

Autoclave Operation Quick Reference Guide

- ❖ **Training:** ALL users MUST undergo documented training for operation of the autoclave.
- ❖ **Record** each use of the autoclave in a log: Date, User ID, cycle type and nature of material in load
- ❖ **Personal Protective Equipment (PPE)** needed:
 - Wear eye protection, lab coat, gloves along with heat resistant gloves. Rubberized apron, sleeve guards and face shield are recommended when autoclave is hot or splash risk is present.
- ❖ **Hints and Precautions**
 - Become familiar with the manufacturer's operations manual of your autoclave model(s).
 - Plastics used for autoclaving MUST be labeled as autoclavable – otherwise the plastic will melt.
 - Waste bags to be autoclaved must be loosely packed and not more than 2/3 filled. Steam must be able to penetrate to all contents of the bag.
 - Sharps or pointed hard objects should not be placed directly into an autoclave bag; a thicker or rigid container must be used (such as a sharps container).
 - Avoid overfilling an autoclave with loads or allowing a load to contact the chamber walls.
 - Transferring waste contents from an overfilled bag to another bag should be avoided! This practice can lead to injury and/or exposure to contaminants.
 - Do not leave an autoclave operating unattended for long periods of time; operation should be monitored periodically during a cycle in case of failure.
 - Never autoclave solvents, combustible, volatile, flammable, radioactive or corrosive materials (e.g. ethanol, methanol, acids, bases, phenol)
 - Remove extraneous items and combustible materials from around the autoclave exterior.
- ❖ **Loading**
 - Follow manufacturer's loading instructions for your autoclave model
 - Transport loads on a cart and in secondary containers to reduce spills
 - Clean item/container sterilization
 - Loosen caps or lids to avoid dangerous pressure build-up during cycle
 - Place containers in a tray and load the tray into the autoclave – this is easier to load and unload and will catch spills. Do not place items directly on the autoclave chamber floor.
 - To improve heat distribution around the containers, add 1-2 cm of water to the tray
 - Refrain from placing liquid items above non-liquid items on an autoclave rack – this will reduce cross contamination due to spills.
 - Contaminated waste materials
 - Always handle waste bags from the top – never from the bottom
 - Load bags of waste into a secondary tray; do not load directly onto a rack or the autoclave chamber floor
 - Loosen bag tops; add water to bags if needed to assist steam generation
- ❖ **Cycles** (general settings for large autoclaves)

Load type	Temperature	Pressure	Time (min)
Sterilization of clean materials or liquids	≥ 121°C (249°F)	~ 30 psi	15 - 20
Decontamination of Waste	≥ 121°C (249°F)	~ 30 psi	45 - 60

❖ **Unloading the Autoclave**

- Put on the appropriate PPE before opening the autoclave door
- Open the autoclave door ONLY after the cycle is finished.
- Open door a few inches to allow steam to vent for a few minutes before fully opening the autoclave. Keep hands and face away from escaping steam.
- Slowly remove cart and/or trays of items from the autoclave; take care to not touch hot surfaces or spill liquid from pans or containers.
- Place items on a heat tolerant surface and allow to air-cool for 15 minutes (liquids may take up to an hour to cool).
- Put up a sign or notify others in area to avoid touching hot items.

❖ **Spills and accidental breakage**

- Notify a supervisor or department safety officer and follow departmental procedures for a spill or exposure event or injury incident.
- For liquid spills
 - Clean up immediately with appropriate absorbent and disinfectant/cleanser for material. Take care if material is hot from autoclave.
 - If inside a hot autoclave, allow autoclave to cool sufficiently prior to clean up.
 - Post signs warning others in area of spill during clean up, or while allowing area to cool prior to clean up.
- For solid material spill or breakage
 - Clean up immediately using appropriate means for material and disinfectant if necessary
 - Do not pick up broken glass with hands; use dustbin or cut resistant gloves and dispose in proper receptacle.
 - Allow autoclaved items to cool sufficiently prior to clean up.
 - Post signs warning others in area of spill during clean up, or while allowing area to cool prior to clean up.
- INJURY RESPONSE
 - First degree burn on small area of arm or hands: see immediate first aid
 - Second or third degree burns, cuts, abrasions, eye injury, splash or facial burn or large area burn of any degree: This is a medical emergency! Seek immediate treatment at a hospital or call 911.
 - Always notify a supervisor or area safety officer when injury or accident occurs.
 - If biological exposure or release of contaminated materials occurs as a result of the incident a First Report of Biological Exposure or Release Event should be completed.

❖ **Maintenance** - Follow the manufacturer's instructions or contact OBS for information.

❖ **QC Check** - Autoclave efficacy must be tested using a biological or chemical indicator on a regularly scheduled basis.

- The test date, result and related information must be recorded.
- Test schedule is determined by responsible lab-department-group using autoclave;
- Indicators can be ordered through laboratory supply companies or contact OBS for assistance