



CNS SW227 Autoclave Standard Operating Procedures

The objective of this document is to provide standard operating procedures for the safe use of the autoclave.

Autoclave Model: Steris

Location of Autoclave: SW227

Contact Information: Bruno Chue or Durga Acharya (SW229D).

GENERAL RULES FOR AUTOCLAVING

Potential Hazards:

Autoclaves are a pressure chamber that use high temperature steam and pressure for sterilization. The safety risks are as follow;

1. Heat burns from hot materials, autoclave chamber/door, and steam.
2. Body injury if there is an explosion.

Safety:

1. Ensure that you have been properly trained by Bruno, before using the autoclave.
2. Wear personal protective clothing and oven mitts when loading and unloading the autoclave.
3. Closed toed shoes and long pants must be worn.

Material Preparation:

- Ensure that the materials are safe for autoclaving.
- If your samples emit toxic fumes they should not be autoclaved.
- Do not autoclave bleach.
- Inspect your glassware for any cracks before autoclaving. Glassware must be heat-resistant borosilicate (Pyrex).
- Loose dry material must be wrapped in a steam-penetrating paper or loosely covered with aluminum foil. Do not wrap tightly as this will prevent steam penetration and your materials will not be effectively sterilized.
- Loosen caps to prevent the buildup of pressure. Containers should only be two-thirds full.
- All items must be tagged with some autoclave tape as an indicator for a complete cycle.
- All items must be placed in an autoclavable secondary container that is big enough to contain a total spill of the contents, preferably a stainless-steel container.
- This autoclave is not to be used for sterilizing biohazardous waste.
- Label your materials and bin with name and lab.

OPERATING THE AUTOCLAVE IN SW227

Loading Your Material into the Autoclave:

- Wear a lab coat, proper eye protection, heat insulating gloves and closed toed shoes.
- Press the foot latch to close the door.
- Place your materials in the autoclave. Make sure you do not mix incompatible materials.
- Leave enough room in the autoclave for steam circulation.
- Press the foot latch to close the door.

Operating the Autoclave:

- The first person to use the autoclave in the morning will need to drain the system. The screen will read 'Flush Generator'. Open the front panel and locate the orange valve. Fully turn it counterclockwise. Close the front panel and press the 'start timer' option. The autoclave will drain for 5 minutes. The screen will read 'Flushing of Generator Complete'. Click continue. You will be taken to the main screen where you can select your cycle.
- Open the front panel and fully turn the orange valve CW to close the drain.
- Select the correct cycle. **IMPORTANT:** the first cycle may fail because the generator cannot produce enough steam to reach the appropriate temperature or pressure. The error message will usually read the 'door is unable to close'. Let this cycle fail and re-run the cycle.
- Do not change any of the parameters in the pre-set cycle options. A cycle will usually take between 45 mins-1 hr.
- Log your usage in the logbook beside the autoclave!
- Report any incidents to the CNS Personnel immediately and to your PI.

Unloading the Autoclave:

- Wear a lab coat, proper eye protection, heat insulating gloves and closed toed shoes.
- Make sure that the cycle is complete.
- Do not stand in front of or near the autoclave door! Press the foot latch to open the door no more than 1 inch to release the residual steam. Slowly open the rest of the door. Once the steam is gone carefully remove your material. Bring a cart to transport your hot items from the CNS back to your lab.
- Do not shake the containers and make sure the material has cooled before opening. The liquid is superheated and if you shake/swirl it, then it can explode.
- Close the autoclave door.
- Do not pour any liquid agar down the sink drain.

Incident Response:

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- Report any incidents to the CNS Personnel (SW229D) immediately. All incidents, including spill or injury must be reported to your supervisor and to the Environmental Health and Safety office at UTSC.
- In case of injury seek first aid and if case of an emergency, call campus police (416-978-2222)
- In case of a spill, wait until the autoclave and the materials have cooled to room temperature before attempting to clean up. Review any special spill cleanup SOPs or material safety data sheets if necessary and use the spill kit to clean-up the spill. Dispose of the waste following the protocol appropriate for the material.