

# 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, diagnostic and microbiology laboratories, health centers and other places that require high-level disinfection.



## How does an autoclave work?

An autoclave uses pressurized steam to decontaminate infectious waste. Laboratory autoclaves normally operate at a temperature of 250°F (121°C), a pressure of 15 pounds per square inch (psi) and a minimum cycle time of 30 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?

Autoclaves come in many different styles. Therefore, always follow the manufacturer's instructions when using the autoclave.

## What can be autoclaved?

In New Hampshire, almost all infectious waste can be autoclaved and disposed as Municipal Solid Waste (MSW). However, UNH currently prohibits medical sharps (needles, syringes, etc.) and research animal carcasses<sup>1</sup> from entering the MSW stream. These items must be removed by an outside contractor according to their specifications.



The following infectious waste products may be autoclaved<sup>2</sup> and disposed as treated infectious waste (in the MSW stream):

- Cultures and stocks of infectious agents.
- Laboratory wastes from medical, pathological, or pharmaceutical laboratories that were exposed to infectious agents.
- Pathological wastes, including tissues, organs and body parts.
- Non-research animal tissues/carcasses weighing less than five pounds.
- Human blood waste and human blood-products.
- Dialysis wastes in contact with blood.
- 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 should not be autoclaved include cancer drugs, toxic and volatile chemicals, radioisotopes, hazardous 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**. Human limbs and recognizable human organs, excluding teeth and contiguous gum tissue, must be disposed by incineration or interment by an outside company. Preserved specimens (i.e. formaldehyde) must not be autoclaved; they can be thrown in the trash and disposed as MSW (if the excess liquid preservative has been removed).



## Which autoclaves can be used?

Several autoclaves at UNH have been validated by spore testing as outlined in the State of New Hampshire's infectious waste regulations. The following autoclaves are validated on a quarterly basis to ensure effective disinfection:

- Gregg Hall, Room 237
- Jackson Laboratory, Room 202
- Kendall Hall, Room 302
- Rudman Hall, Room G61, #1
- Rudman Hall, Room G61, #2
- Rudman Hall, Room 163, #1
- Rudman Hall, Room 263, #1
- Rudman Hall, Room 263, #2
- Rudman Hall, Room 229, #1

## How should I collect and dispose the waste?

Liquid infectious waste may be autoclaved or chemically disinfected and then disposed via the laboratory drainage system. (Do not pour melted agar into sink or floor drains. Allow it to cool and solidify for disposal as a solid waste.)

Follow these disposal procedures for solid infectious waste:

1. Collect the infectious waste in clear, unlabeled, high strength polymer autoclave bags (imprinted with process indicator if possible) in an approved location.
2. Remove all biohazard labels. Ensure that words like "pathogenic," "infectious" or "biohazardous" have been removed from all autoclaved materials.
3. Autoclave and cool the waste.
4. Place the autoclave bag into a black polypropylene trash bag.
5. Put the bags into a second black polypropylene trash bag.\*
6. Ensure that the contents cannot puncture the black polypropylene trash bags.
7. Place the bags in an approved location/dumpster. Contact your hazardous waste coordinator for more information.



\* Bags should not weigh more than 20 pounds.



## Questions?

Contact the Office of Environmental Health and Safety at 862-4041 with questions about the disposal of infectious waste.

<sup>1</sup> All research animals must be disposed according to IACUC and Animal Resources Office procedures.

<sup>2</sup> All autoclaves must be validated by spore testing at least quarterly, according to State of New Hampshire regulations (ENV-SW 904.03)