. It may be necessary to do a more extensive decontamination of the cabinet.

**E. Spill of Biological Radioactive Material**

1. Preparation for Clean-up:
  - a. Evacuate the room. Close the door, and post a warning sign.



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- b. Remove contaminated clothing, turn exposed area inward, and place in a biohazard bag.
  - c. Wash all exposed skin with soap or handwashing antiseptic, followed by a three-minute water rinse.
  - d. Inform the PI, Biological Safety Officer and the Radiation Safety Officer 742-3876 of the spill, and monitor all exposed personnel for radiation.
  - e. Allow aerosols to disperse for at least 30 minutes before reentering the laboratory. Assemble clean-up materials (disinfectant, autoclavable containers, forceps, paper towels, sharps container).
  - f. Confirm with the Radiation Safety Office that it is safe to enter the lab.
2. Clean-up of Biological Radioactive Spill:
- a. Put on protective clothing (lab coat, surgical mask, gloves, and shoe covers).
  - b. Depending on the nature of the spill, it may be advisable to wear a HEPA filtered respirator instead of a surgical mask. In setting up your spill plan, contact EH&S for advice since the use of respirators requires prior training, fit-testing, and medical approval.
  - c. Pick up any sharp objects with forceps and put in a sharps container labeled according to Radiation Safety guidelines.
  - d. Cover the area with paper towels, and carefully pour diluted disinfectant around and into the spill. Avoid enlarging the contaminated area. Use additional disinfectant as it becomes diluted by the spill. Allow at least 30 minutes contact time.
  - e. **DO NOT USE BLEACH SOLUTIONS ON IODINATED MATERIALS: RADIOIODINE GAS MAY BE RELEASED. INSTEAD, USE AN ALTERNATIVE DISINFECTANT SUCH AS AN IODOPHOR.**
  - f. Wipe surrounding areas where the spill may have splashed with disinfectant.
  - g. Absorb the disinfectant and spill materials with additional paper towels, and place into an approved radioactive waste container. Keep separate from other radioactive waste.
  - h. **DO NOT AUTOCLAVE CONTAMINATED WASTE UNLESS APPROVED BY THE RADIATION SAFETY OFFICER.**
  - i. Disinfect contaminated protective clothing prior to disposal as radioactive waste.
  - j. Place contaminated items on absorbent paper and scan for radioactivity. If none is detected, dispose of these items as biohazard waste.
  - k. If radioactive, spray with disinfectant and allow a 30 minute contact time.
  - l. Wrap the items inside the absorbent paper and dispose of as radioactive waste.
  - m. Wash hands and exposed skin areas with soap and water, and monitor personnel and spill area for residual radioactive contamination. If skin



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contamination is detected, repeat decontamination procedures under the direction of the Radiation Safety Officer. If spill area has residual activity, determine if it is fixed or removable and handle it accordingly.

## **ILLNESS OR INJURY INVOLVING BIOLOGICAL MATERIALS**

### **A. For Severe Injuries:**

1. Call 9911 or 911, as appropriate, for assistance and transportation to the nearest emergency room. Accompany the injured person to the medical facility and provide information to personnel about the accident/exposure. Report the accident to the PI and Environmental Health and Safety.

### **B. For Splash to the Eye:**

1. Use an emergency eyewash to immediately flush the eye with a gentle stream of clean, temperate water for 15 minutes. Hold the eyelid open. Be careful not to wash the contaminant into the other eye.
2. Contact the most convenient local emergency room to obtain care. Report the accident to the PI and Environmental Health and Safety, and seek additional medical assistance if necessary.

### **C. For Contamination to the Body:**

1. Immediately remove contaminated clothing and drench skin with water. Wash with soap and water, and flush the area for 15 minutes. Contact the most convenient local emergency room to obtain care.
2. Report the injury to the PI and to the Environmental Health and Safety, and seek additional medical assistance if necessary.

### **D. Fires Involving Biological Materials**

1. Without placing yourself in danger, put biological materials in a secure location, such as an incubator or freezer.
2. Activate the building fire alarm.
3. Leave the building at once.
4. Call the fire department from a safe location.
5. Meet the fire department outside and direct them to the fire.