

Environmental Health and Safety Update

Disinfection and Disposal of Tissue Culture Wastes

Overview

The culturing and preparation of cell or organ tissues generates liquid wastes which must be disinfected prior to disposal. The tissues contained in the media waste constitute a biological waste requiring proper disinfection prior to disposal. This Update provides proper disinfection and disposal procedures for tissue culture wastes.

Applicability

This Update applies to all generators of tissue culture wastes at the Weill Cornell Medical College.

Responsibilities

Generators ensure that tissue culture wastes are properly managed and disposed in accordance with this Update and in conjunction with the College's Drain and Trash Disposal of Chemicals procedure.

Environmental Health and Safety (EHS) ensures that the information provided to generators is concurrent with the laws and regulations governing the disposal of these wastes and provides assistance and training as needed.

Procedure

Utilize the following disinfection and disposal procedures:

1. **ADD DISINFECTANT:** Fill the primary vacuum flask with bleach to ~10% of the flask's volume. If a different EPA-approved disinfectant is utilized, add the volume of disinfectant required to achieve the manufacturer's recommended concentration. Do not use alcohol-based disinfectants. *Note that when bleach and water are mixed together, the solution's disinfectant qualities only last 24 hours. Additional bleach may be required.*
2. **LABEL:** Label the flask indicating tissue culture media, disinfectant used, and other chemical constituents.
3. **CONTAINMENT:** Place the vacuum flask in secondary containment (e.g., bin or tray) to hold the liquid if it is spilled or released.
4. **ASPIRATE:** Aspirate the tissue culture waste into the flask containing disinfectant. *The maximum volume should not exceed 75% of the flask's total volume.*
5. **VACUUM FLASK 75% FULL:** Stop using the vacuum flask once it is ~75% full.
6. **ADD ADDITIONAL DISINFECTANT:** Add an additional volume of disinfectant required to achieve the manufacturer's recommended concentration (e.g., 10% bleach).
7. **STIR:** Stir at room temperature for 2 hours or let sit overnight to ensure proper disinfection.

November 2003

EHS Update – Disinfection and Disposal of Tissue Culture Wastes

8. **DETERMINE:** As the biological characteristics of the tissue culture waste have been disinfected, the chemical constituents of the waste must now be examined for proper disposal. Utilize the College's Drain and Trash Disposal of Chemicals procedure to determine if any of the chemical constituents, other than the disinfectant, are not acceptable for drain disposal (e.g., heavy metals).
9. **NOT ACCEPTABLE = HAZARDOUS WASTE:** If any of the chemical constituents, other than the disinfectant, are not acceptable for drain disposal, then the tissue culture waste must be managed as a hazardous waste in accordance with the College's Chemical Waste Disposal Procedures.
 - a. **COLLECT:** Collect the tissue culture waste into a sealable bottle. The bottle must remain sealed/closed at all times except when immediately adding or removing wastes from the bottle.
 - b. **LABEL:** Label utilizing a yellow self-adhesive hazardous waste label available from EHS. Identify all of the chemical constituents.
 - c. **STORE:** Store the waste bottle in a Chemical Waste Satellite Accumulation Area.
 - d. **DISPOSE:** Once full, complete an on-line Chemical Collection Request Form available on EHS' website.
10. **ACCEPTABLE = FLUSH:** If the tissue culture waste only contains chemical constituents which are acceptable for drain disposal then:
 - a. **pH ADJUST:** Check and adjust the pH of the waste solution utilizing either sodium hydroxide or potassium hydroxide so as the resultant solution has a pH greater than 5.0 and less than 11.0.
 - b. **FLUSH:** Flush waste solution to a sink drain with copious amounts of water.