

ENVIRONMENTAL HEALTH AND SAFETY POLICY

Topic: BIOLOGICAL LABORATORY WASTE MANAGEMENT -
DISPOSAL POLICY & PROCEDURE

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Approved by: _____
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Distribution: Science Department Chairs, Institutional Biosafety Committee, Selected Building Proctors
and Autoclave Users, V. C. for Administration, V. C. for Academic Affairs

Policy Statement

It is the policy of the University of Colorado at Boulder, that biological waste from Campus research and teaching laboratories be managed in accordance with the Biowaste Program procedures detailed below. These procedures replace those previously issued in the September, 1998 EH&S Generator's Guide to Hazardous Materials/Waste. Failure to abide by this policy and program may result in penalties that can be assessed, as appropriate to the entities that caused or contributed to the non-compliance.

Purpose

The Administration of the University of Colorado Boulder Campus is committed to protecting its students, faculty, staff, the public and the environment. The Environmental Health and Safety Department has developed a biological waste management program in accordance with Colorado Revised Statutes Title 25- Article 15-Part 4, which, if followed, satisfies applicable safety, health, and environmental regulations and concerns for the Campus laboratory operations that generate biological waste. It is the responsibility of each of us to implement these requirements where they pertain to our respective activities and job duties.

NOTE: *For information and assistance regarding the proper management and disposal of Sharps (needles, syringes, blades, scalpels) generated from personal medical use or from Campus medical facilities, contact Wardenburg Health Center at 492-2794. For information and assistance regarding occupational exposures to Bloodborne Pathogens, contact Risk Management at 492- 6526.*

Definitions (for purposes of this Policy and Procedures)

BIOLOGICAL WASTE (Biowaste): Cultures, plates, media and other liquid or solid materials, generated by Campus research and teaching laboratories, that contain or come in contact with living cells, body fluids, viruses, clinical materials, and other microorganisms.

BIOHAZARDOUS (INFECTIOUS) WASTE: Biological waste that involves the presence of organisms containing recombinant DNA or any other organisms hazardous to human or animal health, including pathogens of sufficient virulence and quantity that exposure to the waste by a susceptible host could result in an infectious disease. This determination is made by the Generator.

NONHAZARDOUS BIOLOGICAL AND BIOMEDICAL APPEARING WASTE: Plates, slides, culture vessels, and other biological or biomedical appearing materials, generated by Campus laboratories, that are not biohazardous.

RESPONSIBLE PARTY

RESPONSIBILITIES / • ACTIONS

WASTE GENERATOR ...

is responsible for identifying the hazardous and non-hazardous biowastes that they use or make, and for collecting and managing the waste in accordance with these procedures.

- If biological waste is contaminated with **radioactive** material, STOP, DO NOT AUTOCLAVE. Contact EH&S Health Physics at 492-6523 for proper procedures.

Sharps are not allowed in the non-biohazardous (autoclave bag) waste collection containers. If you have Sharps (needles, syringes, blades, scalpels) refer to the "Sharps Disposal" section of the EH&S Generator's Guide to Hazardous Materials/Waste.

- **Determine if the waste is biohazardous.** Render all biohazardous waste non-biohazardous (non-infectious) using effective chemical disinfection methods or by autoclaving. If in doubt, be conservative and autoclave or treat all non-radioactive biological waste.

Non-biohazardous liquid waste may be drain-disposed. If it contains no other hazardous chemicals or radioactive materials. If in doubt, call EH&S.

- **Seal biologically appearing non-biohazardous waste** inside a non-leaking autoclave bag, and complete and sign a biowaste tag as described below, checking the box that indicates that the material inside the bag is non-biohazardous. Attach the 3-part tag to the bag and place the bag into a designated "Certified Non-biohazardous Materials" receptacle. There is no need to autoclave or chemically disinfect this waste. Biowaste tags are available from EH&S.

- **Seal disinfected solid biowaste** inside a non-leaking autoclave bag, and complete and sign a biowaste tag as described below, indicating that the material inside the bag has been rendered non-biohazardous by chemical treatment. Attach the tag to the bag, and place the bag into a designated "Certified Non-biohazardous Materials" receptacle.

- Place **biohazardous waste that has not been chemically disinfected** into non-leaking, heat resistant autoclave bags which have built-in sterilization indicators. Complete the applicable portions of a biowaste tag (Dep't., P.I., Room #, Waste Volume, Contents), check the "Autoclave" box, and attach all three tag copies to the bag. Bring the bag of biohazardous waste to your designated autoclave area.

RESPONSIBLE PARTY

RESPONSIBILITIES / • ACTIONS

GENERATING DEPARTMENT'S RESPONSIBLE PERSON(S) ...

is (are) assigned by the Generating Department's Administration to serve as liaison for the Biowaste Program, and to assure that Program requirements are being properly implemented by the generating Department's personnel.

- Assure that each autoclave is checked by an **authorized service provider at least every 6 months** (preferably every 60-90 days), to assure proper function, i.e., preventative maintenance, temperature calibration, and verification of adequate disinfection (Bacillus test). If the Department does not already have a contract for autoclave maintenance, EH&S can provide a list of vendors.

Bacillus stearothermophilus must be used at least every 90 days at the center of a load to confirm adequate disinfection. The Bacillus test may be performed by the Department or the service provider.

- Make sure that any autoclave that is not functioning properly is taken out of service (and posted with appropriate signage) until it is repaired.
- Assure that copies of maintenance, inspection, and verification of adequate disinfection **records** are sent to EH&S, Campus Box 375.

AUTOCLAVE OPERATOR...

is responsible for assuring that any biohazardous waste that has not been rendered non-biohazardous by chemical treatment, is autoclaved and managed according to the following biowaste autoclave procedures. These procedures do not apply to non-biowaste autoclave use, such as sterilizing glassware or equipment.

- Make sure that each autoclave used for biowaste disinfection has been identified with a unique **EH&S-assigned** number, posted on the front of the autoclave. Please let EH&S know if you become aware of other autoclaves being used for treating biological waste.
- Make sure that the autoclave machine you are using has a prominently posted **standard operating procedure** (SOP), including directions for proper loading and adequate cycle time. Please provide EH&S with a copy of the SOP (CB 375).
- Make sure that biohazardous waste has been placed into non-leaking, heat resistant **autoclave bags** which have built-in sterilization indicators. Also make sure that each bag has a biowaste tag attached, initially completed by the waste generator. The "autoclave" box on the tags should be marked to show that the bag needs autoclaving.

RESPONSIBLE PARTY

AUTOCLAVE OPERATOR
(cont.)

RESPONSIBILITIES / • ACTIONS

- Leave the bags loosely tied (do not seal during the autoclave process) so that steam can access all areas of the load, **and autoclave the load according to the posted SOPs.**
- Verify that the built-in **autoclave bag indicator** has changed to show that the biowaste has been rendered non-infectious.
- **Seal the autoclaved bags** after they are removed from the autoclave. Finish completing each biowaste tag by printing and signing your name in the blank provided, along with the date that the biowaste was autoclaved.
- Deposit the bags into the "**Certified Non-biohazardous Materials**" receptacle. Leave all three copies of the tag attached to the bag.

WASTE GENERATOR and
AUTOCLAVE OPERATOR...

Biowaste tags, available from EH&S, are to be completed as described below, and attached to each autoclave bag. Bags that do not have a completed, signed biowaste tag attached, must be considered "biohazardous" and will not be picked up for disposal. They will be left in a white "Biohazardous Waste" tub (next to the "Certified Non-biohazardous Materials" receptacle) for the Generating department to properly autoclave and tag.

NON-BIOHAZARDOUS CERTIFICATION TAG

Environmental Health & Safety, Campus Box 375
(303) 492-6025, FAX (303) 492-2854
ehs@stripe.colorado.edu

Container ID # _____

PRESS HARD USING INK - MULTIPLE COPIES

Autoclave # 1 Dept. 2

Principle Investigator 3

Room # 4 Est. Waste Vol.(ft³) 5

Contents 6

Type of Waste:

Non-Biohazardous: Autoclaving Required 7

Biohazardous: Disinfection or Autoclaving Required

Method of Disinfection: (check one)

Chemical Disinfection(specify): 8

Autoclave

I certify that this waste is Non-Biohazardous. If autoclaving was required: proper biowaste management procedures were followed, the autoclave is being properly maintained, and the sterilization indicator was visible on this autoclave bag.

Generator : (SIGNATURE REQUIRED)

x 9

Print Name : _____

Date : 10



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Distribution: White - EH&S, Canary - Transportation/Landfill,
Bottom Manilla Card - Attach to Container

1. **AUTOCLAVE NUMBER** - Write the EH&S autoclave number in the blank provided. This number (black number on a white sticker) has been posted on each autoclave.
2. **DEPARTMENT** - Indicate the generating laboratory's Department.
3. **PRINCIPAL INVESTIGATOR** - Identify the Principal Investigator for the generating lab.
4. **ROOM #** - Indicate the room where the waste originated.
5. **VOLUME** - Estimate the waste volume in the bag in cubic feet.
6. **CONTENTS** - Generically describe contents of the bag.
7. **NON-BIOHAZARDOUS** - Check this box if the contained materials are non-hazardous biowaste and therefore, do not require disinfection or autoclaving.

RESPONSIBLE PARTY

WASTE GENERATOR and
AUTOCLAVE OPERATOR
(tag cont.)...

RESPONSIBILITIES / • ACTIONS

8. **METHOD OF DISINFECTION** - Check the appropriate boxes, indicating if the biohazardous waste was rendered non-biohazardous by chemical treatment or needs autoclaving. If chemical disinfection was used, indicate the specific treatment method in the blank provided.

9. **CERTIFICATION** - A signature of the person certifying the waste as non-biohazardous is required. This will either be the generator who chemically disinfected the waste, or the operator who autoclaved the waste. The signature also confirms that proper biowaste management procedures were followed and that the autoclave is being properly maintained.

10. **DATE** - Indicate when the waste was certified non-biohazardous by the waste generator or autoclave operator.

SUPERVISORS...

of personnel assigned to collect bags of non-hazardous biowaste from Department receptacles, are responsible for assuring that their employees have received the proper training. **Training** should include, but not be limited to: proper hygienic/sanitary practices, proper lifting techniques, review of Biowaste Program disposal procedures, and record-keeping requirements for UCB and the disposal company.

PERSONNEL COLLECTING
BIOWASTE BAGS...

are responsible for picking up non-hazardous biowaste bags from Department receptacles, bringing them to designated Campus or off-site collection or disposal locations, and properly processing the associated paperwork.

- **Receive proper training**, coordinated through your supervisor as noted above.
- **Collect autoclave bags** containing non-biohazardous waste from the designated Non-biohazardous Materials receptacles. Make sure that each bag has a completed and signed 3-part tag attached to it.
- Remove the **top (white) copy** of each tag. Deliver the white copies to EH&S.
- **If no tag is present, or if the tag has not been completed** and signed, remove the bag from the Non-biohazardous Materials receptacle and place it into the red "Biohazardous Waste" tub next to the receptacle. The Generating Department will be responsible for properly re-processing/disinfecting that waste.

RESPONSIBLE PARTY

RESPONSIBILITIES / • ACTIONS

PERSONNEL COLLECTING
BIOWASTE BAGS (cont.)

- Load the bags into the designated University vehicle, removing the **second (yellow) tag** copy from each bag and clip the yellow copies together or place them into an envelope. The collected yellow copies serve as a transportation manifest for the load and provide a record for each bag being sent for disposal.
- **If a central Campus collection point is utilized**, bring the bags to the designated collection point, unlock the secured collection receptacle and unload the bags into the receptacle. Leave the yellow tags in the tag collection box outside the receptacle. Lock both the receptacle and the tag collection box.
- **If the load is taken directly to the landfill**, keep the yellow tag copies with the Driver. Complete any additional paperwork as required by the disposal company, i.e., the Landfill, and leave the yellow tag copies with that paperwork.

EH&S...

is responsible for: overseeing general University compliance with the Biowaste Program; helping Campus Departments understand their responsibilities and assisting them in attaining Program compliance; posting signs, stickers and notices; and keeping records.

- **Post Biowaste Management Procedures**, emergency spill contingency plans, and autoclave identification numbers at each autoclave. Provide "Biohazardous Waste" tubs next to each Non-biohazardous Materials receptacle.
- Assist generating Departments in posting SOPs on each autoclave, and in finding **autoclave service vendors**.
- Keep white tag copies as the **University records**. Receive, review and file autoclave maintenance and disinfection records from the biowaste generating Departments.
- Periodically **audit** the Biowaste / Autoclave program to make sure that proper procedures are being followed, and where deficiencies are found, help the Departments attain compliance. If necessary to protect people and the environment, shut down research or other activities where biowaste management procedures are not being followed.

Your cooperation is required and appreciated in implementing this policy and program. The Director and Staff of Environmental Health and Safety can be reached at 492-6025 to assist you with questions and concerns about this and other safety, health and environmental protection matters.