

## In this issue of the Environmental Health and Safety (EHS) Listserv – June 3, 2020

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### 1. Biosafety 100: Research Compliance – Significant Updates

EHS recently updated the **Biosafety 100: Research Compliance** web-based training module and **UNL Biosafety Guidelines** to emphasize the role of the Institutional Biosafety Committee (IBC) in reviewing potential Dual Use Research of Concern (DURC). DURC is “life sciences research that, based on current understanding, can be reasonably anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security.”

The United States Government Policy for Oversight of Life Sciences Dual Use Research of Concern and supporting information is available at <https://osp.od.nih.gov/biotechnology/dual-use-research-of-concern/> . At present, this Policy is limited to fifteen (15) biological agents and toxins, all of which are select agents, and seven (7) categories of experiments. While UNL does not currently engage in any experiments that trigger this policy, the framework for institutional oversight has been established in order to swiftly respond to newly emerging research interests. Principal Investigators and laboratory workers should familiarize themselves with this important Policy and UNL’s strategy for compliance.

#### Resources

- UNL Biosafety Guidelines  
[https://ehs.unl.edu/Biosafety\\_Guidelines.pdf](https://ehs.unl.edu/Biosafety_Guidelines.pdf)

### 2. Revisions to Autoclave Guidance Documents

EHS recently split the former SOP titled **Autoclave Operation and Performance Testing** into two new documents to enhance readability and usability. The two newly derived SOPs are titled **Autoclave Operation and Use** and **Autoclave Performance Testing**.

New information in the Autoclave Operation and Use document includes guidance on staging and handling of biohazardous waste prior to autoclaving. Useful figures about autoclave cycle parameters and specified recommended parameters for autoclaving biohazardous waste were also added to the document.

No substantial changes were made to the information in the **Autoclave Performance Testing** SOP.

## Resources

- **Autoclave Operation and Use** SOP <https://ehs.unl.edu/s-bio-autoclavesafety.pdf>
- **Autoclave Performance Testing** SOP [https://ehs.unl.edu/s-bio-autoclave\\_performance\\_testing.pdf](https://ehs.unl.edu/s-bio-autoclave_performance_testing.pdf)

## 3. Researcher Exposure to Hydrogen Fluoride (HF)

Experimental research can expose lab workers to many, varied chemical hazards, in particular when working with unique combinations of chemicals that may produce reaction products that have different hazards than the parent compounds. Personal protective apparel specifics should be carefully considered as part of the pre-research risk assessment.

A recent article published by the American Chemical Society discusses lessons learned while a first-year postdoctoral scholar was working with a solution of lithium hexafluorophosphate, dimethyl carbonate, and ethylene carbonate. The mixture produced hydrogen fluoride (HF). The researcher was wearing disposable nitrile gloves which are not protective against hydrofluoric acid. In this case, layering of disposable nitrile/neoprene gloves over Silver Shield® gloves would have provided protection against HF exposure.

Quick action and the ready availability of 2.5% calcium gluconate gel prevented long term repercussions from HF exposure. Calcium gluconate gel must be available in laboratories when experiments are conducted with hydrofluoric acid or fluoride salts. Calcium gluconate has a limited shelf life so expiration date should be confirmed prior to work initiation.

## Resources

- Svenningsen, Glen S., et al. "Lessons Learned-Fluoride Exposure." *ACS Chemical Health & Safety*, (c) American Chemical Society, 10 Jan. 2024, [pubs.acs.org/doi/10.1021/acs.chas.9b00015](https://pubs.acs.org/doi/10.1021/acs.chas.9b00015).
- EHS **Chemical Hazard Assessment & Risk Minimization** Safe Operating Procedure (SOP) [https://ehs.unl.edu/sop/s-chemical\\_haz\\_assessment\\_risk\\_min.pdf](https://ehs.unl.edu/sop/s-chemical_haz_assessment_risk_min.pdf)
- EHS **Hydrofluoric Acid** SOP <https://ehs.unl.edu/sop/s-hfacid.pdf>

- EHS Chemical Safety SOPS <https://ehs.unl.edu/sop/chemical-safety>
- EHS **Chemical Safety** web-based training (4 units) <https://ehs.unl.edu/web-based-training>
- EHS Chemical Safety Posters <https://ehs.unl.edu/safety-posters/chemical-safety-posters>. Contact [ehs@unl.edu](mailto:ehs@unl.edu) or 402.472.4925 for your FREE “Hydrofluoric Acid Hazards” poster(s) to display.

#### 4. NEW Laboratory Commissioning Safe Operating Procedure

EHS offers a **Laboratory Commissioning** Safe Operating Procedure. While designed to assist with initial set-up of a laboratory, current laboratories might find this information useful, in particular the section relating to laboratories in temporary “hibernation” and their reopening.

##### Resources

- **Laboratory Commissioning** SOP [https://ehs.unl.edu/s-lab\\_commissioning.pdf](https://ehs.unl.edu/s-lab_commissioning.pdf)

#### 5. NEW Laboratory Cleaning and Disinfection Safe Operating Procedure

EHS has developed a **Laboratory Cleaning and Disinfection** Safe Operating Procedure (SOP) designed to provide guidance for environmental surface cleaning and disinfection of laboratories at UNL and affiliated campuses. While this SOP is specifically directed to laboratories, the general concepts are applicable to any work location.

##### Resources

- **Laboratory Cleaning and Disinfection** SOP [https://ehs.unl.edu/s-lab\\_cleaning\\_disinfection.pdf](https://ehs.unl.edu/s-lab_cleaning_disinfection.pdf)

#### 6. All Terrain Vehicle Safety

All Terrain Vehicles (ATV) and Utility Terrain Vehicles (UTV) are commonly used in outdoor operations. The differences and advantages for each style vary and the machine used should be chosen based on expected use. Operators should be familiar with the manufacturer’s operational and maintenance procedures. ATVs should not be used on pavement as they may be more difficult to control.

If an ATV is to be transported to a job site it must be properly loaded and unloaded using ramps if necessary and restrained over the axles. It is important that the operator be familiar with the area where the ATV will be operated. If not,

they should assess the area, as much as possible, in regards to weather conditions, road, soil and possibly water conditions before accessing the area on the ATV. In routinely operated areas terrain hazards such as culverts, fence lines, large rocks, poles and wash outs should be well marked.

It is important for the operator to be appropriately dressed including wearing a helmet, long-sleeve shirt and over the ankle boots. No passengers should ever be carried on single-rider ATV.

In case of a mechanical breakdown or other emergency, a means for communication that will effectively work in the area should be available to the rider. Cell phones or radios may be appropriate. A first aid kit and a few tools may also be a good idea to have readily available.

More information on selecting the appropriate equipment and personal protective equipment may be found in the UNL SOP, **All Terrain Vehicles**. The ATV Safety Institute, [ATVsafety.org](http://ATVsafety.org), offers free online training courses and additional safety tips. The Nebraska Safety Council offers on-site training.

## Resources

- EHS SOP **All Terrain Vehicles (ATV)** [https://ehs.unl.edu/sop/s-atv\\_2.pdf](https://ehs.unl.edu/sop/s-atv_2.pdf)
- EHS SOPs **Personal Protective Equipment (PPE) – General** <https://ehs.unl.edu/sop/personal-protective-equipment-ppe-general>

## 7. Let Us Know

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 to better serve you.

In order to effectively evaluate potential areas for improvement, please provide specific information or examples and your name and contact information. The Director, Brenda Osthus, follows up on all submissions. We greatly appreciate your participation.

Please feel free to contact Brenda Osthus, EHS Director, at 402.472.4927 or [bosthus1@unl.edu](mailto:bosthus1@unl.edu) if you would rather communicate outside the parameters of this survey.

## 8. Revised Safe Operating Procedure

- **On-the-Job and Student Injuries** <https://ehs.unl.edu/s-injury.pdf>  
Added information about the *First Script* program

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

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