Biohazard Disposal Bags

Introduction

Adherence to good microbiological and chemical safety practices and aseptic techniques protects individuals working with potentially dangerous biological materials (microorganisms, nucleic acids, and dangerous chemicals). Simple precautions must be taken to assure the health and safety of everyone.

Background

The use of biohazard disposal bags must be considered in the broad context of disposal of all materials in your biology laboratory. Specific federal, state, and local regulations may apply to the disposal of biohazard materials from your lab. You must review your obligations and options with regulatory and school officials before developing a biohazard disposal procedure at your school.

As a biology teacher your biohazard disposal items can usually be characterized as one of the following three types:

Type 1: Potentially harmful due to "microorganism-type" contamination.

Type 2: Potentially harmful due to dangerous chemical hazards.

Type 3: Common "garbage" items (with glass and sharp objects kept in separate trash containers).

All three types of materials are potentially dangerous and need to be treated seriously with a well–thought-out disposal plan.

Type 1 disposal items are best disposed of using biohazard bags and followed by sterilization. The sealed bag serves as a convenient disposal container and prevents recontamination on any growth media within the various containers. After being autoclaved, the biohazard bags may be disposed of in the normal school trash. The biohazard symbol and bright color of the biohazard bag often creates unnecessary concern if found, so it is recommended that the sealed, autoclaved bags be placed in black trash bags prior to disposal.

What items are appropriate for disposal in biohazard bags? Used pipets, Petri dishes, bacterial cultures, culture tubes, blood typing materials, any body fluid materials, any unknown "growing" items, contaminated media products, electrophoresis materials, and any items in question that might harbor microorganisms should be treated by autoclaving before disposal. Even though your cultures might have been "safe" organisms, you can't be sure about other "unknowns" that may have entered your laboratory. You are setting an important example for sterile technique practices and living the "you can never be too safe" motto. When in doubt, sterilize!

Biohazard bags are usually not utilized in the disposal of chemical hazards. Consult the current *Flinn Scientific Catalog/ Reference Manual* for guidelines concerning the proper disposal of all Type 2 materials as well as guidelines for disposal plans.

For the disposal of Type 3 materials your school should have appropriate receptacles and trash bags available for your laboratory. Be sure you comply with recycling policies and local trash separation regulations. To prevent serious injuries during trash compacting, be sure to have separate containers for broken glass and other sharp objects.

Some suggestions that might help you formulate your general biological disposal policy:

- Contact your state department of education: Many states have a science supervisor who might be able to make suggestions on disposal of biohazards or advise you about existing programs already in operation.
- If you are located near a large university, biological research facility, hospital, or other biological institution check with officials for possible cooperative activities. You might be able to piggy-back your biohazard materials with their disposal procedures.
- You might form a cooperative with other schools in your area and have a unified disposal plan. There are often savings in bulk disposal.
- Your state equivalent of the Environmental Protection Agency (EPA) may have useful resources.
- Your state and national biology teacher associations have resources and guidelines that are very helpful.

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Procedure

Materials that are potentially contaminated with harmful organisms must be sterilized before disposal. After sterilization they can usually be disposed of by normal trash removal methods.

Biohazard bags make the sterilization of some of these materials easier, while also providing a convenient disposal container. Biohazard bags are made of a very durable plastic that can withstand the high temperature and pressure of autoclaving. An indicator patch on the bag turns dark when it has been autoclaved/steam-processed. The dark patch provides quick external proof that the bag and its contents have been sterilized and that it should not be opened.

Objects to be autoclaved should be placed into a biohazard bag carefully without opening the containers (Petri dishes, test tubes, etc.). Highly dangerous materials should be handled only when wearing gloves, masks, safety eyewear, and practicing other sterile precautions. Do *not* put any sharp objects (blood lancets, broken glass, dissecting instruments, etc.) into biohazard bags. The bag should then be tightly sealed by doubling over its end and sealing shut with a twist tie. Do not overload or "stuff" the bag.

The bagged biohazard materials should now be autoclaved. If an autoclave is not available, a pressure cooker will do the job. The bagged biohazard materials should be autoclaved at 15 lbs. per square inch of pressure for 30 minutes at 121 °C. Follow directions for specific autoclaves and pressure cookers very carefully. Use insulated gloves when removing the bags from the autoclaving device. If an autoclave or pressure cooker is not available, contaminated items may be placed in hard surfaced containers and soaked in 10% bleach solution for at least an hour. Bags containing glass or breakable materials should be separated from other bags prior to disposal in the trash depending on your local practices.

Other Safety Products from Flinn Scientific, Inc.

Catalog No.	Description
FB0060	Biohazard Disposal Bags/pkg 25
FB0061	Body Fluid/Biohazard Spill Kit
AB1224	Lancet Safety Pouch
AB1225	Safety Pouch Stand
AP8572	Bioglasses (five colors)
AP4508	Waste Crock
AP8830	Glass Disposal Containers, Large, pkg 6
AP4428	Gloves, latex
SE102	E-Z Pour Spill Control Kit

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.