University of Sydney

Standard operating procedure (SOP) for operating the AUTOCLAVE

An authorized training session must be successfully completed by all users prior to using the autoclave.

Autoclaves are sterilizers that use high temperature steam and high pressure.

Safety
Heat insulating gloves, lab coat, closed toed shoes and eye protection must be worn at all times.

Potential risks of using an autoclave:
- Heat burns: from the instruments or objects placed in the autoclave or from the autoclave itself such as chamber walls, door or trays.
- Steam burns: residual steam may come out of the autoclave when opening it, or from materials placed inside.
- Hot fluid scalds: from boiling liquids or spillage

Material preparation
- Be sure that the material/instruments you are placing in the autoclave can be autoclaved.
- Solvents or substances that emit toxic fumes cannot be autoclaved.
- Glassware must be free of chips or cracks and be heat resistant.
- Loose dry materials must be bagged in steam penetrable bags or loosely wrapped in aluminum foil.
- Containers with liquids must only be 2/3 full and have loosened lids (to prevent pressure build up).
- Sharp items must be designated as “sharps”.
- ALL items must be tagged with autoclave tape. This tape looks like masking tape, however it has stripes on it that turn black to indicate the items have been sterilized properly. Autoclave tape is located in the cabinet above the autoclave.
- All items must be placed on the stainless steel pan- DO NOT PLACE ANY ITEMS ON THE BOTTOM OF THE AUTOCLAVE!!

Loading the autoclave
1. Wear heat insulating gloves, lab coat, safety eyewear and closed toed shoes.
2. Pour distilled water (approximately 250ml) inside the chamber on the bottom.
3. Place items on the stainless steel pan and slide into the autoclave.
4. DO NOT overload the autoclave otherwise steam circulation will be disrupted.
5. Close the door tightly by turning the knob to the right.
**Operating the autoclave**

1. Ensure that the display is showing ‘Load Steam Sterilizer’
2. Check the water reservoir, located on the top of the autoclave on left hand side, and ensure it has enough water. Water level should be approximately 2.5 cm from the top. If this is not the case, please fill ONLY with distilled water from the MilliQ in histology.
3. Select which autoclave cycle you would like to run:
   
   a. STR ONLY- sterilize only cycle, no dry cycle
   
   b. STR/DRY- sterilize and dry cycles
4. Press the “edit” button, then press “enter”
5. Select the sterilization temperature (121°C or 134°C) then press “enter”
6. Set sterilization time using the up/down arrow keys
7. If you are running the STR ONLY cycle then press enter to begin the cycle.
8. If you are running the STR/DRY cycle then continue by selecting the drying time using the up/down keys
9. Press “enter” to begin the cycle.

**DO NOT ATTEMPT TO OPEN THE DOOR WHILE THE AUTOCLAVE IS OPERATING!!!!**

**Unloading the autoclave**

1. Wear heat insulating gloves, lab coat, safety eyewear and closed toed shoes.
2. Ensure the autoclave cycles are complete and the pressure gauge shows zero before opening the door.
3. While standing back from the door, carefully crack the door open about 2.5 cm to allow residual steam release and pressure normalization.
4. Allow items to cool in the autoclave for at least 10 minutes.
5. If unloading liquids: Do not agitate containers filled with liquid or remove their caps before unloading
6. After 10 minutes carefully remove items and place in an area that is clearly marked HOT ITEMS until the items have cooled to room temperature.
7. Once all items are removed loosely close the door.