

Autoclave Operation

Make sure lab items you want to sterilize are **autoclavable**.

Autoclave-Compatible

Tissue Culture Flasks

Surgical Instruments

Glassware

Pipette tips

Media Solutions

Animal food and bedding

Waste

Polypropylene (Secondary containers)

Stainless steel

Gloves

Autoclave-Incompatible

Acids, bases, and organic solvent

Chlorides, sulphates

Seawater

Chlorine, hypochlorite, bleach

Non-stainless steel

Polystyrene (PS)

Polyethylene (PE)

Low density (LDPE) and High density polyethylene (HDPE)

Polyurethane

NEVER AUTOCLAVE:

- Flammable, reactive, corrosive, toxic, or radioactive materials
- Household bleach
- Any liquid in a sealed container
- Any material contained in such a manner that it touches the interior surfaces of the autoclave
- Paraffin-embedded tissue

If you are not sure if something can be autoclaved, ask a fellow lab member.

Preparing Items for Autoclaving

Dry (Empty) Glassware

If you are sterilizing empty, dry glass labware, autoclave-safe plastic labware, foil-wrapped items, or any other non-liquid item, follow these steps:

- **Glass bottles with caps**- washed, air-dried completely, capped with cap half-loosened, place autoclave tape on top of lid.
- **Plastic large centrifuge bottles with caps**- washed, air-dried completely, capped with cap very loosely covering the opening and **NOT tightened**, place autoclave tape on top of lid.
- **Glass test tubes with caps**- washed, air-dried completely, capped firmly, put in non-labeled rack, place autoclave tape on front of rack.
- **Plastic pipet reservoirs/basins**- washed, air-dried completely, wrapped in heavy-duty aluminum foil with no exposed corners or edges, place one piece of autoclave tape on the whole batch only.
- **Chunking spatulas or other glass/metal utensils**- washed, air-dried completely, wrapped in aluminum foil with no exposed corners or edges, place one small piece of autoclave tape on each item.
- **Glass or plastic containers with no lids (flasks, beakers, etc.)**- washed, air-dried completely, covered in heavy-duty aluminum foil with no holes and aluminum hanging at least 1 inch over the edge of the opening, place autoclave tape on top of the foil cover.



Glassware Containing Liquids

If you are sterilizing liquids in a container with a lid (bottles & tubes) or covered with aluminum foil (glass flasks & beakers), follow the steps here:

- **Glass bottles with caps containing liquid media, water, or buffers-** liquid filled no more than container fill-line, capped with cap slightly-loosened one turn to prevent loss, place autoclave tape on top of lid.
- **Glass bottles with caps containing liquid media with agar-** liquid filled no more than HALF-VOLUME of the container, capped with cap slightly-loosened one turn to prevent loss, place autoclaved tape on top of lid.
- **Glass test tubes with caps containing liquid media, liquid media with agar, water, or buffers-** liquid filled no more than $\frac{2}{3}$ full, capped firmly, put in labeled rack, place autoclave tape on front of the rack.
- **Glass or plastic containers with NO LIDS containing liquid media, liquid media with agar, water or buffers (flasks, beakers, pitchers, etc.)-** liquid filled no more than HALF-VOLUME of the container, covered in heavy-duty aluminum foil with no holes and aluminum hanging at least 1 inch over the edge of the opening, place autoclave tape on the side of the foil cover overlapping on the glass to secure the foil.

Autoclaving Items

*Wear heat-resistant gloves when handling anything inside autoclave

*Try not to press any extraneous buttons

Steris Autoclave (“Autoclave 3” on sign-up, in the back of room)

1. Press the foot pedal to open the autoclave
 - a. don't need to hold down the pedal, and don't need to handle autoclave door.
2. Slide the rack out to load items easier and then load items to be autoclaved.
 - a. All items should be loaded **inside autoclave bins** before placing inside autoclave.
3. Press the foot pedal to close the autoclave.
4. Press the "Select Cycle" tab on the screen.
5. Select your desired cycle (**see notes at end for how to customize cycle times) for autoclaving.
 - a. “Gravity” cycles for non-liquid items
 - b. “Liquid” cycles for items containing liquid

6. Press the "Start" tab on the screen.
7. Record use/name in the #3 binder on the bench behind the autoclave (on the counter by the brooms).
8. When the cycle is complete (screen will tell you how much time is left and when cycle is complete), press the foot pedal to open the autoclave.
9. Use the **heat resistant gloves** to remove the items.
10. Press the foot pedal to close the autoclave.

Primus Autoclave ("New Autoclave" on sign-up, in the front of room)

1. Pull the door down forcefully but without slamming it down (it's heavy) and load items.
 - a. All items loaded **inside autoclave bins** before placing inside autoclave.
2. Close the door by pulling up slowly.
3. **Follow the printed instructions** on the **left side** of the autoclave.
 - a. "Gravity" cycles for non-liquid items
 - b. "Liquid" cycles for items containing liquid
 - c. Instructions will tell you how to choose the number for your cycle
4. Record your use/name in the log binder behind the autoclave.
5. When the cycle is complete, use **heat resistant gloves** to remove your items.
6. Close the door almost all of the way but leave a small crack open.

**How to customize cycle times for on Steris/Autoclave 3:

1. Press "Main Menu"
2. Press "Options"
3. Choose "Cycles" (the sheet of paper will move here - don't worry about it)
4. Select the cycle you want to change
5. Keep "Gravity" cycles as "Gravity", and "Liquids" as "Liquids"
 - a. There should always be two "Gravity"s and two "Liquid"s
6. Once you see screen of the cycle you're changing, press "Ster. Time"
7. Type in new time
 - a. For instance, if you want a sterilization time of 30 minutes, type in **00:30:00**
8. Press "Return" when done
9. Press "Cycle Menu" to access the cycles again