

# Laboratory Safety

Materials Science and Engineering  
Fall 2009

# Chemical Hygiene Plan

- All laboratories that use hazardous chemicals are required by law to have a Chemical Hygiene Plan.
- Clemson University has a Chemical Hygiene Plan available online:  
<http://ehs.clemson.edu/cehsp/ChemHygienePlan2005/chemhygiene.htm>

# Chemical Hygiene Plan

- Signs that tell the location of Clemson's Chemical Hygiene Plan must be posted in laboratories.
- Hard copies of the Chemical Hygiene Plan should be readily available to all who work in chemical laboratories.

# Chemical Hygiene Plan

- All employees must sign the Chemical Hygiene Plan Awareness Certification form as well as the employee/student safety checklist.
- Both of these forms can be found within the Chemical Hygiene Plan.
- Signed forms may be turned into Jae Lowe to be kept for inspection.

# Mandatory Training

- Chemical safety training is available online at [www.clemson.edu](http://www.clemson.edu)
- Go to the Environmental Health and Safety page.
- Choose [On-line training](#).

# Mandatory Training

- All Graduate Students, Student-Workers, and Employees working in laboratories for Materials Science and Engineering MUST complete the following training online:
  - Chemical Hygiene
  - Hazardous Waste Management

# Mandatory Training

- After completion of the online training please e-mail your name, the name of your supervisor/instructor, and the building(s) that you work in to [jaelowe@clemson.edu](mailto:jaelowe@clemson.edu)

# Chemical Inventory

- Every professor should designate a graduate student to be in charge of their chemical inventory.
- Chemical inventories for every laboratory at Clemson have to be turned into EHS by February 15<sup>th</sup>.
- Completed inventories should be e-mailed to [jaelowe@clemson.edu](mailto:jaelowe@clemson.edu) by the end of January so they may be compiled into the master inventory for MSE.

# Chemical Inventory

- The proper inventory form can be found on the EHS website:  
<http://ehs.clemson.edu/cheminventory.xls>

# Laboratory Operating Policies

- No food or drinks allowed in any lab.
- Hallways and aisles are to be clear at all times.
- Practice good housekeeping in laboratories.
- Request Material Safety Data sheets from vendors. Keep these in the lab where the chemical is used and stored.

# Laboratory Operating Policies

- Take proper precautions to clean spills. Consult the MSDS to accomplish this. Alert others of the spill.
- Only use chemical hoods that are operating properly.
- Ensure that others working under your supervision follow proper safety procedures.

# Laboratory Operating Policies

- Make sure that all chemicals are labeled properly. Date chemicals when they are received.
- Properly dispose of chemicals when no longer needed.
- Chemicals should be safely segregated and stored.

# Laboratory Operating Policies

- Understand how to safely handle compressed gas cylinders before using them.
- Avoid working alone in a building; do not work alone in a laboratory if hazards are present.
- Every chemical lab should have a safety shower and eyewash station; do not hesitate to use them if needed.

# Laboratory Operating Policies

- Make sure that you understand instruments and machines you are using. Make sure that machine guards are in place.
- Keep keys and key codes confidential within the MS&E community.
- No visitors are allowed in the labs without authorized personnel.

# Personal Protective Equipment

- Safety glasses or prescription glasses with side shields should be worn in all labs.
- Facial protection should be worn when necessary.
- Contact lenses are discouraged.

# Personal Protective Equipment

- Protective clothing such as gloves and lab coats should be worn when handling chemicals.
- Shorts, short skirts, and sandals/open shoes are not allowed in laboratories.

# Hazardous Waste Disposal

- Everyone MUST take the hazardous waste disposal training mentioned previously before disposing of chemical waste.
- Be sure to label each chemical being disposed with the proper chemical name and hazard class.
- Do not put a date on the chemical being disposed.

# Emergency and Accident Procedures

- In the event of an accident or emergency call 911 or 656-2222 for Clemson Police/Fire/EMS.
- Redfern Health Center is not set up to help those needing urgent care.
- For all emergencies involving chemicals a MSDS should be given to EMS personnel upon their arrival.

# Emergency and Accident Procedures

- As soon as possible report your emergency to Shelby Sheriff(656-3187) who will report it to CU Risk Management Department and Compendium Insurance Company (workman's Comp.).