

Biological Disposal

1 – Introduction and Facts About Bleach

Appropriate decontamination procedures can be obtained from product information sheets, PSDS, etc. It is important to ensure that the appropriate dilution of the active ingredient (for example sodium hypochlorite in bleach) is used to decontaminate liquid waste and the contact time for complete decontamination is achieved.

Bleach Facts:

- Active ingredient is sodium hypochlorite (NaClO).
- Bleach stocks come in a variety of different concentrations of NaClO, from as low as 3% up to 12% for some industry brands
- Lab members MUST know the concentrations of NaClO in their stock to be able to calculate the final dilution of NaClO. For example, if your bleach stock is 6% then 100 mL of bleach stock can be added to 500 mL of fluid to result in 600 mL of 1% NaClO (the dilution often used for spills). Lab SOPs should state the final dilution of NaClO required for disinfection NOT the % dilution of bleach (since bleach stocks are so variable).
- Diluted bleach breaks down very quickly and must be made fresh every 24 hours.
- Bleach is very corrosive, if using 0.5% or higher of NaClO to disinfect surfaces then be sure to rinse them after the required contact time (usually 20-30 minutes depending on organism).
- Bleach must never be autoclaved (can cause chlorine gas to be released).

2 – Personal Protective Equipment (PPE)

When disposing of biological waste or cleaning up a biological spill one must wear appropriate PPE. This includes gloves, long pants, close-toed shoes and a lab coat plus safety glasses or face shield as required.

3 – Disposal of Risk Group 1 (RG1)

Liquid Waste

1. Kill the organism by using one of the following:
 - a. 1% sodium hypochlorite
 - b. 70% Ethanol
 - c. Autoclaving (in a container that is not labelled with a biohazard sign)
2. Incubate for the appropriate amount of time (20-30 minutes).
3. Dispose of the waste in the appropriate container (i.e., chemical waste or normal garbage).

Solid Waste

1. Remove any liquid and decontaminate.
2. Non-sharp, solid laboratory waste (empty plastic cell culture flasks and petri dishes, agar plates, empty plastic tubes, gloves, wrappers, absorbent tissues, etc.) which may be, or is known to be, contaminated with viable biological agents should be collected in a yellow Bio Waste plastic 20 litre pail.
3. Sharps are disposed of in a biohazard waste sharps container.

4 - Disposal of Risk Group 2 (RG2)

Liquid Waste

1. Draw fill lines onto the container. One for the liquid waste and one for the amount of bleach needed to have at least a 1% sodium hypochlorite (depending on the organism see risk assessment). Also use a container that will not be more than 80% full with the total volume so that pressure does not build up in a capped container.
2. Do not over fill the waste container with liquid waste as you need room to add bleach to have a final concentration of at least 1% sodium hypochlorite (depending on the organism see risk assessment).
3. Fill with appropriate amount of bleach.
4. Cap container, if possible.
5. Incubate for an appropriate amount of time (at least 30 minutes).
6. Dispose down the drain with lots of water or send to chemical waste

Solid Waste

1. Remove any liquid and decontaminate.
2. Non-sharp, solid laboratory waste (empty plastic cell culture flasks and petri dishes, agar plates, empty plastic tubes, gloves, wrappers, absorbent tissues, etc.) which may be, or is known to be, contaminated with viable biological agents should be collected in a yellow Bio Waste plastic 20 litre pail.
3. Sharps are disposed of in a biohazard waste sharps container.