## Materials Sterilization and Biohazardous Waste Decontamination Guidelines

### User Precautions
- **Record** each use of the autoclave
- **Wear** eye protection, lab coat, gloves and heat resistant gloves
- **Plastics** used for autoclaving MUST be autoclavable
- **Loosely** pack waste bags no more than 2/3 full
- **Sharps** must not be placed directly into an autoclave bag; use a rigid container
- **Avoid** overloading an autoclave or allowing a load to contact the chamber walls
- **Avoid** transferring waste contents from an overfilled bag to another bag
- **Do not** leave an autoclave operating unattended for long periods of time; periodically monitor in case of failure
- **Never** autoclave solvents or combustible, volatile, flammable, radioactive or corrosive materials
- **Remove** extraneous items and combustible materials from the autoclave area

### Loading
- **Follow** manufacturer’s loading instructions for your autoclave model
- **Transport** loads on a cart and in secondary containers or trays to reduce spills
- **Item/container sterilization**
  - **Loosen** lids to avoid dangerous pressure build-up during cycle
  - **Place** containers in a tray and load the tray into the autoclave. Do not place items directly on the autoclave chamber floor
  - **Improve** heat distribution around containers, by adding 1-2 cm of water to autoclave trays.
  - **Refrain** from placing liquid items above non-liquid items on an autoclave rack

### Contaminated bagged waste materials
- **Always** handle waste bags from top
- **Load** bags of waste on a tray; do not load directly onto a rack or the autoclave chamber floor
- **Loosen** bag tops; add water to bags if needed to assist steam generation

### Preparation
- **Dirty/Soiled** Place in autoclavable pans on side or inverted
- **Clean** Wash Rinse Wrap (if needed)
- **Fabrics** Wrap
- **Instruments** Clean and Dry Lay in Pan Wrap
- **Loosen caps or use vented closure. Fill to no more than 75% capacity.**
  - *Use type I borosilicate glass*
- **No more than 2/3 full Close loosely. Place in autoclavable pan.**
  - *Affix indicator if needed*

### Placement in Autoclave
- **On side or inverted in pan with water**
- **On side or inverted**
- **Separated on edge**
- **Flat**
- **Upright in pan**
- **In Pan**

### Cycle Time in Minutes (minimum)
<table>
<thead>
<tr>
<th>Typical Articles</th>
<th><em>Glassware</em></th>
<th>Dry Items</th>
<th>Liquids</th>
<th>Biohazard Bags</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dirty/Soiled</td>
<td>45-60</td>
<td>15-20</td>
<td>15-20 (clean)</td>
<td>15-20 (clean)</td>
</tr>
<tr>
<td>Clean</td>
<td>45-60 (dirty)</td>
<td>45-60 (dirty)</td>
<td>45-60 (dirty)</td>
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<tr>
<td>Fabrics</td>
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<tr>
<td>Instruments</td>
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</tbody>
</table>

### Notes
- *Glassware with cracks or deep scratches may break*
- Hot bottles and liquids may explode! Allow to cool before moving
- Avoid puncturing biohazard waste bags
- Dispose of waste properly after autoclaving

### Routine Maintenance and Efficacy Testing
- **Follow** the manufacturer’s instructions or contact the UW-Milwaukee Biosafety Program for information
- **Autoclave efficacy must be tested** using a biological or chemical indicator on a regularly scheduled basis (minimum monthly)
- **Record** test date, result and related information
- **Indicators** can be ordered through lab supply vendor(s)

### Spills and accidental breakage
- Notify a supervisor and biological safety officer and follow departmental procedures for a spill or exposure event or injury incident
- Post signs warning others in area of spill during clean up, or while allowing area to cool prior to clean up
- For liquid spills:
  - If inside a hot autoclave, allow autoclave to cool sufficiently prior to cleanup.
  - If possible, clean up immediately with appropriate absorbent and disinfectant/cleanser for material. Take care if material is hot from autoclave.
- For solid material spill or breakage:
  - Allow autoclaved items to cool sufficiently prior to cleanup.
  - Clean up immediately using appropriate means for material and disinfectant if necessary.
  - Do not pick up broken glass with hands; use dustbin or cut resistant gloves and dispose in proper receptacle

### Biological Safety Program
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The UW-Milwaukee Institutional Biosafety Committee (IBC) requires that Principal Investigators report all potential exposures to or releases of organisms or biological toxins within 24 hours of the event by completing a **FIRST REPORT of Exposure/Release Form**

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Adapted from UW-Madison Biosafety Program