

## **DECONTAMINATION OF BSL-3 LABORATORY WASTE POLICY/PROCEDURE**

### **I. GENERAL**

This policy/procedure provides the general/basic safety requirements to be followed in order to safely and effectively decontaminate the biological waste generated from the BSL-3 laboratory.

All laboratory safety protocols will be strictly observed while handling any and all materials from the BSL-3 laboratory.

### **II. TYPES OF WASTE**

The types of waste generated from the BSL-3 laboratory will consist of a mixture of sharps, solids, semi-solids, and liquid material. These different types of waste require separate decontamination procedures.

### **III. WASTE TREATMENT**

#### **A. Solid waste treatment**

1. Select agent waste must be transported to and placed in the autoclave by a person who has access approval to Biological Select Agents and Toxins (BSAT) following a security risk assessment (approved SRA).
2. Waste must be transported in a molded fiberglass tray containing material that is double bagged and decontaminated before removing from containment. The autoclaved material is then placed inside another biohazard bag which is then placed inside a biohazard box before removing it from the waste treatment area.
3. Waste must be transported using gloves and a lab coat.
4. The autoclave must be started as soon as the material is placed inside. It must be confirmed by the person with the approved SRA that the decontamination cycle has begun. It is not necessary for the person with the approved SRA to remain in the area during the entire decontamination cycle but must be assured that the cycle has begun.
5. The person with the approved SRA must confirm that the decontamination cycle, using system settings expected to render the contaminated material non-infectious or non-toxic, has been completed according to system specifications.
6. The autoclave must be on a regular maintenance schedule.
7. There must be a means of verifying that all parameters of the decontamination cycle have been attained (e.g., recording tape, biological indicators, probes, etc.).
8. Records of decontamination must be maintained that include material decontaminated, date of decontamination, cycle description and any verification documentation. These records must be maintained for three years.
9. There must be documentation to verify the process used is capable of completely decontaminating the material to be processed.

10. After autoclaving is complete, all autoclaved bags will be placed inside a biohazard box containing an additional biohazard bag and the box will be sealed for transport to an outside medical waste facility for incineration.

B. Liquid waste treatment:

1. Contaminated liquid waste must either be poured into a sharps container containing a 1:10 dilution of 5.25% - 6.15% hypochlorite solution or Bleach Germicidal Cleaner disinfectant or another container containing the same chemical disinfectant. See below for decontamination of sharps material.
2. Once the liquid has had sufficient contact time with the appropriate disinfectant, the liquid may be discarded in the BSL-3 sink followed by copious amounts of water.

#### IV. DECONTAMINATION

A. Decontamination of sharps material:

1. All sharps material will be placed into autoclavable sharps containers containing liquid disinfectant. The liquid disinfectant material contained in the sharps containers will consist of a 1:10 dilution of 5.25% - 6.15% hypochlorite solution or Bleach Germicidal Cleaner disinfectant.
2. Once the autoclavable container is 3/4 full, the lid will be securely fastened and the outside surfaces sprayed with either of the two disinfectant solutions mentioned above.
3. The container will be combined with solid waste and transported to room 1705A where it will be autoclaved. (The container lid must be loosened once inside the autoclave to prevent any explosions from occurring.)
4. After autoclaving is complete, the sharps container will be placed inside a biohazard box containing a biohazard bag. The bag will be securely fastened and the box will be sealed for transport to an outside medical waste facility for incineration.

B. Decontamination of solid and semi-solid material:

1. Grossly contaminated solid material such as swabs, plastic inoculation loops, microcentrifuge tubes, plastic tubes, etc. will be placed into the sharps containers containing the disinfectant.
2. Grossly contaminated solid and semi-solid material (i.e., petri dishes containing agarose culture media) will be placed into zip-lock bags.
3. Contaminated gloves and wipes will be placed into small biohazard bags kept inside the BSC. At the end of the day, the bags will be securely fastened and the outside of these bags will be sprayed with a disinfectant/decontamination solution, i.e. 1:10 dilution of 5.25% - 6.15% hypochlorite solution or Bleach Germicidal Cleaner, before being placed into a larger bag for transport to room 1705A. The larger bag will be placed inside a polypropylene autoclavable sterilizing tray to prevent possible damage to the autoclave if the bags should melt and/or leak.

4. The majority of the bulky solid material that is not grossly contaminated (i.e., gowns, adsorbent towels, etc.) will be contained in a molded fiberglass tray double-lined with biohazard bags.
5. Once the bag is 3/4 full, it will be securely fastened and the outside surface sprayed with a 1:10 dilution of 5.25% - 6.15% hypochlorite solution or Bleach Germicidal Cleaner disinfectant. It will then be placed inside another bag where it will be securely fastened, the outside surface sprayed with disinfectant, and placed inside the molded fiberglass tray.
6. The tray will be placed onto a rolling cart for transport to room 1705A for the waste to be autoclaved.
7. Once the tray has arrived, the bags will be removed from the tray and placed inside a polypropylene autoclavable sterilizing tray to prevent possible damage to the autoclave if the bags should melt and/or leak. Loosen the ties on the bags if tied too tightly to prevent the bags from exploding.
8. After autoclaving is complete, all autoclaved bags will be placed inside a biohazard box containing an additional biohazard bag. The bag will be securely fastened, and the box will be sealed for transport to an outside medical waste facility for incineration.
9. All materials will be autoclaved at  $\geq 121^{\circ}\text{C}$  for 60 minutes at  $\geq 15$  psi.

## V. REFERENCES

- A. *Procedure for Laboratory Safety and Decontamination*, 10/23/01, <http://www.lrnbc.cdc.gov.htm>
- B. *Laboratory Safety Policies/Procedures*; January, 2003; *Laboratory Operations Procedures/Policies for the Bioterrorism Section* manual; Tarrant County Public Health Department
- C. *Biological Safety – Principles and Practices*; Third Edition; 2000; pages 392-396
- D. *Guidance on the Use of Infectious Waste Treatment and Radiation Facilities Outside of Registered Space*; National Select Agent Registry; April 27, 2012