

## CSU Sterilization Procedures

**Note:** For a full explanation of sterilization see the School document Sterilization Techniques.

### Preparation for Sterilization

Items requiring sterilization must be prepared for either *dry heat sterilization* or *moist heat sterilization* i.e. **autoclaving**.

- **Dry heat sterilization:**
  - Lid bottles or place items in an appropriate container e.g. Pipette canister or wrap in alfoil. Note the container/wrapping must be resistant to the high temperatures of dry heat sterilization.
  - Label packaging where necessary.
  - Tape with heat reactive dry heat tape.
- **Autoclaving:**
  - Lid bottles, loosely for empty bottles and “just tight” for liquid filled bottles.
  - Wrap material in alfoil, in an autoclave bag, or a pipette canister.
  - Tape with pressure sensitive autoclave tape.
  - Label where necessary.

### Sterilization

#### **Dry heat sterilization:**

Place load in the sterilizing oven.

Set time for 3 hours.

Set temperature at 150C.

Start.

After run allow the load to cool then distribute to shelves and/or owners.

#### **Autoclaving:**

**Note:** all autoclave runs must have at least one piece of autoclave tape, which must be checked after each run. If the tape has not correctly changed colour report this to your supervisor immediately.

#### **“Clean” Material**

Pack the trolley/autoclave for the correct program:

- **Wet – for all liquids:** In general “wet” programs will be 121C for 20 mins but this may be varied for volume of the load and/or the type of material being autoclaved. The steam pressure will be slowly released (“exhaust”) and there is a cooling period to prevent “boilover”.
- **Lab-vac for empty glassware, equipment etc.** The “Lab-vac” program draws a vacuum prior to steam injection. This ensures the steam enters all vessels and the whole load reaches the required temperature. Settings are: 121C for 14 Mins.
- **“Dry”** This program is for empty glassware mostly unlidded and equipment. As this system depends on downward displacement of air it is important that the load is correctly packed, consult your supervisor. Settings are as for Lab-vac.

## **Waste Material**

### **Note:**

- Complex regulations govern the disposal of waste; variations from these systems are only allowed, with permission from the Safety Co-ordinator.
- All waste, that requires autoclaving, is processed in the Lab-vac autoclave in MLS room 4.36.
- Mixed Loads of liquid and bags is not allowed.

### *Four types of waste will be presented:*

- *Plastic bagged in lidded red crates:* Lids must be removed, the bags must not be disturbed; these are autoclaved in a lab-vac program only.
- *Sealed wet-bags:* these are autoclave in a lab-vac program the bag is not disturbed in any way.
- *Lidded stainless steel buckets:* Autoclaved in a lab-vac without removing the lid.
- *Lidded containers of Liquid:* Autoclaved using a "wet" program.

All loads will have a piece of autoclave tape, which will be inspected after the run.

## **Monitoring Procedures**

- Autoclave tape chemical indicator and the autoclave printout is checked each run. If the colour change is not correct suspend autoclaving and report to your supervisor.
- The print out from the **waste** loads each day will be filed.
- All autoclaves are tested using a spore test once per month. (See below)

## **Spore Test Procedure**

These instructions are for the 3M Attest system using 1262 indicator in 121C moist heat autoclave.

- Write the serial number, of the autoclave being tested, and the date on the indicator vial.
- Check the label is rose-coloured.
- Place the indicator vial in the centre of a full load, as close to the chamber drain as possible i.e. the coldest place. The indicator vial can be suspended in the centre of a container of liquid if necessary.
- Taking appropriate safety precautions reclaim the indicator vial.
- Allow to cool for 5 – 10 mins.
- Check the label of the indicator vial it should have changed from rose to brown.
- Place the indicator vial in the Special 3M Incubator (see procedure below).
- Place an unheated (label still rose coloured) indicator vial in the Special 3M Incubator (see procedure below).

### **Wearing Safety Glasses:**

- Position the bottom of the indicator vial in the incubator metal block so it is at an angle of 45 degrees. Be sure the vial cap will be above the block when you complete action b.
- Push the indicator vial back into the block. (This crushes media ampoule inside the vial and activates the indicator).
- Push the vial down until only the cap is above the block.
- Incubate for 48 hours.
- Inspect the indicator vials at 12, 18, 24 & 48 hours.
- Record any colour change in the Spore Test Log.