


# Autoclaving Biological Waste

Environmental Health & Safety

## SOP No. 6.1

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### PURPOSE

This SOP describes appropriate procedures for autoclaving biological waste at Texas Tech University. There are a variety of autoclaves at Texas Tech. It is state law that users are appropriately trained on how to prepare materials and operate equipment used for biowaste treatment. Improperly prepared items have the potential to not be decontaminated.

Each laboratory/department must have a written SOP for proper use of the autoclave and users must be properly trained before using the equipment. Contact EHS if you have questions.

### NOTES

**ALL biological waste treatment must be logged and utilize state-approved methods.** The log must include: the date of treatment; amount of waste treated; method/conditions of treatment; the name (printed) and initials of the person(s) performing treatment. Written procedure(s) for the operation and testing of any equipment used and a written procedure(s) for the preparation of any chemicals used in treatment are also required. **This is a state regulation** (see section B7.3.1 of the University Laboratory Safety Manual for more information).

Autoclaves used to treat biological waste **MUST** be tested at least annually by EHS; more frequent testing may be required for some units by state law; see section B7.3.1.2 to determine how often your unit requires testing.

Standard run settings for biological waste are a minimum of 30 minutes at 121C/15psi. This run time does NOT include the time needed for the unit to pressurize and reach temperature and/or cool down. Consult your owner's manual if a biowaste setting is not already programmed for your unit.

Full loads may not autoclave properly or take longer to autoclave. Users should evaluate their methods using biological indicators.

Contact EHS with questions.

## PROTECTIVE EQUIPMENT

Lab coat

Gloves

Eye protection

Thermal protective gloves

## MATERIALS

Autoclave tape

Biobags

Twist ties (optional)

Rubbermaid tub with lid

Autoclave-proof tub

Cart

Disinfectant

## PROCEDURE

This procedure must be adapted to individual laboratories. It is only an outline of the general procedures for preparation, transportation, and disposal of autoclaved biowaste.

1. Solid wastes are collected in biobags. Biobags shall be placed in labeled, leak-resistant containers capable of decontamination while waste is collected. Biobags should not be filled beyond  $\frac{3}{4}$  full. Overfilling the bags inhibits closure
2. When  $\frac{3}{4}$  (if not before) the top of the bags should be **loosely** secured with a twist tie or autoclave tape. Bags should not be twisted or knotted closed. This inhibits proper steam circulation and subsequent decontamination of bag's contents.
  - Autoclave tape must be applied to the bag if a twist tie is used.
3. If an autoclave is not available in the immediate laboratory, waste must be transported in a closed, labeled secondary container to the autoclave. Labeling includes the universal biohazard sticker and PI name and contact information. Waste shall not be left unsecured.
  - A cart should be used to transport waste.
  - The outer surface of the secondary containers and the cart shall be decontaminated before leaving the laboratory.
  - PPE is not to be worn while in transit to the autoclave but carried. Bring multiple pairs of disposable gloves with you.
4. Biowaste bags are placed in autoclave-safe tubs before being placed in the autoclave. Do not autoclave any materials without using a tub; this can damage the autoclave. Section B7.3.3 offers guidance on selecting autoclave bags and containers which are safe for autoclaving.

5. Load the autoclave wearing thermal protective gloves as needed. Do not don thermal protective gloves wearing contaminated disposable gloves. Waste is to be autoclaved on the biowaste setting or held for a minimum of 30 minutes at 121C/15psi.
6. After a successful run, carefully remove the contents from the autoclave. Affix a "treated in accordance with 25TAC1.136" sticker provided by EHS to each biobag and placed in black trash bag(s).
  - If a load fails to run properly or the autoclave tape or other chemical indicator suggests improper run conditions, do not continue with waste disposal. Follow your lab/department-specific SOP and/or contact a supervisor for assistance.
7. The black-bagged treated waste is then disposed of in the large dumpster behind biology by lab personnel. Custodial will not dispose of this waste if left outside the laboratory.

### **EMERGENCY PRE-PLANNING**

This should be completed at the laboratory/department level. Contact EHS with questions.

In the event of a burn, gently cleanse the area with a mild soap and cool water. Continue flushing the area with cool water for several minutes. Seek medical attention if needed and submit incident report within 24hrs: <http://www.depts.ttu.edu/ehs/about/incident-reporting.php> .

Immediately call 911 for serious injuries. Incidents requiring medical attention shall be reported to EHS immediately or as soon as possible.

### **REFERENCES**

Section B7.3 of the University Laboratory Safety Manual.

Texas Administration Code.

