Autoclave and Radiation Safety

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Autoclave Use

- Used to sterilize growth media, reagents, and laboratory apparatus
- Used prior to disposal of microbial cultures for control of biohazards
- Works with building steam
- 15-30 psi pressure
- 120-135 °C
Guidelines for Autoclave Use

- Be careful about high heat and pressure
  - Do not attempt to open the door while the system is pressurized
  - Stand back from the door when it opens at the end of a run
  - Many surfaces in the unit are hot
  - Wear protective gloves and avoid contact

- Clean the unit after use, especially if there is broken glass or other solid materials which may block the drainpipes

- **DO NOT LEAVE YOUR AUTOCLAVED MATERIALS IN.** Set a timer, and when the cycle is done, go and take your materials from the autoclave

- Contact Tugba Yildiz (Ames 313, 410516-6028, tugbayildiz@jhu.edu) for specific questions and instructions about the autoclave operation
Radiation Safety

• We have a formal and organized program to deal with radioactive materials
• The university follows Maryland and Federal regulations
• Our goal is to insure that the exposure of individuals to radiation is kept as low as possible (and certainly within regulations)
• The ultimate responsibility for radiation safety lies with each one of us!
Contact Information

• JHU Radiation Safety Officers
  • Carl Granlund (East Campus, Suite B-200), 410-955-3710
cgranlun@jhmi.edu
  • Mina Razavi (Mudd Hall), 410-516-7278
mina@jhu.edu

• Licensee
  • Ed Bouwer (Ames 307), 410-516-7437
bouwer@jhu.edu
Responsibilities

- Radiation Safety Officers
  - Enforce the rules, provide training, and accept radioactive waste

- Licensee
  - Comply with rules 24/7, provide training and supervision to workers, and maintain proper records

- Individual
  - Safe handling of radioactive materials so that the cumulative annual dose is kept below 100 millirem.
  - Follow good laboratory practice
General Guidelines

- Read the JHU Radiation Safety Manual
  - Contains procedures, suggestions for handling radionuclides, and methods to calculate and limit exposures
- Attend JHU Radiation Safety Training session
- Become familiar with the characteristics and hazards of the radionuclide being used
  - Alpha, beta, or gamma emitter
  - Decay half-life
  - Radiation energy
  - Biological half-life
  - Shielding/protection options
Good Housekeeping

• Weekly the labs are “wipe-tested” to spot check for radioactive sources and spills.
  ▪ See map and printed sheet for locations
• Use survey meter to check for radioactive contamination (if applicable)
• Signs and radioactive tape are used to clearly mark where radioactive materials are used
• All spills of radioactive material must be immediately contained and proper decontamination carried out
• Report all spills to Radiation Safety
• Keep accurate records of receipt, transfer, and disposal of radioactive materials
• Follow the printed document on “Radioactive Waste Disposal Procedures”
Note: Ames 409 will be wipe tested weekly. All other locations will be wipe tested weekly only when they are actively being used for radioactive research and immediately thereafter.