

Autoclave Quality Assurance Program

Autoclaving is an accepted procedure for the decontamination of certain biohazardous waste. Biological cultures, stocks, contaminated solid waste, and liquid waste can be sterilized through autoclaving. After sterilization in a steam autoclave, these materials are considered non-infectious. Materials that contain hazardous chemicals are not to be autoclaved.

To ensure that biohazardous waste is properly decontaminated during autoclaving, the following procedures should be followed by laboratory personnel:

1. Infectious waste must be treated in an autoclave for a minimum of 30 minutes at 121°C (250°F); however, the total processing time required to decontaminate biohazardous waste depends on the specific loading factors (container type, water content, quantity, etc.).
 - ❖ Sterilization by autoclaving is accomplished through exposure and penetration of the contaminated material by superheated steam for an adequate amount of time. Because steam will not penetrate a sealed plastic autoclave bag, bags containing dry loads must not be tightly sealed. To help ensure proper sterilization water may be added to the load. Consult the manufacturer's instructions for sterilizing materials inside plastic autoclave bags. Liquid waste may also be autoclaved in lieu of adding appropriate chemicals disinfectant, and disposed in the sink.
2. All autoclaved waste must include a steam sterilization indicator (autoclave tape and sterilization indicator strip).
3. Steam autoclaves used to treat infectious waste must operate at a minimum temperature of 121° C. The operating temperature of the autoclave must be verified for each run by maintaining a record of the temperature either as a chart or paper tape recording or a manual recording in a logbook.
4. On a monthly basis (at a minimum), confirm that adequate sterilization conditions are being met, through the use of Biological Indicators (BIs) containing heat-resistant spores (*Geobacillus stearothermophilus*) placed in the center of autoclave bags (dry loads) or in the liquid (liquid loads) of an autoclave load.
 - ❖ For liquid loads place BIs in container containing water. Remember to use the same type of container that is used for your liquid waste.
 - ❖ There are specific BIs specific for both dry and liquid loads.
5. Maintain records of BI testing and maximum autoclave temperature recordings for a minimum of one year (see Autoclave QC Log at end of appendix).

Monthly Spore Testing Procedure

1. Place Biological Indicator in the center of autoclave bags (dry loads) or in the liquid of an autoclave load.
2. Process the load under normal operating procedures.
3. Incubate the autoclaved BI and a non-autoclaved, control BI according to the manufacturer's instructions (normally 55°-60° C for 24 to 48 hours).
4. If a color change occurs, the sterilization process was unsuccessful. Discontinue use of the autoclave until it is repaired and passes retesting. Tag the autoclave as "Not Approved for Infectious Waste" until the autoclave passes retesting.
5. Indicate test results on Autoclave QC Log (see end of appendix) and retain for at least one year.

