**SOP**

**Operation and Maintenance of the Autoclave**

**Document Number XX**

**Version History**: This is version 1.XX

**Purpose**

This SOP describes the procedure for regular operation and cleaning of the autoclave, as well as the MIT guidelines for quarterly validation.

**Scope**

This SOP is intended specifically for Good Laboratory Practice (GLP) guidelines, and is not targeted towards Good Manufacturing Practice (GMP) guidelines. It is meant to support other SOPs referencing a steam-sterilization step.

**Regulatory References** Not applicable

**Responsibility**

Responsibility of users: Follow standard operating procedure when using the autoclave.

Responsibility of lab manager: Complete maintenance checklist weekly. Train new users on proper use of the autoclave; verify adherence to protocol. Participate in MIT’s quarterly validation protocol.

**Definitions/Abbreviations** NA

**Related Documents** NA

**Required Equipment and Materials / Reagents**

This SOP covers the use and maintenance of a Forge Industries Inc. Sterilmatic bench-top autoclave, Model No. STM-E.

**Precautions**

This autoclave is intended for steam sterilization of small batches of culture medium and laboratory supplies. It is important to avoid contact with steam efflux, and to wait until pressure has reduced to 0XX prior to opening the door.

Users must wear a lab coat, and heat-safe gloves when removing sterilized items.

**Procedure**

Protocol for using the autoclave:

1. Sterilize liquids and solids separately.
2. For liquids, unscrew bottle caps 1/4 - 1/2 turn, and mark the seal with autoclave tape. Arrange in a secondary containment basin, and add 1/4” of DI water to the basin.

Minimum recommended exposure times for flasked solution temperature setting

|  |  |
| --- | --- |
| Amount per container | Time |
| 75 ML | 30 |
| 250ML | 35 |
| 500ML | 40 |
| 1000ML | 45 |
| 1500ML | 50 |
| 2000ML | 55 |

1. For solids, seal with foil and mark the seal with autoclave tape. Arrange in a secondary containment basin, and be sure to allow space between items.
2. Place the basin on the autoclave shelf.
3. Check the water level; if necessary, refill the autoclave with DI water just until the level reaches the lower level of the door, as indicated by the sticker.
4. Shut the door.
5. Select “fast” for solids, or “slow” for liquids. This setting determines how fast the autoclave will exhaust following sterilization.
6. Turn the dial to “30”. Observe tiny bubbles escaping from the door, and watch for them to go away - the door is now sealed.
7. Allow the temperature and pressure to decrease prior to opening the door after the process is complete.

Protocol for weekly maintenance of the autoclave:

1. Drain the water from the autoclave chamber. This water is sterile and can go down the drain. Rinse the cavity 1-2 times with fresh DI water.
2. Double check that the exhaust carboy is not too full. Empty it in the sink if necessary. Ensure the exhaust hose is fully coiled within the carboy prior to running the autoclave.

**Worksheets** NA

**Appendix** NA