



To Wear or Not to Wear? - A very important question for your SAFETY

this issue

"TO WEAR OR NOT TO WEAR" P.1

CRYOGEN SAFETY P.2

Training

Visit www.ehso.emory.edu for registration information.

Radiation Safety Training

2nd Tuesdays at 1:00 pm

Laboratory Safety Training

2nd & 4th Thursdays at 10:00 am

Eye Wash Testing

Someone in your lab should test the eyewash station once a month.



Biosafety Cabinets / Chemical Fume Hoods
Certifications are required annually.



PPE



Personal Protective Equipment
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

Fire Extinguishers

Check fire extinguishers in your lab:



A. Is it present and mounted in its proper location?

B. Is it readily accessible?

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

Visit <http://www.epcs.emory.edu/fire/> for more information



Contact Employee Health Services / Emory Healthcare Corporate regarding immunization information (404-728-6437)

Why Should We Wear Lab Coats?

- Lab coats are personal protective equipment (PPE) and should be worn in the lab when working with chemicals, biologicals and isotopes to protect the skin and clothing from splatter and spills.

- Appropriate lab coats should be fully buttoned with sleeves rolled down. They should also be fire-resistant.

- In case of an accident, it is much faster and easier to remove a lab coat than street clothes to minimize skin contact with hazardous materials.

When to Wear Lab Coats

- Always wear lab coats when working with hazardous materials.

When NOT to Wear Lab Coats

- ⊗ **Don't** wear lab coats in public places, such as offices, lunch rooms, lounge areas, or elsewhere outside the laboratory, as they can transfer hazardous materials to these areas.

- ⊗ **Don't** bring lab coats home because you may contaminate others in the household.

- ⊗ **Don't** launder lab coats at home or with other clothing.

When to Wear Gloves

1. When should gloves be worn?

Gloves should be worn when you work with potentially infectious material, radioactive material, or hazardous chemicals.

2. Why should I remove my gloves before exiting the lab?

It is standard microbiological practice to remove all PPE prior to exiting the laboratory. This applies to all lab personnel working at all biosafety levels (1-4). This prevents any possible contamination



of "clean" areas such as restrooms, elevators, offices, and cafeterias.

3. If I don't work with any hazardous material, but I do wear gloves for other reasons, what is the concern?

When you are seen wearing gloves in the hallway, the general public perception is that you have been handling something that is possibly harmful to humans. Furthermore, if you have been working with or handling potentially harmful materials, your gloves may be contaminated and you may not even know it!

4. What if I have to transport hazardous material, such as a rack of tubes containing radioactive material, from one lab to another?

The recommended method of

transporting hazardous material with is to utilize secondary containment. The secondary container must be clean, uncontaminated, and can range from plastic tubs, containers, or lab carts. This method allows your hands to be free from exposure to any hazardous material thus eliminating your need to wear gloves.

5. Do I need special equipment or carts to move hazardous material through the hallway?

The equipment used to transport hazardous material within the corridors should be sturdy and uncontaminated. The lab carts should have an upper lip to minimize accidental tip over during transport. Clean diaper pads should also be placed to help absorb any accidental spills during transport.

6. When is it acceptable to wear gloves in the hallways?

In cases where secondary containment cannot be used, you may feel more safe wearing gloves. If this is the case, we recommend that you keep one hand un-gloved for the purpose of opening doors, entering and exiting elevators. The other hand can then be gloved for the purpose of carrying any potentially hazardous material. If you are transporting materials requiring the use of two hands, then the recommendation is to use a clean, uncontaminated lab cart.

7. What if I have questions about the types of gloves that are available?

Continued on page 2



Waste Disposal

Chemical and Radiation drop-off locations are:

Woodruff Labs – WMRB L302, Thursdays 1PM – 4PM

Whitehead & Rollins labs – Whitehead G44 Thursdays 9Am –noon

Chemistry Department, chemicals only – Emerson 133

Other Buildings - Request chemical pickup by calling 7-7091

Request Radiation pickup via EHSassist from website by Tuesday 5 PM for Wednesday pickup

Complete and sign your chemical disposal form or EHS assist radiation disposal form for both pickups and drop-offs.

Cryogen Safety

- by Meagan Parrott

Cryogens are commonly found in Emory laboratories and they require specific precautions in order to maintain a safe lab environment. This article reviews the hazards of cryogens as well as precautions to take while working.

The four cryogenic hazards are:

1. **Direct Contact** – Skin exposure to cryogens will cause cold contact burns (frostbite) almost instantaneously. It can also cause hypothermia which could lead to blood clots.
2. **Asphyxiation** – When exposed to room temperature, liquid cryogens expand to large volumes of gas as they vaporize. For example, when liquid N₂ vaporizes, the gas phase becomes 700 times the volume of the liquid phase. The increase in volume leads to O₂ displacement in the air. While normal air contains approximately 20% O₂ by volume, you can begin



to feel the effects of limited O₂ supply at 19.5% and sudden death occurs at 8%.

3. **Pressure Explosion** – Heat flux into liquid cryogens can lead to vaporization into large volumes. Explosions occur when the container cannot handle the expansion. Liquid N₂ can enter cryotubes with insufficient seals, causing the tube to explode upon thawing.

4. **Chemical Explosion** – When cryogens have a boiling point lower than that of O₂, they can cause O₂ to condense from the air and accumulate on cryogenic containers or lines. Explosions can occur when the condensed O₂ comes in contact with incompatible material.

Precautions to take while working with cryogenic material:

- Protect your skin and eyes by wearing appropriate PPE: safety glasses with side shields, gloves that protect against low temperatures, a face shield, and a lab coat.
- Only work with/store cryogens in ventilated spaces. Do not store dry ice in cold rooms.
- Use pressure relief devices.



- Only use tubes specifically designed for cryogenic storage.

- Store cryogens with chemicals that are compatible with oxygen.

- Thaw tubes that have been stored in cryogenic material behind a safety shield or in a hard-walled container.

References:

McLeod, Vince and Glenn Ketcham, "Stay Cool, No Pressure: Safe Use of Cryogenic Materials." ALN Magazine 8.5 (2009): 37-38.

Delayen, J. R. et Al. "Physics Division Cryogenic Safety Manual." Argonne National Laboratory. 7 Mar 2002. <http://www.phy.anl.gov/division/esh/Cryogenic/Physics%20Division%20Cryogenic%20Safety%20Manual.pdf>

"How Do I Work Safely with Cryogenic Liquids." Canadian Center for Occupational Health and Safety. 1 Sep 2008. <http://www.ccohs.ca/oshanswers/prevention/cryogens.html>



Continued from page 1

To Wear or Not to Wear?

A very important question for your safety.

There are several types of gloves available for various uses. No glove is completely chemically-resistant; however, there are a number of different types of gloves available depending on the type of chemical used and duration of exposure to that chemical. Refer to www.ehso.emory.edu for further information.

8. I have seen people coming out of labs wearing gloves and then pressing the buttons for the elevator. What should I do?

If you witness anyone in the hallway wearing gloves, please contact the your Environmental Health & Safety Office BUILDING LIAISON.

Notice

- ◊ 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 Binder.

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.

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REMOVE GLOVES WHEN EXITING LABS



NO GLOVES at Water Fountains



NO GLOVES in Elevators



NO GLOVES when Opening Doors



NO GLOVES in Hallways



Building Liaisons

Each building has been assigned an EHS Specialists to assist with any questions/concerns you may have. The Liaisons will also conduct a monthly walkthrough of each lab.

- **Dionna Thomas 404-727-4673**
Woodruff, Woodruff Extension, Winship & Rollins
- **Meagan Parrott 404-712-9480**
Dental, Clinic B, Pediatrics, North Decatur, Carlos Museum, Yerkes, Hope Clinic, Medical Office Tower, Crawford Long, Rollins, RSPH & Oxford College
- **Rodrick Esaw 727-1348**
Whitehead, Math & Science, Anthropology, Wesley Woods, Emerson, Briarcliff Campus, Atwood & Chemistry

You may also find updated information and forms at www.ehso.emory.edu.