# Autoclave Use and Safety

## Autoclave Hazards

- **Heat & Steam**
  - Burns
  - Scalds
- **Shattered Glass & High Pressure**
  - Cuts
  - Eye Injury
- **Infectious Waste**
  - Biological Exposure

*Biological exposure may result from inappropriate cycle selection, incorrect packaging, or autoclave failure.

## Safe Use Practices

- **Inspect** for spills or debris; **check** door gasket for cracks or bulges; **inspect** glassware for cracks.
- **Check** that plastics are compatible with the autoclave. Not all plastics can be autoclaved.
- **Allow** sufficient space between items for steam. For **bagged items**, loosely tape or tie closed. Leave an opening for steam to penetrate the bag. For **liquids**, leave caps loose or cover with foil to allow steam penetration and pressure release.
- **Use** secondary containment in case of spillover and lead-free autoclave tape to **ensure** 121°C is reached within the chamber.

## Personal Protective Equipment

- **Basic Gear**
  - Safety Goggles
  - Heat Resistant Gloves
  - Lab Coat, sleeves extended to the wrist
  - Rubber Apron
  - Long Pants
  - Close-toed Shoes

## Additional Gear when Autoclaving Liquids

- **Face Shield**

## Train and Maintain

- **Designate a responsible person** for the autoclave. The responsible person will train users and establish SOPs.
- **All training must include a hands-on demonstration** and a supervised run.
- **Implement a regular maintenance schedule** to ensure safe operation. Per **CDC guidance**, a monthly spore test must be conducted if autoclaving infectious waste.

## Decision Rules

- **Do not autoclave** flammable, combustible, reactive, corrosive, toxic, or radioactive materials.
- **Do not agitate** containers as boiling or superheated liquids can explode if moved too quickly.
- **Do not fill** liquid containers more than 75% capacity to allow room for expansion.