Environmental Health & Safety
502.852.6670

Safe Science = Good Science

September 30, 2022

Safety Precautions:

Ensure all users have been properly trained
All glassware should be inspected prior to autoclaving
Always wear suitable PPE: eye protection, lab coat, heat resistant gloves
When sterilizing liquids, use the liquid cycle.
Do not agitate containers of hot liquids.
Always use a secondary autoclavable tray to catch liquids or broken glass.
Allow materials to cool before transporting.
Ensure lids are loosely closed to prevent pressurization.

Check This Out!

Watch this short video to learn more about what happens inside the autoclave.

Autoclave Safety Animation in English - YouTube

For questions or concerns please call DEHS at 852-6670 or email dehsubm@louisville.edu

Autoclave Safety

Autoclaves provide a physical method for disinfection and sterilization. Sterilization refers to the complete killing of all living organisms, including spores. The type of material, the container, and quantity of items to be sterilized determines which method to use. Autoclaves operate at high temperature and pressure in order to kill microorganisms and spores by working with a combination of steam, pressure, and time. Despite built-in safeguards, an autoclave presents the possibility of serious injury to personnel from hot surfaces and from the release of steam. It is important, therefore, that laboratory personnel understand the proper operation, limitations, and safeguards for sterilization by autoclaving.

Associated Risks

Users must be trained on the specific autoclave they will be operating.

Autoclaves are sterilizers using high pressure and high temperature steam. The potential safety risks for the operators are:

- Heat burns -from hot materials and autoclave chamber walls and door
- Steam burns -from residual steam coming out from autoclave and materials on completion of cycle
- Hot fluid scalds from boiling liquids and spillage in autoclave.
- Hand and arm injuries when closing the autoclave door.
- Body injury if there is an explosion

Autoclave Compatibility Chart

Autoclave Compatible	Autoclave Incompatible
Polypropylene	
Glassware (Pyrex® or Type I borosilicate)	Chlorine, Hypochlorite, Bleach
Stainless Steel	Acids, Bases and Organic Solvents
Pipette tips	Chlorides
Waste	Sulfates
Media solutions (Fill up to 2/3 of the container and loosen caps)	Sea water
Tissue Culture Flasks	Polystyrene
Animal Bedding and Food	Polyethylene
	Polyurethane