

**In this issue of the Environmental Health and Safety (EHS) Listserv,
October 3, 2018**

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1. Nitric Acid Waste Hazards

Many laboratory incidents involving fuming nitric acid have been reported throughout the nation. At UNL last spring a bottle of fuming nitric acid waste shattered spraying glass and acid throughout the hood and lab. Two individuals were injured. Incidents involving nitric acid waste are generally attributed to the following causes: container labeling, experimental set up, lack of knowledge of the chemical, and incidental contaminants.

All chemical containers need to be plainly labeled. Waste containers must be labeled with full chemical names. For chemicals like nitric acid, good labeling is imperative. Lack of labeling can lead to inadvertent mixing with other incompatible chemicals.

Incompatible wastes even if they are used in the same experiment or process should always be stored apart. It is too easy to put a chemical into the wrong container when they are stored next to each other. For a chemical like nitric acid, if possible designate a fume hood solely for that part of the procedure to prevent the accidental disposal of other wastes in the nitric acid bottle.

Nitric acid is a highly corrosive mineral acid. It is also a strong oxidizer. Reactions between concentrated nitric acid and organics are often explosive. Dilute solutions can still react with most organics oxidizing them to carbon dioxide gas. It will react with most metals dissolving them and creating hydrogen gas or gases of nitrogen oxides. It takes very little contaminant in nitric acid in a sealed container to generate enough gases to rupture the container. Container selection is critical. Do not use contaminated or even clean empty solvent bottles for nitric acid. Incidental contaminants are also an issue. A small flake of metal or organic in nitric acid can evolve enough gas to rupture a closed container.

When the possibility of contaminants in the container cannot be eliminated, a vented cap should be used. Vented caps have a small hole in the top of the lid

and a gas permeable liner/membrane often made of Teflon that seals the lid to the container. These vented caps are designed to release slowly evolving gases; not rapid gas evolution. The caps can be reused. They are not a replacement for suitable clothing and PPE or proper lab technique and fume hood use.

Vented caps should be used on all containers that have the potential to generate gases. For example, piranha solution, a 3 to 1 mixture of concentrated sulfuric acid and 30% hydrogen peroxide, needs to be vented at all times.

Vented caps are available through EHS on request. When making the request, please provide information on the process or reaction for which there is a concern of the evolution of gases.

Resources

- **Chemical Hazard Assessment & Risk Minimization** SOP https://ehs.unl.edu/sop/s-chemical_haz_assessment_risk_min.pdf
- **Chemical Hazard Assessment & Risk Minimization** Web-Based Training <https://ehs.unl.edu/web-based-training#ChemHaz>
- **Chemical Safety** Safe Operating Procedures <https://ehs.unl.edu/sop/chemical-safety>
- **Chemical Safety, 4-unit** Web-Based Training <https://ehs.unl.edu/web-based-training#ChemSafe>
- **Laboratory Hood/Cabinet Identification and Use** https://ehs.unl.edu/sop/s-lab_hood_use.pdf
- **Hazardous/Radioactive Material Collection Procedures** SOP https://ehs.unl.edu/sop/s-chem_collection_procedures.pdf
- Virtual Manual home page <https://scsapps.unl.edu/VirtualManual/>

2. Safety Poster – GHS Pictograms and Hazards

EHS has developed a number of safety posters of relevance to the campus community. This poster serves as a handy reminder of the array of pictograms used in Safety Data Sheets and on manufacturer's chemical labels and hazards they depict.



Contact EHS at (402) 472-4925 for questions or comments. For more information about the symbols above, scan the QR code.

University of Nebraska
Lincoln | Environmental Health & Safety
(402) 472-4925

Order your FREE poster(s) today. Contact ehs@unl.edu or 402-472-4925 with your name, campus mailing address, and quantity desired.

Resources

- Safety Posters <http://ehs.unl.edu/safety-posters>

3. Harvest Safety

Agriculture is among the most hazardous industries according to the Bureau of Labor Statistics. Sixty-one percent of Nebraska agricultural workers fatally injured worked in crop production. 2017 figures for Nebraska, indicate that transportation incidents, which include tractor overturns, led to nine worker deaths. The most effective way to prevent tractor overturn deaths is use of a Roll-Over-Protective Structure (ROPS). The second most frequent event type is “contact with objects or equipment,” leading to four fatalities.

Harvest is an intense time due to the quantity of work to be accomplished and the time frame in which it must be done. That urgency, often leading to fatigue and inattentiveness, can result in an increased incidence of injury. Maintaining

awareness of and avoiding potential hazards is the key to avoiding injury. Here are a few harvest time safety tips to consider:

- Read operator's manuals prior to equipment use and be sure all operators are familiar with and properly trained in safe use.
- Install and use safety devices such as Slow-Moving Vehicle signs and seat belts.
- Have roll-over-protective devices fitted on tractors.
- Keep all equipment/machinery guards in place. Wait until all mechanisms have stopped moving and have been secured from restarting before attempting to service/unclog.
- Take breaks and get enough sleep. Fatigue, stress, medication, alcohol, and drugs cause lack of focus on tasks.

Working safely helps avoid injuries so you can get the job done.

Resources

- EHS **Ag Safety** SOPs <http://ehs.unl.edu/sop/ag-safety>
 - **Harvest Safety** http://ehs.unl.edu/sop/s-harvest_safety.pdf
 - **Tractor Safety** <https://ehs.unl.edu/sop/s-tractor.pdf>
- OSHA Quick Card "Protecting Farmworkers from Tractor and Harvester Hazards" (English/Spanish)
<https://www.osha.gov/Publications/OSHA3706.pdf>
- OSHA Quick Card "Backing Up Farm Vehicles and Equipment Safety" (English/Spanish)
<https://www.osha.gov/Publications/OSHA3733.pdf>
- Katz, Phil. "Fall harvest safety tips." *Michigan State University Extension*, 4 Oct. 2013, http://msue.anr.msu.edu/news/fall_harvest_safety_tips
- agKnowledge Spotlight "Harvest Safety Tips"
https://www.aganytime.com/Documents/ArticlePDFs/HarvestSafetyTips_ASDKDP.pdf
- "Fall Harvest Safety Tips," *Penn State Extension*, 12 Sept. 2017, <https://extension.psu.edu/fall-harvest-safety-tips>
- Mihalovic-Bayer, Dawn. "Harvest safety tips for farmers." *Mayo Clinic Health System*, 18 Sept. 2015, <https://mayoclinichealthsystem.org/hometown-health/speaking-of-health/harvest-safety-tips-for-farmers>

4. Safety Shorts – Harvest Safety

This series features links to short safety resources each month. Provided this month are resources to help agricultural workers work safely, in particular during harvest season.

- **NPPD Fall Harvest Safety Message** “Electrical Safety on the Farm” (NPPDTV, Duration 1:16)
<https://www.youtube.com/watch?v=6-ArFXVRSVU>
- **Farm Machinery Safety: Combine Safety** (NDSU Extension, Duration 4.55)
<https://www.youtube.com/watch?v=bff54zrpyOE>
- **Growing Safety – Tractor Safety** (OffTheJobSafety, Duration 5:14)
<https://www.youtube.com/watch?v=a994Pqj727M>

NOTE: Resources provided are for informational purposes only. Publication does not indicate an endorsement of a particular company or product or affect current UNL policies and procedures.

5. Biosafety Awareness Month

October is Biosafety Month and EHS is participating this year by reminding everyone on campus to take biosafety refresher training during the month of October. The theme for Biosafety Month this year is “Promoting a Culture of Biosafety and Responsibility.” Refresher training helps us keep biosafety practices and concepts fresh in our minds so complacency does not develop and potential injury incidents in the lab are prevented. Refresher training takes 15 minutes or less and can be completed in one of 3 ways:

1. Take the EHS online biosafety refresher module. This training only takes 15 minutes. <https://ehs.unl.edu/web-based-training#BioRef>
2. Watch a short YouTube video with your lab, selecting from this curated list. <https://go.unl.edu/tbp8>
3. Review an EHS Biosafety SOP in your lab meeting.
<https://ehs.unl.edu/sop/biosafety>

Remember to keep a record of your training for future reference.

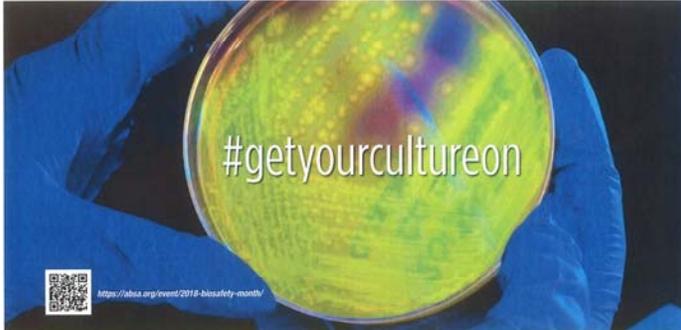
If you or your lab completes biosafety training during October and posts to social media about it using the hashtags #getyourcultureon and #UNLEHS you will be entered in a drawing to win a prize for your lab.

You might want to share/post the poster below with your lab or beyond:

ABSA
INTERNATIONAL

OCTOBER 2018
Biosafety Month

ENVIRONMENTAL
HEALTH AND SAFETY
University of Nebraska-Lincoln



Improve Your Lab's Safety Culture!
Take Biosafety Refresher Training Annually

Refresher
Training
Options:

- ✓ Online Refresher Module (15 min)
<https://ehs.unl.edu/web-based-training>
- ✓ YouTube Videos (2-15 min)
<https://go.unl.edu/tbp8>
- ✓ Review an EHS SOP (5-15 min)
<http://ehs.unl.edu/sop/>



ABSA
INTERNATIONAL
The Association for Biosafety and Biotechnology

Contact EHS for more
information (402) 472-4925

To receive this graphic as a PDF to print and post/share, contact ehs@unl.edu or 402-472-4925 and a PDF will be emailed to you.

6. Chancellor's University Safety Committee at the Supplier Showcase

The Chancellor's University Safety Committee (CUSC) is a UNL committee established to assist the Chancellor by making recommendations of methods to reduce safety hazards at UNL. For their next outreach event, the CUSC will have a booth at the October 16, 2018, *Supplier Showcase*, sponsored by UNL Procurement, from 10:00 a.m. – 2:00 p.m. in the City Union Centennial Ballroom. The annual Supplier Showcase will feature representatives and product displays from over 80 University suppliers featuring a variety of products, services, and technologies.

Make plans to stop by the CUSC table for a "Heads Up" on how to stay aware and be prepared to maintain your personal safety, in particular, while walking/biking/driving at UNL and learn how to report Near Miss/Close Call incidents.

Resources

- Chancellor's University Safety Committee
<http://ehs.unl.edu/chancellors-university-safety-committee-cusc#cusc>
- UNL Procurement **Supplier Showcase**
<https://procurement.unl.edu/supplier-showcase-facultystaff>

7. Be Sure to Attend: Ladder Safety for Everyone

Mark your calendars now for the fall safety colloquium! Environmental Health & Safety (EHS), in partnership with the Office of Research & Economic Development (ORED), is sponsoring the next campus-wide Safety Colloquium, "**Ladder Safety for Everyone**," featuring Dick Francis, National Safety Director, Little Giant Ladders.

Everyone who uses, intends to use, or selects and purchases ladders or step stools will find this colloquium particularly informative.

This event will be on Wednesday, October 24, 2018. Attendees may select the time that best fits their schedule:

- East Campus Union from 11:30 a.m. – 1:00 p.m. OR
- Hamilton Hall (Room 104) from 3:30 – 5:00 p.m.

RSVPs are NOT required. Previous colloquia are available online. Any questions may be addressed to Elizabeth (Betsy) Howe: 402-472-5488 or ehowe2@unl.edu.

Resources

- EHS Safety Colloquium Series <http://ehs.unl.edu/training/Colloquium>

8. EHS Needs Your Feedback!

Environmental Health and Safety is committed to excellent customer service and offers a *Customer Satisfaction Survey* as an easy method for the campus community to provide feedback on our services and staff. By taking a few moments to complete the survey (<http://ehs.unl.edu/survey>), you will be helping us to identify areas where we might need to focus our attention.

In order to effectively evaluate potential areas for improvement, please provide specific information or examples and your name and contact information. We greatly appreciate your participation.

Please feel free to contact Brenda Osthus, EHS Director, at 402-472-4927 or bosthus1@unl.edu if you would rather communicate outside the parameters of this survey.

9. Revised Safe Operating Procedures

- ***Environmental Cleaning and Disinfection for Pandemic Influenza Exposure Control***
https://ehs.unl.edu/sop/s-bio-enviro_n_cleaning_bio-disinfection_pandemicflu_exposure_control.pdf
Updated guidance from CDC and World Health Organization and decontamination information/guidance.
- ***Mammalian Cell and Tissue Culture Biosafety***
https://ehs.unl.edu/sop/s-bio-cell_tissue_cultures.pdf
Updated guidance information, added references, and updated IBC oversight pertaining to the use of these items
- ***Select Agents and Toxins***
https://ehs.unl.edu/sop/s-bio-select_agents.pdf
Updated with the new APHIS agent name.

Remember...**SAFETY IS AN ATTITUDE!**

Environmental Health and Safety

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