

# **AUTOCLAVED WASTE**

## *(Treated Infectious Waste)*

### **What is an autoclave?**

An autoclave, or steam sterilizer, is an insulated pressure chamber in which saturated steam is used to elevate the temperature. Autoclaves are found in research laboratories, healthcare centers and other places that require high-level disinfection.

### **How does an autoclave work?**

An autoclave uses pressurized steam to decontaminate infectious waste. Decontamination autoclaves must operate at a temperature of 121°C, a pressure of 15 psi, and a minimum cycle time of 60 minutes. The effectiveness of an autoclave depends on the time, temperature, and direct steam contact with infectious agents. Other factors that influence treatment efficiency include waste density, physical state and size, and organic content.

### **How do I use the autoclave?**

Follow manufacturer's instructions and the Kaka`ako BSB Standardized Autoclave Protocol for the Tuttnauer autoclaves built in to the BSB. Periodic Autoclave & Biowaste trainings are available and a training video is available for viewing, contact EHSO for more information.

### **What can be autoclaved?**

Follow the guidelines set forth in your USDA, CDC, and HDOA permits for the decontamination of your study's infectious waste. Metal sharps are not permitted to enter the MSW stream, submit metal sharps to EHSO for proper disposal. Research animal carcasses, unpreserved tissues, body parts, recognizable human body parts and organs must be properly treated and disposed, contact EHSO for assistance. Refer to the Kaka`ako BSB Disposal Guidelines for more information.

The following are examples of infectious waste products which may be autoclaved and disposed as treated infectious waste (in the MSW stream):

- Cultures and stocks of infectious agents
- Laboratory wastes that were exposed to infectious agents
- Human blood waste and human blood-products
- Blood, biological waste, and discarded materials contaminated with excretion, exudates, or secretion from humans or animals
- Discarded equipment and parts in contact with infectious agents
- Preparations made from genetically altered living organisms and their products

### **What cannot be autoclaved?**

Types of waste that must not be autoclaved include cancer therapeutic drugs, toxic and volatile chemicals, radioisotopes, hazardous chemical waste or any other harmful material that can be vaporized and disseminated with heat. In general, do not autoclave flammable, reactive, corrosive, toxic or radioactive materials. Contact EHSO for assistance with the proper treatment and disposal of preserved tissues or specimens, do not autoclave these items. Contact EHSO for assistance with the proper treatment and disposal of animal tissues and body parts and human body parts or organs.

### **Which autoclaves can be used?**

There are two autoclaves designated for "clean" sterilization only and therefore may not be used to decontaminate waste, CRCH 240 & Trop. Med. 335.

The following autoclaves may be used for both decontamination and clean sterilization and have been validated by monthly quality control spore testing. Be sure that autoclave users have entry clearance and all required trainings/certifications.

- IBR/Anatomy 166 (restricted access)
- CMB 204
- CRCH 239A (designated radioisotope work wing/floor)
- SNRP II & Trop. Med. 304
- Trop. Med. 334A

### **How should I collect and dispose the waste?**

Follow the guideline set forth in your permits.

In general, liquid infectious waste may be autoclaved or chemically treated (by approved method) and disposed via the laboratory drain system.

For solid infectious waste, follow the disposal procedures described in the Kaka`ako Waste Disposal Guidelines or contact EHSO for more information.

### **Questions and Resources**

Contact the Environmental Health & Safety Office with waste disposal questions.

<http://www.hawaii.edu/ehso/jabsom/staff.htm>

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