



# The Lab Rat NEWS

June 2013

## Centrifuge Safety - Prevent an Accident before it Happens

Centrifuges, which are vital pieces of research equipment, operate at very high speeds. The high operating speed of the centrifuge is beneficial because it allows for separation of materials based on density. The operating speed of the centrifuge can present hazards ranging from aerosol creation to equipment instability and malfunction. Aerosols can be created when a centrifuge tube or sample tube breaks inside of the rotor. Additionally, an unbalanced rotor can create instability within the equipment, which can be greatly multiplied by the operating speed of the centrifuge and can cause user injury or laboratory damage.

In an article written by the Laboratory Safety Committee of the American Industrial Hygiene Association (AIHA), the AIHA described an incident where an ultracentrifuge failed while in use. According to the article, “the rotor within an ultra centrifuge failed due to excessive mechanical stress caused by the high rotation speed”. When the rotor failed, flying metal fragments were released from the centrifuge and damaged the walls, ceiling, and other nearby laboratory equipment. The equipment malfunction was attributed to the use of a rotor that was not approved by the manufacturer to be used. It is important that researchers follow the manufacturer’s operating instructions for the make and model of the centrifuge used by the lab.



Centrifuge accidents can be prevented when users choose to operate high speed centrifuges and ultra centrifuges safely. The following will provide tips to reduce the likelihood of a centrifuge accident or injury:

- *Ensure that centrifuge bowls and tubes are dry*
- *Use matched sets of tubes, buckets and other equipment*
- *Inspect tubes and sample containers and sample tube tops for cracks, splits, or other damage before using them*
- *Always use centrifuge safety cups with aerosol covers to contain spills and prevent aerosols of potentially infectious materials*
- *If there is a spill of infectious material, wait 10 minutes after the rotor stops before opening the lid*
- *Avoid overfilling tubes or containers – Centrifugal force may drive the solution up the side of the tube or container wall*
- *Ensure that the rotor is properly and firmly seated on the spin drive or drive shaft*

### Training

Most of EHSO’s Trainings are available online. [www.ehso.emory.edu](http://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](mailto: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

- Only check the O-rings if you are properly trained
- Do not exceed the rotor's maximum run speed
- Make sure that the centrifuge is operating normally before leaving the area
- Make sure that the rotor has come to a complete stop before opening the lid
- Close the centrifuge lid during operation
- Decontaminate the centrifuge with 70% ethanol or 10% bleach solution after any spills
- Schedule regular preventative maintenance



**References:**

- OSHA Website. "OSHA Quick Facts - Laboratory Safety Centrifuges." Web. 14 May 2013 <http://www.osha.gov/Publications/laboratory/OSHAquickfacts-lab-safety-centrifuges.pdf>.
- American Industrial Hygiene Association Website. "Lab Safety Centrifuge Explosion Incidents". Web. 17 May 2013. <http://www.aiha.org/get-involved/VolunteerGroups/LabHSCCommittee/Incident%20Pages/Lab-Safety-Centrifuge-Explosions-Incidents.aspx>.

## EHSO Lab Validations Have Started!

EHSO will inspect at least one lab for each PI. After the inspection, labs will receive a report with any findings within 48 hours. Follow up will occur within 2 weeks after the validation to ensure that all items found during the inspection have been corrected.

After all inspections have been completed on campus, EHSO will send score cards to department chairs and individuals PIs to show how well they performed on all three inspections: lab self-inspection, EHSO validation, and EHSO follow-up inspection.

**Reminder:** In order to guarantee that your lab is prepared for the upcoming validations, please verify that you've completed your 2013 self-inspection and submitted your corrective action plan (CAP) to [linspec@emory.edu](mailto:linspec@emory.edu). Inspection and CAP forms are available

**Website Changes!** As you may have noticed the EHSO website is now under the Emory design. Please note with this transition there have been many changes to the URLs of links. Your browser might have saved the old URL location in its cache and bookmarks which will result in broken links. To help avoid confusion, please clear your browser's recent history and cache. If the link still isn't functioning after this please let us know.

### Notice

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.

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#### 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/](http://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](mailto: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.