



The Lab Rat NEWS

“Summer Edition”

Safety When Using Cryogenic Substances

Cryogenic substances are used in research to maintain ultra-cold temperatures. Liquid nitrogen is hazardous because it can maintain temperatures as low as degrees -153°C (-243°F). In addition, liquid nitrogen releases vapors that can deplete the available oxygen in the area. Dry ice, which is solid carbon dioxide also presents a hazard. Dry ice begins to sublime at temperatures above -78°C (-109°F). This means the solid carbon dioxide is converted directly to carbon dioxide vapor and can create an oxygen deficient atmosphere.

The low temperatures of dry ice and liquid nitrogen can burn skin upon contact and prolonged skin exposure can freeze bare skin causing frost bite. For these reasons, dry ice and liquid nitrogen require special handling to protect the skin, face, and eyes. Additionally, the areas where lab workers handle these substances must have adequate ventilation. Adequate ventilation means providing ventilation that can limit the accumulation of nitrogen or carbon dioxide vapors.

The following list provides examples of safe work practices:

- * Avoid eye, face, and skin contact with liquid nitrogen or dry ice. Always wear safety glasses, lab coat, and close-toed shoes.
- * Never handle dry ice or liquid nitrogen with bare hands. When retrieving samples or vials from freezers, wear cryogenic gloves to protect the skin on your hands, wrists, and forearms. For additional protection from liquid nitrogen, purchase water proof cryogenic gloves
- * Do not use or store dry ice or liquid nitrogen in confined areas. Proper ventilation is required to prevent oxygen from being depleted from the atmosphere.
- * Never store a cryogen in a sealed, airtight container. The pressure from vapors can cause an explosion.
- * When filling containers with liquid nitrogen (e.g. dewar flasks, carboys) be sure the transfer line is stable and secure. If the transfer line is not secured during filling, liquid nitrogen can be spray out of the container. This can present a skin contact hazard.
- * If you need to ship samples using liquid nitrogen or dry ice, you must have completed Shipping Training in the past two years.

References:

- OSHA Website: “OSHA Quick Facts—Cryogenics and Dry Ice.” Web. 14 May 2013 <https://www.osha.gov/Publications/laboratory/OSHAquickfacts-lab-safety-cryogenics-dryice.pdf>

Training

Most of EHSO's Trainings are available online. www.ehso.emory.edu for registration information.

Radiation Safety Training

2nd Tuesdays at 10:00 am

Laboratory Safety Training

3rd Thursdays at 10:00 am

Chemical/Radioactive Waste Pick-up Schedule

Full Schedule here...

All **chemical** waste pick up should be requested by emailing

chemwaste@emory.edu

All **radioactive** waste pick up should be requested via EHS Assist pick-up.

Chemical waste disposal inventory form and/or **radioactive** waste inventory form should accompany all waste containers at the time of pick-up.

PPE

Choice to be based on potential exposures involved:

Eye: Glasses, goggles & face shields

Gloves: Appropriate for the type of procedure
Clothing: Gowns, lab coats, aprons, coveralls

Respirators: Appropriate for the type of procedure

Electronic Waste Recycling

Electronic Wastes (e-waste) may contain heavy metals in quantities that are prohibited from landfill disposal and should be recycled whenever possible. Please note that equipment that can be reused is not waste and can be collected by Surplus Properties for possible redistribution.

The following are examples of e-waste that must be recycled:

- Lab equipment
- Computers, Laptops, Monitors, Hard drives, Keyboards
- Printers, Copiers, Fax machines
- Microwaves
- Phones
- Anything with a circuit board



Cell phones, calculators, DVDs, and AC cords may also be recycled. University-owned electronics should be recycled through Emory Recycles and Surplus Properties.

Note: Personal electronics are recycled twice a year through [Emory Recycles](#). You can contact Campus Services Customer Service to schedule a pick up at 404-727-7463 or cscsc@emory.edu. More information on electronic waste can be found on the EHSO website at <http://www.ehso.emory.edu/content-forms/EWasteQuickFacts.pdf>.

Remember: Label any unwanted e-waste as “Surplus– To be Recycled” and affix the Equipment Hazard Tag.



Biosafety SOP Template Example on EHSO Website

We now have a wonderful example of a Biosafety Standard Operating Procedure (SOP) document on our website. This document serves as an excellent example of how labs can use the Biosafety SOP Template to draft laboratory specific SOPs for work with biological and infectious material.

Many thanks to Kathryn Hudson in Dr. Thomas Kukar’s lab in the Pharmacology Department for going above and beyond in writing such a great SOP and allowing us to share it with the Emory Community, promoting a safer lab environment.

Biosafety SOP Example: [click here](#)

Biosafety SOP Template: [click here](#)

Eye Wash Testing

Eyewash Stations should be tested once a month by lab personnel

Certifications

Biosafety Cabinets, Geiger Meters and Chemical Fume Hoods Certifications are required annually.

Fire Extinguishers

Visual fire extinguisher inspections conducted monthly:

- A. Is it present and mounted in its proper location?
- B. Is it readily accessible?
- C. Initial and date attached tag.

If it appears to need servicing contact the Maintenance HELP line at 7-7463

Tell us how we are doing!

The newsletter has a new home. Every individual article is now hosted online at blogs.emory.edu/labratnews/

Got something to share? [Tell us!](#) Post comments, related articles/links, and safety concerns.

Feel free to also send your comments to biosafe@emory.edu.

We look forward to reading your ideas and comments!

Building Liaisons

[Click here](#) to find your building’s Radiation and Research liaisons.

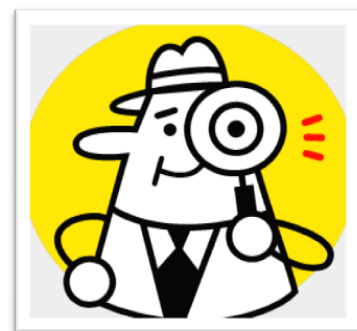
EHSO Inspections—We like what we see !!

EHSO Inspections are underway in the research labs! We have inspected approximately 60 labs and we want to acknowledge how safe the researchers are working. Here are some good things we've noticed in the labs:

Sharps – Labs are using the appropriate sharps containers. Sharps containers are in a locations close in proximity to the point of use. Sharps containers are not overflowing. Finally, the labs are aware of the proper disposal method for a full sharps container.

Lab Rat Newsletter – The newsletter is a method of ongoing training for the research community. EHSO recognizes that it takes time to ensure that all lab personnel have an opportunity to review the Lab Rat Newsletter. Labs take the time to read and sign the newsletter. Additionally, some labs provide feedback and suggestions regarding the content.

Chemical Hygiene– Chemical hygiene is a very important aspect in laboratory safety. The primary philosophy for handling chemicals safely: “Manage the chemical from cradle to grave”. Labs are maintaining an accurate inventory of purchased chemicals. Chemicals are being stored in the correct locations (i.e. flammables stored in the flammable liquids cabinet, corrosives stored in secondary containers). Finally, labs are taking steps to create Standard Operating Procedures for chemicals with special hazards (e.g. mutagens, carcinogens, and teratogens).



As we continue our inspections over the next few months, we would like for the researchers to consider the following items to improve the safety of their labs:

Legacy Chemicals – A chemical is considered obsolete if it was purchased 10 or more years ago and it has not been used by the lab for more than 2 years. If the lab needs to use the chemical within the next year or two, then it may be a good idea to keep it. Just remember to keep an updated copy of the Safety Data Sheet. If the chemical will not be useful in the near future, then the lab should give the chemical to EHSO.

Chemical Waste – Some labs are retaining empty amber bottles and plastic bottles for waste collection. Labs do not need to hold onto empty bottles because EHSO will provide waste containers to the labs upon request. If your lab would like to place a request, then send an email to chemwaste@emory.edu. The waste container will be delivered to the lab.

To properly dispose of empty, unwanted amber bottles (applies to non “P-Listed” chemicals only) remember to do the following: triple rinse the container, remove the cap, deface or mark out the label. Place the bottle into the glass recycling bins or into the regular trash.

Please Read—

Signature indicates: I have read and I understand the information in this issue of Lab Rat Newsletter. Use an additional sheet of paper for more signatures, if needed and attach to this document.

- This newsletter is a tool to help fulfill a legal requirement for ongoing safety training.
- Supervisors are responsible for ensuring that individuals in their area have read and understood the information that applies to their area.
- The signed newsletter should be placed into the PIs EHSO Lab Safety Binder.

Signature Here

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