

LABORATORY AUTOCLAVE: SAFETY and SUSTAINABILITY GUIDELINES



I TRAINING AND USAGE

1. All personnel in the laboratory should receive hands-on training before using an autoclave.
2. Each administrative unit should develop standard operating procedures for their autoclave uses and maintain a training record.
3. A log sheet should be maintained that captures the user, the program, and the purpose (reagent/instrument sterilization, or waste decontamination).
 - a. If the autoclave is being used to sterilize waste, the procedures must be validated after 40 hours of run time. The log sheet is required to track this usage to ensure validations are being conducted.
4. Always use separate runs for clean and dirty items.
5. Anyone who generates, handles, or signs for removal of medical waste at UAB is required to complete [Medical Waste Management for Labs \(ID: E-7VR7VE\)](#) every three years (or if regulations change).

II ENERGY SAVING

1. Limit autoclave usage during regular hours. Try to avoid using autoclave during afterhours and weekends.
2. Keep a schedule of planned autoclave times so users can maximize the load of each run.
3. Avoid using longer times and higher temperatures than required.
4. Consult with Biosafety to determine if your waste requires autoclaving prior to Stericycle pick-up.

III AUTOCLAVING LIQUIDS and SOLIDS

1. Liquids should be sterilized using the liquid cycle. Dry loads such as lab ware and biohazard waste should be treated using the gravity cycle.
2. Do not overfill the bottle with more than 2/3rd of liquid. Always loosen the caps before loading to avoid shattering.
3. Wear appropriate personal protection equipment (PPE) such as heat resistant gloves, lab coat, safety glasses).
4. Check plastic materials to ensure that they are compatible with the autoclave. Instruments and surgical tools should be autoclaved in appropriate pouches, not biohazard bags.

IV CHEMICALS

1. Never autoclave flammable, combustible, reactive, corrosive, volatile, toxic, acids, bases, organic solvents or radioactive materials.
2. Unusual chemical smells and liquid leaks coming from autoclave should be immediately reported to responsible person mentioned on autoclave.

V BEFORE AND AFTER LOADING AUTOCLAVE

1. Before using the autoclave check for items left from the previous run.
2. Clearly label all materials with the date of autoclaving and any relevant information.
3. Use sterilization indicators on the containers to ensure steam sterilization is achieved.
4. Never place containers directly on the rack or autoclave floor. Always use secondary containers to capture spills. A small amount of water in the bottom of the secondary container helps for uniform heating, and it facilitates cleaning of solutions that overflow during the run.
5. Allow sufficient space between items to allow steam penetration. Make sure autoclave is full but do not overload.
6. Never attempt to open the door while the autoclave is in operation.
7. Always verify the door is secured before starting the cycle.
8. Make sure that jacket pressure gauge is reading 0 PSI before opening the door.
9. Open the door slowly and keep your head, face, and hands away from the door.
10. Never try to forcibly open the door of an autoclave. The autoclave door may not be opening because it has not yet fully depressurized or is still in the midst of a cycle. Attempting to open the autoclave door while it is hot and pressurized can result in severe injuries.
11. Wear Appropriate PPE while opening door.
12. If possible, put the autoclave in standby mode after removing items from the autoclave.

VI MAINTENANCE

1. Regular maintenance and calibration of the autoclave can ensure optimal performance and reduce energy consumption.
2. If the autoclave is not operating properly, post a sign to alert others not to use it, and notify the responsible person, as designated on the autoclave.

VII WASTE MANAGEMENT

1. Autoclaved waste should be discarded as per institutional guidelines. All Category A waste must be autoclaved before it is offered to Stericycle as “medical waste.”
2. If you need guidance, please Contact EH&S Biosafety if you are not familiar with those guidelines. biosafety@uab.edu

VIII ACCIDENT RESPONSE

1. Post Exposure/Injury Response Procedures near the autoclave.
2. Report accidents to supervisors immediately so proper medical attention and insurance coverage is assured. Report all injuries/exposures to Human Resources via the On-the-job-injury Program.