


# Managing Biological Spills

Environmental Health & Safety

## SOP No. 8.2

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### PURPOSE

This SOP describes appropriate procedures for addressing spills that occur outside of a biological safety cabinet (BSC). Each laboratory has unique combinations of hazards and thus requires laboratory-specific procedures for controlling spills. Spills that occur within a BSC are considered "contained," and are described in a separate SOP. This SOP addresses uncontained biological spills.

### NOTES

Materials to address a spill always need to be available in the laboratory where work is being conducted.

If for some reason, you do not feel confident in addressing a spill, contact EHS.

The container from the spill kit provided by EHS is a great container to use if broken glass is involved. Apply a biohazard sticker and submit a waste request for pick up.

### PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) varies with the task and laboratory biosafety level. At minimum, the following shall be worn while working with biological materials:

- a laboratory coat (barrier style is best)
- safety glasses, and
- disposable gloves

A barrier-style coat snaps to the neck and has knit cuffs at the bottom of the sleeves. Gloves should be worn over the cuffs. Additional PPE such as double gloves, surgical mask or respirator (fit-testing required) may be utilized when it is warranted by procedures, materials or operational biosafety level. Contact EHS if you have questions regarding appropriate PPE.

Remove contaminated PPE prior to addressing a spill and don fresh PPE. Do not neglect your shoes. Chances are, if the spill occurred in your immediate area that your shoes are contaminated.

## **MATERIALS**

### **Biological Spill Kit**

- fresh disinfectant
- forceps, tongs and/or other tool(s) to remove broken glass
- rigid container to collect broken glass
- absorbent materials (paper towels, pig pads, dams, specialty absorbent powders for biological materials)

### **Personal Protective Equipment**

- clean lab coat
- fresh gloves
- eye protection
- household rubber gloves if desired

## **PROCEDURE**

### **First, address contamination to yourself.**

1. Alert others working that a spill has occurred.
2. If your lab coat and gloves were contaminated in the spill, remove them starting with donning fresh gloves. If your lab coat is contaminated, have a coworker help remove your contaminated PPE. If working independently, apply clean gloves, remove your coat turning the exposed surface to the inside, place in a biohazard bag and thoroughly wash the affected area(s) of your skin with soap and water.
3. Seek medical attention if needed and report the incident immediately to the PI and EHS.
4. Evacuate the immediate area (10-foot radius) of the spill for a minimum of 20 minutes. In some laboratories, this may be the entire laboratory space.
5. If no personal injury is involved, don clean PPE and resume addressing the spill.

### **Second, address the spill.**

1. Cover spilled material with paper towels. Be mindful that the spill radius is likely much larger than what it appears to be. Do not neglect furniture, equipment and vertical surfaces (cabinets, walls, doors). If biological fluid solidifiers such as BioSorb or SaniSorb are used, follow the manufacturer's instructions.
  - If broken glass is present, attempt to remove it using mechanical means and place it directly in a rigid container for autoclaving. If the spill radius is too large to attempt glass removal, proceed with step 1 and use tongs or other mechanical means to address the cleanup.
2. Starting at the perimeter, flood the paper towels with fresh disinfectant in sufficient quantity to ensure effective microbial inactivation. Pour the disinfectant over the paper towels; avoid spraying/squirting as this can aerosolize the biological material.
  - Be sure to use an appropriate disinfectant for the spilled material. Ethanol and/or isopropanol are not appropriate as a primary disinfectant.

3. Allow adequate contact time as described on the label. Allow 10-20 minutes if bleach is used. If using bleach, contact time varies with the agent, it's concentration and the presence of other organic matter. An extended contact time may be necessary if the spill involves material with a high organic content.
4. Leave the immediate area while waiting for contact time to pass. Safely remove PPE and wash hands before leaving the laboratory.
5. Don fresh gloves. The same lab coat may be worn if not contaminated in the previous step.
6. Dispose of absorbent materials in biohazard waste container to be autoclaved unless bleach is used.
7. Disinfect spill area again with diluted disinfectant and allow adequate contact time. Do not neglect vertical surfaces. It is prudent to mop the lab floor in the area of the spill.
8. Remove lab coat. Autoclave lab coats or soak in 1:10 bleach solution to disinfect. Remove gloves and place in biowaste.
9. Wash hands thoroughly with soap and water when finished. Don clean PPE before continuing work.
10. Submit a SCAN report <http://www.depts.ttu.edu/ehs/about/scan.php>. If the spill involves recombinant/synthetic nucleic acids or risk group 2 agents or higher, EHS must be notified immediately.

### **EMERGENCY PRE-PLANNING**

Contact EHS at 742-3876 during business hours or 742-3328 during non-business hours if you are not confident managing a spill.

Submit a SCAN report detailing the incident. If the incident involved personnel exposure to recombinant/synthetic nucleic acids or risk group 2 agents or higher, EHS must be notified as soon as physically possible.

### **REFERENCES**

Section B6.2 from the University Laboratory Safety Manual.

**AKNOWLEDGEMENT OF PROFICIENCY**

The individuals below have been trained and are competent in completing the above procedure.

Worker Name	Worker Signature	Date	Supervisor Initial	Date