# BI Emergency Procedure Policy – Spills, Biohazardous

1. This policy outlines procedures for biohazardous spills.
   1. For hazardous spills, refer to the BI Spill Policy – Spills, Hazardous.
   2. For other emergency procedures, refer to BI Emergency Procedures Policies.
2. Prior to working with biohazardous materials, users must be familiar with the relevant SDS/PSDS and risk assessments, PPE requirements, and handling, decontamination, and emergency procedures and ensure the appropriate disinfectant(s) are readily available.
3. Users must wear the appropriate PPE when working with biohazardous materials, and when cleaning up a biohazardous spill.
4. Users should only clean up minor spills if they are comfortable and if it is safe to do so. They should seek assistance from BI staff, or McMaster Security, as needed.
5. Spills must be cleaned up promptly. For absorbent materials, such as cardboard, that become contaminated in a spill, the material must be disposed of according to the spill type. Seek assistance from BI staff as needed.
6. Users must inform their supervisor, BI staff, and McMaster safety offices of all incident and emergency situations, including spills, via the completion of a McMaster Injury/Incident Report. If the instance involves hazardous or biohazardous materials, attach the SDS/PSDS.
7. BI staff will complete a McMaster Incident/injury Report co-currently to user incident reports.
8. For disposing of biohazardous waste resulting from a spill and its clean up, refer to the BI Waste Disposal Policy – Biohazardous Waste.

## Biohazardous Spill Kit

1. Each BI laboratory has a biohazardous spill kit in a designated location (usually under a sink). Biohazardous spill kits contain gloves, adsorbent material, bleach, plastic bags, biohazardous spill policy and spill notice signs.
2. BI culture laboratories where biohazardous agents are handled house 70% ethanol and bleach. Refer to the BI Biohazardous Work Policy.
3. Each BI laboratory is equipped with a hazardous spill kit, housed in a large yellow tub. Spill kits contain goggles, gloves, absorbent material and tube/sock, and disposal bags. Some BI laboratories have neutralizing agents.
4. It is the BI User’s responsibility to be familiar with spill kit locations and spill clean up procedures as specified in the SDS/PSDS.
5. BI Users should not attempt to clean up spills that are beyond the spill kit capacity.
6. After using items from a spill kit, users must notify BI staff. BI staff will replace depleted or damaged spill kit items as needed.

## Biohazardous Spill Assessment

1. In the event of a biohazardous spill, move away from the spill and determine if the spill is minor or major, if there are aerosol risks, if it is inside/outside of a containment zone, or if the spill has contaminated anyone (e.g. direct exposure).
2. Ensure the appropriate disinfectant(s) are available. Disinfectants must be effective against the biohazardous agent given agent concentration and contact time. Generally, 20% bleach solutions for a contact time of 30 minutes are appropriate; refer to the biohazardous material’s SDS/PSDS for specific protocols.

### Biohazardous MINOR spill criteria

1. The spill amount is safe to clean up. There is no aerosol risk.
2. The spill is easily contained from drains, ignition sources, and incompatible materials and there is NO potential for release into the environment.
3. There is NO immediate danger to life or health.
4. There is NO likelihood of fire or explosion.
5. The appropriate PPE IS available, and the user is appropriately fit tested and trained in its use.
6. The appropriate spill kit and disinfectant(s) are available, and the user knows how to use them properly.

### Biohazardous MAJOR spill criteria

1. The spill amount is NOT safe to clean up. There is an aerosol risk.
2. There IS a potential for the spill to release into atmosphere, discharge to sewer, leak into soils or surface water.
3. There IS immediate danger to life or health.
4. There IS likelihood of a fire or explosion.
5. Appropriate PPE is NOT available, and the user has NOT been fit tested or trained on its use.
6. The appropriate spill kit and disinfectant(s) are NOT available.

## Biohazardous Spill Procedures – Minor Spills

### Minor Spill *outside* Containment Equipment – No Aerosol Risk

1. For a small spill outside containment equipment, that does not pose an aerosol risk, stop working immediately.
2. Discard any contaminated PPE (e.g. gloves, lab coat) into a plastic bag either for decontamination or disposal via solid biohazardous waste.
3. Wash hands with soap and water.
4. Alert people in area; post signs. Notify supervisor. Alert BI staff. Don PPE anew.
5. Bring the appropriate Spill Kit, absorbent material and/or other necessary materials to the site of the spill. Consult the relevant SDS/PSDS as needed.
6. Contain spill and prevent its spread. Remove padded tube/sock and place around drain to prevent spill from entering. Cover the spill with absorbent material (e.g. pads, cloth or paper towels). Work from the outside to the centre of the spill.
7. Pour an appropriate amount of disinfectant over absorbent material for an appropriate amount of disinfectant contact time (e.g. 20% bleach for 30 minutes; refer to relevant SDS/PSDS). Add more absorbent material if needed.
8. Work from the outside to the centre of the spill.
9. Do not handle sharps; use the appropriate handling equipment (e.g. dustpan/broom, forceps).
10. Dispose of contaminated materials into a plastic bag either for decontamination or disposal via the appropriate biohazardous waste channel.
11. Disinfect the spill area again, the surrounding area and any contaminated equipment with the appropriate disinfectant. Use more absorbent material if needed. Dispose of contaminated materials into a plastic bag either for decontamination or disposal via the appropriate biohazardous waste channel.
12. If using corrosive chemicals such as sodium hypochlorite or bleach, follow decontamination by rinsing the affected area with water (3x). Use more absorbent material if needed. Dispose of contaminated materials into a plastic bag either for decontamination or disposal via the appropriate biohazardous waste channel.
13. Any reusable items or tools (e.g. dustpan/broom, forceps) utilized in the clean-up procedure must be decontaminated appropriately (e.g. 20% bleach for 30 minutes; refer to relevant SDS/PSDS).
14. Users must notify supervisor(s), BI staff and relevant McMaster safety offices of spill occurrences and complete a McMaster Injury/Incident Report.
15. For disposing of biohazardous waste resulting from a spill and its clean up, refer to the BI Waste Disposal Policy – Biohazardous Waste.
16. Inform BI staff if Spill Kit items need replacement.

### Minor Spill *inside* Containment Equipment (e.g. BSC) – No Aerosol Risk

1. For a small spill inside containment equipment, such as a BSC, that does not go past the air curtain grill, stop working immediately.
2. Leave the BSC ON with the sash at the recommended height.
3. Discard any contaminated PPE (e.g. gloves, lab coat) into a plastic bag either for decontamination or disposal via solid biohazardous waste.
4. Wash hands with soap and water.
5. Bring the appropriate Spill Kit, absorbent material and/or other necessary materials to the site of the spill. Consult the relevant SDS/PSDS as needed. Don required PPE anew.
6. Cover the spill with absorbent material (e.g. pads, cloth or paper towels) to contain it. Work from the outside to the centre of the spill.
7. Pour an appropriate amount of disinfectant over absorbent material for an appropriate amount of disinfectant contact time (e.g. 20% bleach for 30 minutes; refer to relevant SDS/PSDS). Add more absorbent material if needed.
8. Dispose of contaminated materials into the appropriate BSC waste container(s).
9. Do not handle sharps; use the appropriate handling equipment (e.g. forceps).
10. Disinfect the spill area again, the surrounding area and any contaminated equipment with the appropriate disinfectant. Use more absorbent material if needed. Dispose of contaminated materials into the appropriate biohazardous BSC waste container(s).
11. If using corrosive chemicals such as sodium hypochlorite or bleach, follow decontamination by rinsing the affected area with water (3x). Use more absorbent material if needed. Ensure the work surface is dry. Dispose of contaminated materials into the appropriate BSC waste container(s).
12. Disinfect with 70% ethanol.
13. Insect the grills and catch basin. If the spill entered the catch basin, inform BI staff. BI staff will clean and disinfect the catch basin as needed.
14. Any reusable items or tools (e.g. dustpan/broom, forceps) utilized in the clean-up procedure must be decontaminated appropriately (e.g. 20% bleach for 30 minutes; refer to relevant SDS/PSDS).
15. Always inform BI staff of spill(s) and cleanup procedure(s).
16. For disposing of biohazardous waste resulting from a spill and its clean up, refer to the BI Waste Disposal Policy – Biohazardous Waste.
17. Inform BI staff if Spill Kit items need replacement.

### Minor Spill *inside* Containment Equipment (Centrifuge) – No Aerosol Risk

1. If **breakage occurs or is suspected while centrifuging**, stop centrifugation, leave centrifuge closed and allow an appropriate amount of time for aerosols to settle (e.g. 30 minutes; refer to biohazard agent SDS/PSDS). Do not turn off equipment. Consult relevant SDS/PSDS as needed and don the appropriate PPE. Open the door to the centrifuge if/when safe.
2. If **breakage is discovered upon opening** the centrifuge, close the door immediately and allow an appropriate amount of time for aerosols to settle (e.g. 30 minutes; refer to biohazard agent SDS/PSDS). Do not turn off equipment. Consult relevant SDS/PSDS as needed and don the appropriate PPE. Open the door to the centrifuge if/when safe.
3. If **the spill is contained in a centrifuge bucket**, remove the bucket from the centrifuge and soak it, along with the tube and insert, in the appropriate disinfectant for an appropriate amount of disinfectant contact time (e.g. 20% bleach for 30 minutes; refer to relevant SDS/PSDS). Dispose of contaminated materials according to the BI Waste Disposal Policy – Biohazardous Waste. Do not handle sharps; use the appropriate handling equipment (e.g. forceps). Any reusable items or tools (e.g. dustpan/broom, forceps) utilized in the clean-up procedure must be decontaminated appropriately (e.g. 20% bleach for 30 minutes; refer to relevant SDS/PSDS). If using corrosive chemicals such as sodium hypochlorite or bleach, follow decontamination by rinsing the affected area with water (3x) and dry. Spray the bucket and insert with 70% ethanol. Notify BI Staff.
4. If **the spill is in the centrifuge chamber**, apply absorbent materials to the spill. Do not pour liquid into the chamber. Seek assistance from BI Staff.
5. Users must notify supervisor(s), BI staff and relevant McMaster safety offices of spill occurrences and complete a McMaster Injury/Incident Report.

## Biohazardous Spill Procedures – Major Spills

### Major Spill *inside* Containment Equipment (BSC) - Aerosol Risk

1. When a biohazardous spill inside a BSC poses an aerosol risk, stop working immediately.
2. Leave the BSC ON with the sash at the recommended height.
3. Discard any contaminated PPE (e.g. gloves, lab coat) into a plastic bag either for decontamination or disposal via solid biohazardous waste.
4. Inform individuals in the affected room they are to stop working and MUST leave immediately due to a biohazard spill with aerosol risk.
5. Individuals must remove and discard of PPE appropriately, wash hands and leave the lab. Post “DO NOT ENTER – Biohazard Spill” signs at closed entry points.
6. Users must notify supervisor(s), BI staff and relevant McMaster safety offices of spill occurrences and complete a McMaster Injury/Incident Report. Be prepared to provide details of the spill and nature of biohazardous agent (e.g SDS/PSDS).
7. Individuals must not enter until the BSC has filtered the contaminated air and aerosols have settled. Consult with BI staff prior to re-entry.
8. BI staff should assess and handle clean-up. The spill will be cleaned according to Biohazardous Spill Procedures - Minor Spills inside Containment Equipment – No Aerosol Risk”. All items in the BSC at the time of the spill will be decontaminated. BI staff will clean and disinfect the BSC sash and catch basin.

### Major Spill *outside* Containment Equipment – Aerosol Risk

1. When a biohazardous spill occurs outside containment equipment and poses an aerosol risk, stop working immediately.
2. Discard any contaminated PPE (e.g. gloves, lab coat) into a plastic bag either for decontamination or disposal via solid biohazardous waste.
3. Inform individuals in the affected room they are to stop working and MUST leave immediately due to a biohazardous spill with aerosol risk.
4. Individuals must remove and discard of PPE appropriately, wash hands and leave the lab. If it is safe, prevent environmental leakage by blocking the drain with a padded tube/sock. Post “DO NOT ENTER – Biohazard Spill” signs at closed entry points.
5. Users must notify supervisor(s), BI staff and relevant McMaster safety offices of spill occurrences and complete a McMaster Injury/Incident Report. Be prepared to provide details of the spill and nature of biohazardous agent (e.g SDS/PSDS).
6. Entry should be delayed until aerosols have settled (e.g. with air exchange, 24 hours). Consult with BI staff prior to re-entry.
7. BI staff should assess and handle clean-up. Depending on the nature of the spill, it will either be cleaned according to “Biohazardous Spill Procedures - Minor Spill outside Containment Equipment – No Aerosol Risk” or a complete room decontamination will be necessary.

## Biohazardous Spill Procedures – Direct Exposure

### Direct Spill onto the User

1. Discard any contaminated PPE (e.g. gloves, lab coat) into a plastic bag either for decontamination or disposal via solid biohazardous waste.
2. If **cutaneous (e.g. skin) exposure**: wash affected area with disinfectant soap and rinse with plenty of water.
3. If **percutaneous (e.g. through skin) or mucous membrane (e.g. nose, mouth, eyes, etc.) exposure**: flush the area to copious amounts of water. Use the emergency eyewash or shower stations, as appropriate. Refer to the BI Emergency Procedures Policies.
4. Users must notify supervisor(s), BI staff and relevant McMaster safety offices of spill occurrences and complete a McMaster Injury/Incident Report. Be prepared to provide details of the spill and nature of biohazardous agent (e.g SDS/PSDS).
5. Seek medical attention, as necessary.

## Biohazard Spill Paperwork

1. BI Biohazardous Spill Procedures Poster.
2. “Biohazardous Spill” sign.