|  |  |
| --- | --- |
| Standard Operating Procedure for:  **Using portable autoclaves** | PPE required: |
| The portable autoclaves (Dixon Express and Automatic types) are a reliable method of sterilising equipment and media. THESE AUTOCLAVES MUST NOT BE USED FOR WASTE DISPOSAL.  To ensure sterilisation items must generally reach temperatures of 121ºC. All items must be clean and, where appropriate, open to the atmosphere within the autoclave (e.g. caps loosened etc.). Any contamination remaining on the instruments will leave non-sterile areas underneath the contamination. The autoclaves are checked for pressure safety each year. Any problems with the autoclaves should be reported immediately to a technician. You can place one or more autoclave strips mixed in with the load if you want to check sterilization has occurred.  **TRAINING REQUIRED** |
| **Before use**  **All equipment should be cleaned before sterilization.**   1. Fill autoclave with DI water to **just cover the metal studs** in bottom (water should be just visible at bottom of the inner metal liner). 2. Pack samples / bottles in the stainless steel basket provided (alternatively use an unsealed autoclave bag) DO NOT OVERFILL. **If autoclaving Schott bottles, loosen the lid one half turn to minimize pressure build up.**   (60% autoclave volume max. ≈ 10L media + containers)   1. Replace and screw lid down tight. Make sure that the large side valve is set to ‘closed’ position.   **DURING USE THE OUTSIDE OF THE AUTOCLAVE WILL BECOME HOT AND COULD CAUSE BURNS. ALSO, HIGH TEMPERATURE STEAM MAY BE EJECTED FROM THE AUTOCLAVE.**  **Use of Dixon Automatic type**   1. Plug in the power cable and the electronic ‘VARIO’ control box 2. Turn power on at the mains plug and at the autoclave 3. Select the cycle to be used as appropriate for your sample. Alternatives can be programmed if required (100-121oC 1-99mins)  |  |  | | --- | --- | | A | 30 mins @ 115 oC | | B | 15 mins @ 121 oC (use for media sterilization) | | C | 30mins @ 121 oC (use for sediment sterilization) | | D | 60mins @ 115oC |  1. Press the start button 2. Check that the autoclave has reached the appropriate temperature and pressure from gauges on top of the autoclave. 3. After the cycle, allow to cool to **40oC**. Check this before removing samples from the autoclave. 4. Empty any residual water from the autoclave to prevent corrosion. If the autoclave becomes corroded it will need to be replaced!   **Use of Dixon Express type**  This system is not automatic so **must not be left running overnight**:   1. Plug in the power cable and turn on power at mains plug. 2. Wait for the temperature to reach 100oC then open the pressure release valve on top (BE CAREFUL OF HOT STEAM BEING RELEASED) 3. Wait until jet of steam has become consistent – not jittery (approx. 1-2 mins) 4. Close the pressure release valve and wait until desired temperature and pressure have been reached 5. Leave for desired period of time (see above for examples) after time has elapsed turn off autoclave at mains plug. 6. After the cycle, allow to cool to 40oC. Check this before removing samples from the autoclave. 7. Empty any residual water from the autoclave to prevent corrosion. If the autoclave becomes corroded it will need to be replaced! | **Hazard symbols:** |
| **Significant hazards:**   * Hot steam * High pressure * High temperatures |
| **Hazard phrases (H):** |
| **Can it be done out of hours?**  **The autoclaves should not be used out of hours.** However, automatic type can be left running overnight. |
| **This SOP is not relevant in the following circumstances:**   1. SOP does not cover specific experimental risk these must be covered by user’s assessments 2. Any other situation where the procedure may result in harm to yourself or others. | |