

Autoclaves

Steris (PSC 545, 645, Kell 445)

Amsco Steam autoclaves (NSC 484, Kell 445)

Sanyo (PSC 645, NSC 484, Kell 445)

Hiroyama Electric Autoclaves (PSC 545, 651)

Dishwashers (PSC 545, 645, 745, NSC 484, Kell 445)

General Steam Autoclave Warnings:

Every time you use the autoclaves and/or dishwashers, you MUST sign-in and sign-out of the appropriate logbook.

Do not under any circumstance stop someone's cycle before it is done.

Do not leave anything in the autoclave/ dishwasher rooms.

Dispose of biohazardous waste in the black trashcans that are provided and do not overfill.

Do NOT use the red biohazard bins as storage containers; they are to be used only for transporting biohazardous waste that needs sterilizing from your lab to the autoclave rooms.

Remove all labels from dishware prior to loading into the dishwashers. Labels can clog the filters & drains which in turn can cause the equipment to malfunction.

Do NOT wash any unstable, cracked, damaged, etc. dishware in the dishwashers; the water pressure can cause the unstable dishware to burst inside the dishwasher.

Warnings for Electric Autoclaves:

Make sure the Exhaust tank is filled with H₂O to the LOW mark and not over the HIGH mark.

Check the chamber for H₂O first and then if needed fill chamber with ~2 L H₂O.

Allow for temp. lag when setting up sterilization time.

Steam Autoclaves

For Any Issues and/or Concerns, Contact PSC: Sonja Stovall or Gemeia Cameron (404) 413-5363

Contact NSC: Chip Foster (404) 413-5361

Common Autoclave Rules

1. Every lab was given stainless steel trays – use them. All items to be sterilized, whether wet or dry, MUST be placed in a stainless steel tray. NO lab is exempt. NEVER place anything directly on the racks, in the autoclave chambers, nor ever in plastic bins when using the autoclaves.
2. Both NSC and PSC stockrooms have biohazard bags and boxes. They are also brown biohazard boxes and bags near the drop off location.
3. Do NOT overfill biohazard bags. You should be able to close the bag. Use a rubber band or loosely tape the bag. Do not twist the bag, it won't sterilize

properly if the bag is sealed. Place the bag into the black trash bins immediately after autoclaving.

4. Do NOT fill bottles more than half full of liquids. The pressure and temperature within the chamber will cause the liquids to boil over into the chambers.
5. Do NOT tighten caps, lids, and/or tops onto bottles & containers. The chamber pressure will cause the bottles to explode inside the chamber & lids to permanently seal to its container.
6. When autoclaving liquids, fill the stainless steel tray with a very small amount of water. This helps balance out the pressure of the containers within the chamber, while in sterilization.
7. Sharps containers should NOT ever, under any circumstances be stored in the autoclave rooms. All sharps containers upon being autoclaved MUST be placed into red Biohazard bags, and placed into the Biohazard brown cardboard boxes, sealed, and taken to the appropriate locale of the building on the 1st floor in freight elevator hallway (PSC) and 2nd floor near freight elevator (NSC) for disposal pickup after 1:00 pm on Tuesdays & before 8:00 am on Wednesdays. This is the only time slot that the boxes can be left.
8. Do not use the small autoclaves to sterilize excessively large loads; heat will not adequately circulate throughout your load for thorough sterility, if the chamber capacity is overwhelmed. Use the large autoclaves for larger loads; however, small loads are permitted in the large autoclaves ONLY when the small autoclave is either unoccupied and/or temporarily out-of-service.
9. Do not place anything on the floor.
10. Pick your items up in a timely manner.
11. If the autoclaves are in use, sign-in as “waiting” status; however, take your stuff back to your lab.
12. Be sure that the autoclave area is left in an orderly condition. All spills must be properly cleaned, debris must be properly disposed of, and all glassware etc. removed in a timely manner.
13. Be patient. If the outside pressure is not at least 15 lb. (see below), the cycle won't start and you will get an alarm indicating the door is not sealed. (NOTE: If the aforementioned occurs, abort the cycle, open the door, and restart the cycle).
14. **Do Not** trouble-shoot autoclave issues. If there is an issue with the equipment, notify either Gemeia Cameron or Sonja Stovall.

Steris Large Autoclaves (PSC 545, 645, 745)

1. If you are the first user of the day, the large autoclave needs to have the outside chamber pressure up to a minimum of 15 lb and up to 21lb. Close the door and allow enough Pressure to build within the Chamber and Jacket (~5 minutes) before starting the cycle.
2. Place items to be sterilized into a stainless steel tray.
3. Align & properly secure the large carrier (cart) to the large autoclave prior to loading trays onto cage (large rack).

4. Place tray(s) into the carrier's cage, release the cage by pushing down the small lever to the left of the carrier, & guide the cage completely into the autoclave.
5. Unlock & Release the carrier by pulling the large black knob located off-center, right of the carrier & then pull the carrier back and away from the autoclave PRIOR to attempting to close the autoclave door.
6. On the Main Menu screen of the autoclave, Press: Close Door. The display will indicate that the door is closed.
7. Press: Select cycle. Select 1 -> 6. Upon selecting a #, you can see what the temp. and sterilization time are for the selected cycle. (Note: If you want to select another cycle, Press: Previous to take you back to the cycle selection screen). Once you verify the appropriate cycle # you require, Press: Start Cycle.
8. Timer will show indicating how long the run will be. It's pretty accurate. The door will partially open and a 10 min. timer will start for autoclave vent. (you can bypass this delay, if needed).
9. Sign into the appropriate logbook & take your lab cart back to your lab until returning.
10. Once your cycle is complete, Press: Open Door.
11. Push the carrier into the autoclave & Align with the autoclave shelving to secure (lock). Slide the cage out of the autoclave & onto the carrier until it locks onto the carrier.
12. Using your heat resistant gloves, mitts, etc. Remove tray(s) from cage. (Note: You can leave the carrier with cage locked into the autoclave when finish removing items).
13. Be sure to sign-out in the appropriate logbook.

Steris Small Autoclaves (PSC 545, 645, 745)

1. If you are the first user of the day, the large autoclave needs to have the outside chamber pressure up to a minimum of 15 lb and up to 21lb. Allow to build enough Pressure within the Chamber and Jacket (~5 minutes) before starting the cycle.
2. Place items to be sterilized into a stainless steel tray.
3. Align & properly secure the small carrier to the small autoclave prior to loading trays onto cages.
4. Place tray(s) into the carrier's cage, release the cage by pulling up the small lever in the center of the carrier, & guide the cage completely into the autoclave.
5. Unlock & Release the carrier by pushing the large silver knob located off-center, right of the carrier & then pull the carrier back and away from the autoclave PRIOR to attempting to close the autoclave door.
6. On the Main Menu screen of the autoclave, Press: Close Door. The display will indicate that the door is closed. (**NOTE: For the small autoclave in PSC 745, Close door by using the foot pedal near floor on the right).**

7. Press: Select cycle. Select 1 -> 6. Upon selecting a #, you can see what the temp. and sterilization time are for the selected cycle. (Note: If you want to select another cycle, Press: Previous to take you back to the cycle selection screen). Once you verify the appropriate cycle # you require, Press: Start Cycle.
8. Timer will show indicating how long the run will be. It's pretty accurate. The door will partially open and a 10 min. timer will start for autoclave vent. (you can bypass this delay, if needed).
9. Sign into the appropriate logbook & take your lab cart back to your lab until returning.
10. Once your cycle is complete, Press: Open Door. **(NOTE: For the small autoclave in PSC 745, Open door by using the foot pedal).**
11. Push the carrier to the autoclave & Align with the autoclave shelving to secure. Slide the cage out of the autoclave & onto the carrier until it locks onto the carrier.
12. Using your heat resistant gloves, mitts, etc. Remove tray(s) from cage. (Note: You can leave the carrier with cage locked into the autoclave when finish removing items).
13. Be sure to sign-out in the appropriate logbook.

Amsco 3041-S (large autoclave, NSC 484)

1. Place stainless steel trays onto large rack.
2. Release rack by pulling small black lever to the left of the cart.
3. Release cart by pulling large black knob. Move cart away from the door.
4. Close door and tighten wheel.
5. Follow directions for Steris large and small autoclaves above.

Amsco SG-120 (small autoclave, NSC 484)

1. Place stainless steel trays onto rack.
2. Push rack into autoclave and move cart away from autoclave door.
3. **Close door by using pedal near floor on the right.**
4. Select cycle.
5. Select one of the cycles and the display will show the sterilization time and vent time for the run. Go to Previous if you want to look at another choice.
6. Start cycle.
7. Timer will show indicating how long the run will be. It's pretty accurate.
8. Once your cycle is done, **use the foot pedal to open the door.**

Electric Autoclaves

Sanyo Labo Autoclave (PSC 645)/New Brunswick AC-48 (NSC 484)

14. Warning: this autoclave takes a really long time to come up to temp., as long as 1 1/2 hrs. It is fairly common for someone to come in and not realize that it is in use and stop the sterilization and take your stuff out. Recommend putting a note

- on the sterilizer “**IN USE**”. If the “°C” is flashing, the sterilization is done and the pressure and temp. are coming down.
15. Use distilled H₂O in autoclave.
 16. Check to see if there is any H₂O in the main chamber. To do this, wiggle the whole unit and look down in the chamber – if you see H₂O through the round hole, do not add anymore H₂O. There should not be standing H₂O in the chamber
 17. Remove the exhaust tank and fill with H₂O to the High level mark.
 18. Open the chamber door and pour H₂O inside (~2 L) until you can physically see H₂O in the round hole in the bottom of the chamber. This will take the H₂O level in the exhaust tank to usually between the HIGH and LOW mark.
 19. Fill the exhaust tank with H₂O to the LOW mark and not over the HIGH mark. Connect the exhaust hose and place the tank inside the unit.
 20. Turn the power switch on (MAIN).
 21. The sterilization temperature (usually 121 °C) should not be changed. Set time, hold timer button down and use arrows to go up and down (there is a lag time for the sterilizer to reach the set temp. and this depends on the volume you are autoclaving; Example, for a 500 ml flask, there is a 15 min. lag, so for a 15 min. sterilization ,set the time for 30 min.).
 22. Place the items to be sterilized into the chamber. There are 2 large round racks that fit into the chamber. Use the solid one for liquids. You can also stack the 2 racks if you have a lot to autoclave. Turn the exhaust knob (control panel right) fully clockwise until it becomes tight. (do not overtighten)
 23. Close the chamber door. Although the door closure light indicator lamp lights up, continue to turn the handle until it becomes difficult to turn. Attach the magnetic safety connector to the back panel. The safety connector is usually wrapped around the lid; unwind and it clicks into the round connector on the left side panel below the main control panel. If for any reason this comes off, the autoclave will shut down.
 24. Press the start button to begin automatic sterilization process.
 25. Come back in ~20 min. to make sure that everything is going as you expect – correct time and temp.
 26. After the sterilization process is completed and the chamber pressure returns to normal atmospheric pressure, the temperature inside the chamber will fall below 80°C. At this point the END buzzer will sound 5 X's. Be sure that the gauge pressure reading falls below 0 before opening chamber door and removing sterilized items. The pressure drops very quickly to 0, but takes a while for the temp. to drop.
 27. Take care when opening chamber as hot H₂O will drip from the underside of the door when opened. Make sure that H₂O does not splash on the control panel.

Hirayama HV-110 (PSC 651/BSL3 lab) large blue autoclave

1. Warning: this autoclave does not take as long to heat up as the above Sanyo, but does take a little while.
2. **Use distilled H₂O in autoclave.**
3. Check to see if there is any H₂O in the main chamber. To do this, wiggle the whole unit and look down in the chamber – if you see H₂O through the round

hole, do not add anymore H₂O. There should not be any standing H₂O in the bottom of the chamber.

4. Remove the exhaust tank and fill with H₂O to the High level mark.
5. Open the chamber door and pour H₂O inside (~2 L) until you can physically see H₂O in the round hole in the bottom of the chamber. This will take the H₂O level in the exhaust tank to usually between the HIGH and LOW mark.
6. Fill the exhaust tank with H₂O to the LOW mark and not over the HIGH mark. Connect the exhaust hose and place the tank inside the unit.
7. The control panel is usually in "Sleep" mode – blank panel. Hit any button to take it out of Sleep mode.
8. Turn the power switch on, lower right in body of sterilizer.
9. Place the items to be sterilized into the chamber. Push the lever on the front of the door to locked (be sure to push the lever all the way or the control panel won't work). You can hear it engage.
10. Mode. Mode (keep pressing Mode to select) – select either liq. Solid or agar (please note that the temp. for agar is 60 °C, this is hot enough to melt agar but does NOT sterilize).
11. Func – select either timer, clock. Print is one of the choices, but there isn't a printer.
12. Func./Timer/Set/Next/use arrow to set hr. if that's how you want to time/or next/use arrow for min./Enter
13. Settings. Temp. - usually 121 °C; or time - there is a lag time for the sterilizer to reach the set temp. and this depends on the volume you are autoclaving. For example, for a 500 ml flask, there is a 15 min. lag, so for a 15 min. sterilization ,set the time for 30 min.).
14. Press the start button to begin automatic sterilization process.
15. Take care when opening chamber as hot H₂O will drip from the underside of the door when opened. Make sure that H₂O does not splash on the control panel.

Steris Steam Dishwashers (PSC, 545, 645, 745)

Common Dishwasher Rules.

1. Remove All labels from dishware prior to loading into the dishwashers. Labels can clog the filters & drains which in turn can cause the equipment to malfunction.
2. Do NOT wash any unstable, cracked, or damaged dishware in the dishwashers; the water pressure can cause the unstable dishware to burst inside the dishwasher.
3. If any glassware breaks, please place the broken glass in the broken glass container.
4. Pick your items up in a timely manner.
5. If the dishwashers are in use, sign-in as "waiting" status; however, take your stuff back to your lab.
6. Be sure that the dishwasher area is left in an orderly condition. All broken glassware must be properly removed and all debris must be properly disposed of in a timely manner.
7. Do Not trouble-shoot dishwasher issues. If there is an issue with the PSC equipment, notify either Gemeia Cameron or Sonja Stovall.

Steris Dishwashers (PSC 545, 645, 745)

1. Align the dishwasher carrier with the dishwasher, secure by locking the wheels in place by pushing down the gray stop tabs on the wheels of the carrier.
2. Gently roll the racks out onto the carrier & place dishware upside down onto the spindles of the racks.
3. Roll the racks back into the dishwasher & lock in place by securing the wheels of the racks in the grooves of the rack shelves.
4. Unlock the gray tabs of the wheels & roll back and away from the dishwasher.
5. On the key pad, Press: Door Close.
6. Press: Cycle Select or use cursors (◀ left, ▶ right, ▲ up, ▼ down) to move to the desired cycle. The selected cycle will begin to “flash” on the screen. (NOTE: Upon initially selecting a cycle, you will have an opportunity to verify the cycle prior to starting. To review the cycle parameters for each cycle, Press: Cycle Review. Once all parameters have been viewed, Press: Cycle Stop).
7. Press: Cycle Start to begin the cycle. Timer will begin as to indicate the length of the cycle. It's pretty accurate.
8. Sign into the appropriate logbook & take your lab cart back to your lab until returning.
9. Once the cycle is complete, Press: Door Open.
10. Push the carrier to the dishwasher & align with the shelving to secure. Push the grey tabs down to lock the wheels. Slide the racks out of the dishwasher & onto the carrier.
11. Remove dishes from racks & slide racks back into the dishwasher. (Note: You can leave the carrier locked in place at the dishwasher when finish).
12. Be sure to sign-out in the appropriate logbook.