

## **USCG 907 – Autoclave Use and Safety**

**Last Update: 11/5/13**

### **PURPOSE**

To provide guidelines for maintenance and use of autoclaves on University premises.

### **AUTHORITY**

Florida Administrative Code 64E-16 (64E-16.007)

### **SCOPE**

All research labs and facilities using autoclaves.

### **GUIDELINES**

#### **Introduction**

Autoclaves are used for the sterilization of materials/supplies for laboratory use and contaminated items for disposal. Autoclaves use saturated high-pressure steam to achieve sterilization temperatures, so proper knowledge, training, use, and maintenance is important in ensuring operator safety.

#### **Training**

All persons using autoclaves should be trained by an experienced user within your area or training should be requested through the manufacturer as needed. Completion of the EH&S bio-medical waste management, lab safety, hazard communication, bloodborne pathogen (if applicable), and PPE on-line courses is also required.

#### **Operation Procedures**

##### **Preparation of Materials**

- Place biological waste bags and liquid containers in a stainless steel or autoclave-appropriate pan in case of a spill.
- Fill liquid containers only half-full.
- Loosen caps or use vented closures.
- Space should be left between items to allow the steam to circulate.

##### **Cycle Selection**

- For autoclaving liquids, use the liquid cycle (121°C, 15 minutes for under 2 Liters).
- Select the fast exhaust cycle for glassware (135°C for 3 minutes)
- The fast exhaust cycle with a dry cycle is used for wrapped items (135°C for 3 minutes and 15 minute drying time)
- Bags containing biological waste should be autoclaved for 50 minutes to assure decontamination.

##### **Removal of Materials**

- Make sure the chamber pressure has returned to zero before opening the door
- Wear the appropriate PPE prior to removing any material from the autoclave (heat insulating gloves, eye protection, lab coat, and close-toe shoes)

- Stand behind the autoclave door before opening. Slowly open the door and allow the steam to gradually escape from the chamber.
- Allow materials, especially liquids, to cool for 20 minutes before removal.

### **Maintenance**

- Autoclaves should be maintained according to the manufacturer's schedule, specifications, or recommendations.
- If the manufacturer's specifications are not available, a maintenance schedule is to be determined by the facility.
- Efficiency (e.g. *Bacillus stearothermophilus* spore testing) testing should be performed periodically to ensure the autoclave is working properly.

### **Recordkeeping**

- All autoclaves must have a log book that includes the following information: the operator's name, lab location, phone number, date, and type and amount of material.
- Prior to autoclaving any material, autoclave users must fill out all information requested in the autoclave log book.
- All monthly quality assurance tests should be documented.

### **Safety Reminders**

- Radioactive, hazardous (acids, ethanol, chloroform), pathological (body parts, carcasses, organs), sharps, and mixed waste cannot be treated in an autoclave. Please contact the following areas for disposal:
  - Radioactive waste 348-0489
  - Biological waste 348-3387
  - Hazardous waste 348-2622
- Make sure the drain strainer is clean before using the autoclave.
- Never attempt to open the door while the machine is operating.
- Notify the area/lab supervisor if the autoclave is not functioning properly so that repairs can be scheduled. **Do not** attempt to make repairs to the autoclave.
- Use of the autoclave is **prohibited** until repairs are made, and a sign must be posted by the area/lab supervisor warning others not to use the autoclave.

For further information please contact the Department of Environmental Health and Safety at 348-2621.