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EHS Lab Chatter

UNIVERSITY OF NEW ENGLAND
INNOVATION FOR A HEALTHIER PLANET

EHS
ENVIRONMENTAL HEALTH AND SAFETY

Contents

Contact Us

Ronnie Souza,
Director of EHS
UNE Extension: 2488
Cell: 207-391-3491
Email: rsouza@une.edu

Peter Nagle,
EHS Specialist
UNE Extension: 2791
Cell: 207-468-1786
Email: pnagle@une.edu

Jessica Tyre,
EHS Specialist
UNE Extension: 2046
Cell: 603-244-0081
Email: jtyre@une.edu

Safety Spotlight

Happy 5 Year Anniversary EHS Lab Chatter!

EHS is proud to celebrate that we are entering our fifth year of publication of EHS Lab Chatter! We hope that this publication reaches the following objectives for our readers:

- Announces UNE lab safety policy and procedure changes and updates.
- Notifies labs about regulatory changes from the ME DEP, OSHA, and other related agencies.
- Addresses safety issues that come up during EHS Lab Safety Inspections.
- Provides articles from other laboratory safety publications with relevant tips and resources to assist university labs.
- Offers chemicals and lab equipment from other labs as part of the UNE Chemical Sharing Program.
- Provides important dates for EHS events and lab safety initiatives.
- Creates a forum for PIs to share their safety tips and best practices with other campus labs.

We are excited to introduce our new format in this issue and hope that you continue to read and enjoy or publication. Thanks for reading!!

Biohazardous Waste

By Peter Nagle

Packaging Bio-Hazardous Waste for Disposal

With the beginning of a new academic year and several new personnel working in our labs, I'd like to review or bio-hazardous waste packaging protocols. Each lab that generates bio-hazardous waste is responsible for preparing, packaging and properly sealing bio-hazardous waste for pick-up and transportation. Keep in mind that others such as facility personnel, truck drivers and personnel at the ultimate destination facility will be handling your waste after it leaves your lab. It is essential that all steps are taken with care in order to avoid any preventable injuries.

Below are general bio-hazardous waste guidelines from identification to packaging protocols.

Examples of Bio-Hazardous Waste:

1. Discarded human blood, blood products, and body fluids.
2. Wastes saturated with human blood.
3. Pathological waste.
4. Discarded sharps* such as needles, syringes, scalpel blades (i.e. anything that can puncture)
5. Discarded cultures and stocks of infectious agents including items used to transfer, inoculate and mix cultures.
6. Discarded animal carcasses containing organisms or agents unusual to the animal environment or pathological or hazardous to humans.

*Discarded sharps **must** be in rigid puncture proof containers.

Packaging:

1. All Bio-Hazardous waste must be packaged in the boxes provided by Stericycle. If you don't have one, contact Facilities or EHS.
2. Double line all Bio-Hazardous Waste boxes with the red bags provided.
3. Sharps containers when full can be placed in the Bio-Hazardous waste boxes.
4. Keep boxes at 40 lbs. or less. Any bulging, leaking or damaged boxes will be rejected.
5. Properly seal all boxes with clear packaging tape*.
6. Submit a work order to Facilities to have any full boxes picked-up. Remember, Facilities will not pick up any boxes that are not sealed.

*All boxes must be sealed with clear packaging tape. Masking tape, scotch tape or any other tape not designed for sealing large packages is not acceptable. Also, interlocking the flaps whether on the bottom or top of the container is not acceptable. All boxes must be taped shut.

Biohazardous waste continued...

Unacceptable Items:

1. Hazardous waste
2. Chemical wastes*
3. Radioactive waste
4. DEA regulated waste
5. Pharmaceutical waste
6. Sharps that **are not** packaged in rigid containers

*Sheep or other animal parts dissected in student laboratories should not be discarded as bio-hazardous waste, especially if they are still in the liquid preservative. This waste stream can be handled by our hazardous waste vendor.

Please carefully follow the above instructions when handling and packaging your bio-hazardous waste. Always remember that several people will be handling your packaged waste after it leaves your lab so it is crucial that it is packaged correctly.

If you have any questions regarding bio-hazardous waste generation, handling or packaging procedures contact :

**Peter Nagle (pnagle@une.edu) or

**Jessica Tyre (jtyre@une.edu) or

**Ron Souza (rsouza@une.edu)

SMALL ANIMAL SAFETY

Lab Manager

AVOID TOUCHING YOUR MOUTH, NOSE, & EYES.

- This includes eating, drinking, smoking, handling contact lenses, applying cosmetics, or taking or applying cosmetics.

AVOID USING SHARPS WHENEVER POSSIBLE

- Be cautious using sharps or needles and syringes during necropsy procedures. Do not remove, recap, bend, break, or clip needles from disposable syringes. Use safe needles whenever possible.

NEVER PIPETTE BY MOUTH

- Only use mechanical pipetting devices to transfer fluids.

CLEAN UP SPILLS AND DECONTAMINATE

- All spills should be cleaned up immediately and work surfaces decontaminated promptly when procedures are completed.

MAINTAIN SAFE ANIMAL HOLDING AREAS

- Keep doors to rooms holding research animals closed.
- Properly dispose of animal waste and bedding.
- Remove gloves and wash hands after handling animals or tissues and before leaving areas where animals are kept.

WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

- Wear ALL required PPE identified by your employer.
- Use gloves designed to resist punctures from animal bites.
- Wear eye protection to protect from potential scratches, or contamination from animal secretions.
- Wear head or hair covering to protect against accidental sprays or splashes.
- Wear respiratory protection if required. NIOSH-certified respirators that are properly selected and fitted will protect from small particle aerosols.

REPORT INCIDENTS

- Incidents, accidents, and equipment malfunctions require immediate attention, report them to your supervisor.

Lab Manager

The Culture of Laboratory Safety

Submitted by Ron Souza

Source: Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards

INTRODUCTION

Over the past century, chemistry has increased our understanding of the physical and biological world as well as our ability to manipulate it. As a result, most of the items we take for granted in modern life involve synthetic or natural chemical processing.

We acquire that understanding, carry out those manipulations, and develop those items in the chemical laboratory; consequently, we also must monitor and control thousands of chemicals in routine use. Since the age of alchemy, laboratory chemicals have demonstrated dramatic and dangerous properties. Some are insidious poisons.

During the “heroic age” of chemistry, martyrdom for the sake of science was acceptable, according to an 1890 address by the great chemist August Kekulé: “If you want to become a chemist, so Liebig told me, when I worked in his laboratory, you have to ruin your health. Who does not ruin his health by his studies, nowadays will not get anywhere in Chemistry” (as quoted in Purchase, 1994).

Today that attitude seems as ancient as alchemy. Over the years, we have developed special techniques for handling chemicals safely. Institutions that sponsor chemical laboratories hold themselves accountable for providing safe working environments. Local, state, and federal regulations codify this accountability.

Beyond regulation, employers and scientists also hold themselves responsible for the well-being of building occupants and the general public. Development of a “culture of safety”—with accountability up and down the managerial (or administrative) and scientific ladders—has resulted in laboratories that are, in fact, safe and healthy environments in which to teach, learn, and work. Injury, never mind martyrdom, is out of style.

THE CULTURE OF LABORATORY SAFETY

As a result of the promulgation of the Occupational Safety and Health Administration (OSHA) Laboratory Standard (29 CFR § 1910.1450), a culture of safety consciousness, accountability, organization, and education has developed in industrial, governmental, and academic laboratories. Safety and training programs, often coordinated through an office of environment, health, and safety (EHS), have been implemented to monitor the handling of chemicals from the moment they are ordered until their departure for ultimate disposal and to train laboratory personnel in safe practices. 1

Laboratory personnel realize that the welfare and safety of each individual depends on clearly defined attitudes of teamwork and personal responsibility and that laboratory safety is not simply a matter of materials and equipment but also of processes and behaviors. Learning to participate in this culture of habitual risk assessment, experiment planning, and consideration of worst-case possibilities—for oneself and one's fellow workers—is as much part of a scientific education as learning the theoretical background of experiments or the step-by-step protocols for doing them in a professional manner. 2

Accordingly, a crucial component of chemical education at every level is to nurture basic attitudes and habits of prudent behavior so that safety is a valued and inseparable part of all laboratory activities. In this way, a culture of laboratory safety becomes an internalized attitude, not just an external expectation driven by institutional rules. This process must be included in each person's chemical education throughout his or her scientific career.

culture of lab safety continued...

RESPONSIBILITY AND ACCOUNTABILITY FOR LABORATORY SAFETY

Ensuring a safe laboratory environment is the combined responsibility of laboratory personnel, EHS personnel, and the management of an organization, though the primary responsibility lies with the individual performing the work. Of course, federal, state, and local laws and regulations make safety in the laboratory a legal requirement and an economic necessity. Laboratory safety, although altruistic, is not a purely voluntary function; it requires mandatory safety rules and programs and an ongoing commitment to them. A sound safety organization that is respected by all requires the participation and support of laboratory administrators, employees, and students.

The ultimate responsibility for creating a safe environment and for encouraging a culture of safety rests with the head of the organization and its operating units. Leadership by those in charge ensures that an effective safety program is embraced by all. Even a well-conceived safety program will be treated casually by workers if it is neglected by top management.

Direct responsibility for the management of the laboratory safety program typically rests with the chemical hygiene officer (CHO) or safety director; responsibility for working safely, however, lies with those scientists, technicians, faculty, students, and others who actually do the work. A detailed organizational chart with regard to each individual's responsibility for chemical hygiene can be a valuable addition to the Chemical Hygiene Plan (CHP). (See Chapter 2, section 2.B.)

In course work, laboratory instructors carry direct responsibility for actions taken by students. Instructors are responsible for promoting a culture of safety as well as for teaching the requisite skills needed to handle chemicals safely.

As federal, state, and local regulations became more stringent, institutions developed infrastructures to oversee compliance. Most industrial, governmental, and academic organizations that maintain laboratory operations have an EHS office staffed with credentialed professionals. These individuals have a collective expertise in chemical safety, industrial hygiene, engineering, biological safety, environmental health, environmental management (air, water, waste), occupational medicine, health physics, fire safety, and toxicology.

EHS offices consult on or manage hazardous waste issues, accident reviews, inspections and audits, compliance monitoring, training, record keeping, and emergency response. They assist laboratory management in establishing policies and promoting high standards of laboratory safety. To be most effective, they should partner with department chairpersons, safety directors, CHOs, principal investigators or managers, and laboratory personnel to design safety programs that provide technical guidance and training support that are relevant to the operations of the laboratory, are practical to carry out, and comply with existing codes and regulations.

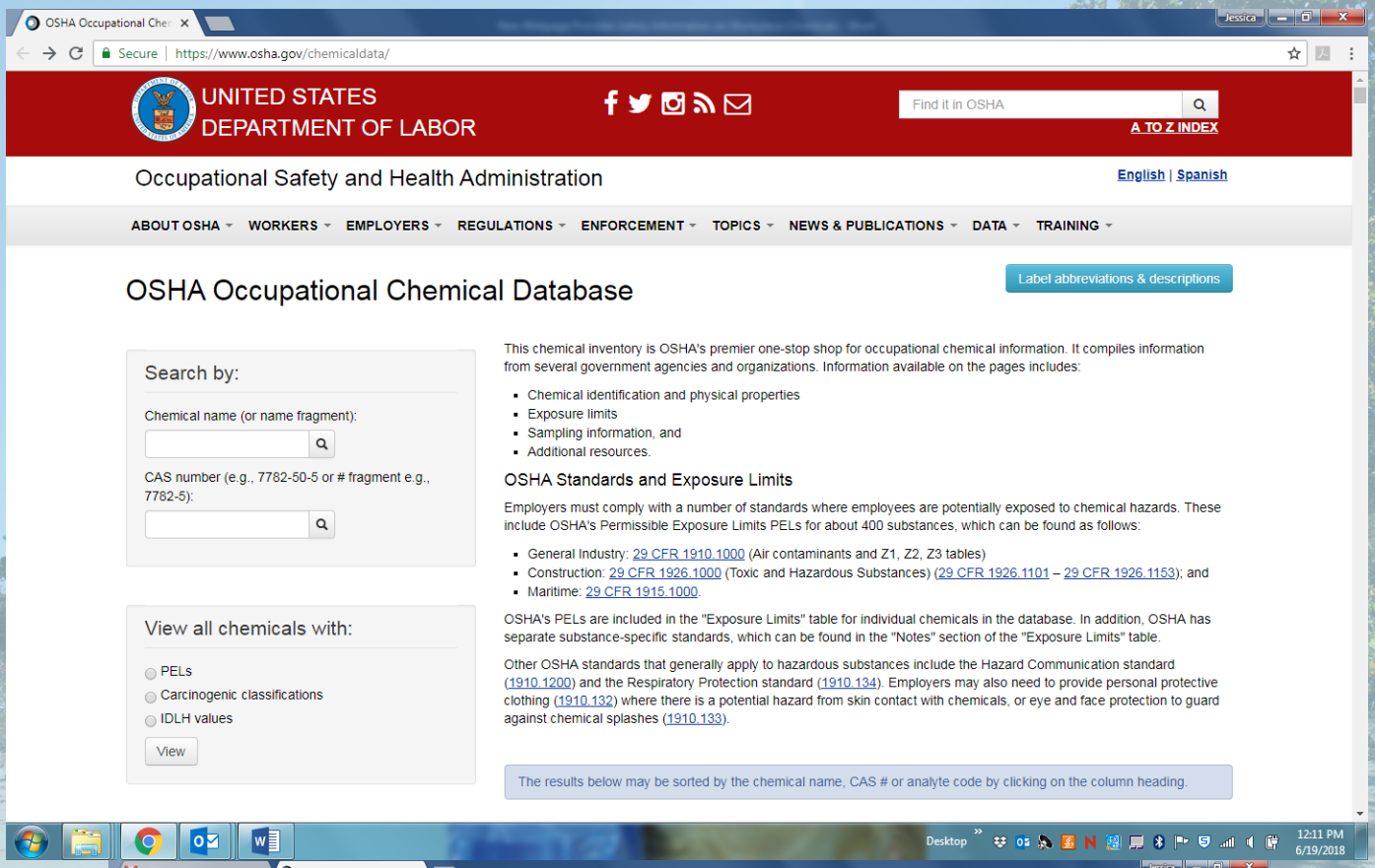
In view of the importance of these offices, safety directors should be highly knowledgeable in the field and given responsibility for the development of a unified safety program, which will be vetted by institutional authorities and implemented by all. As a result, EHS directors should also have direct access, when necessary, to those senior authorities in the institution who are ultimately accountable to the public.

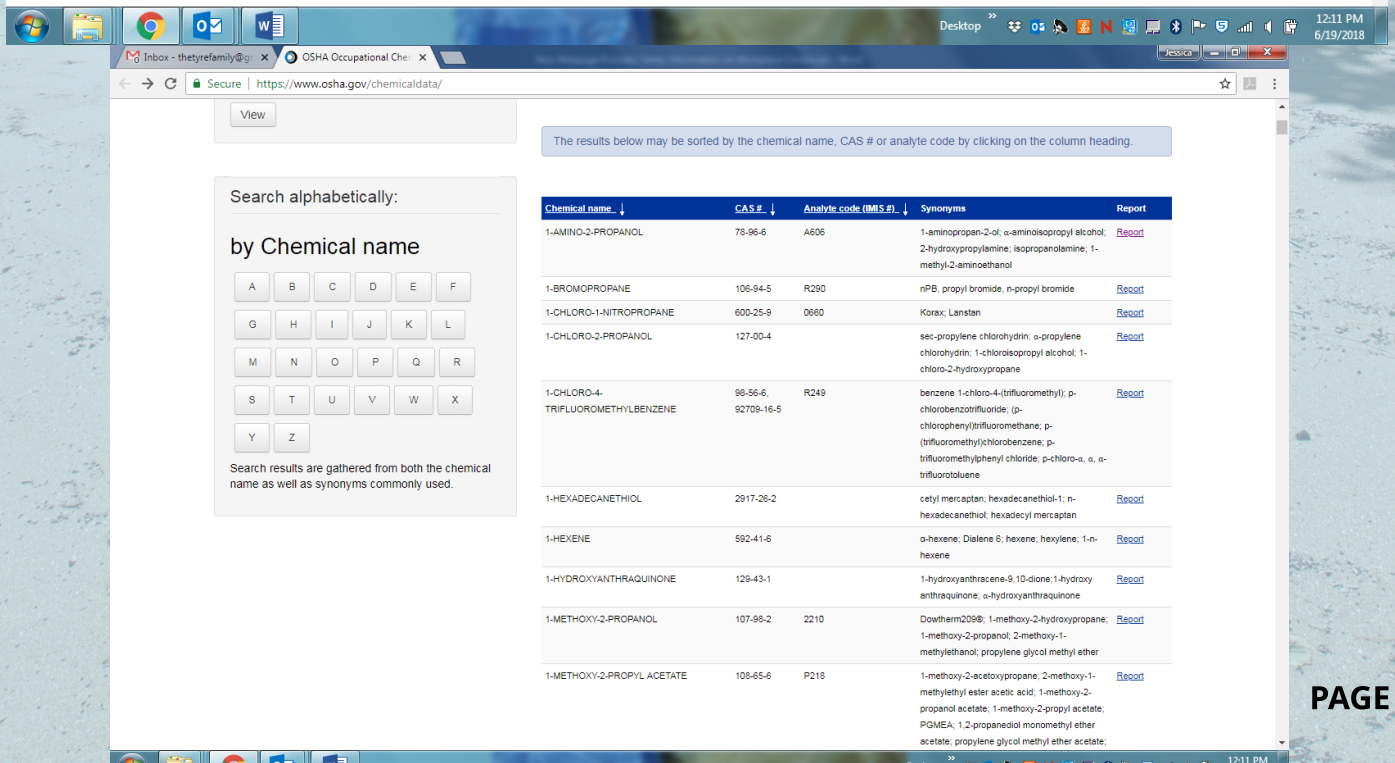
Source: OSHA Quick Takes; June 18, 2018

New OSHA Webpage Provides Safety Information on Workplace Chemicals

OSHA's new Occupational Chemical Database compiles information from several government agencies and organizations into one online resource. The webpage includes chemical identification and physical properties, permissible exposure limits (PELs), and sampling information. Chemicals can be searched by name or identification number, or grouped by PEL, carcinogenic level, or whether they pose an immediate threat when inhaled.

https://www.osha.gov/chemicaldata/





The UNE EHS web page: Links and Forms

We have a number of forms available on our website so that you can find everything EHS related in one place. Please take a moment to review the forms and links available at:

https://www.une.edu/campus/ehs/forms-and-links

EHS Forms

Accident Reporting Form
Waiver Release Form

Facilities

Confined Space Entry Form
PPE Selection Guide

Golf Cart Forms

Disclosure and Consent to Procure Motor Vehicle Report for the Use of UNE Vehicles
Rules for Operating Golf Carts
Staff Clearance for Driving a UNE Golf Cart
UNE Golf Cart Usage Form

Laboratories

Bar Code Disposal Sheet
CDC Poster - Germs in labs
Eyewash Inspection Checklist Card
Laboratory Safety Inspection Checklist
SAA Hazardous Waste Collection Weekly Log

Radiation

Individual Radioactive Shipment Inventory
Radioactive Material Order and Receipt Form
Radioactive Experimental Use Authorization Form
Radioactive Waste Disposal Log Sheet
Radioactive Waste Disposal Log Sheet - Hold for Decay
Radioactive Waste Removal Request Form

Respiratory Protection

Procedures for Cleaning Respirators
Respirator Medical Questionnaire
Terms and Definitions for Respiratory Protection

Environmental Health and Safety and Regulatory Web Links

Occupational Safety and Health Administration (OSHA)
Maine Department of Environmental Protection (ME DEP)
Environmental Protection Agency (EPA)
Center for Disease Control (CDC)
National Institute for Occupational Safety and Health (NIOSH)
Drug Enforcement Agency (DEA)
Maine Emergency Management Agency (MEMA)
York County Emergency Management Agency (for Biddeford campus)
Cumberland County Emergency Management Agency (for Portland campus)
Southern Maine Health Care in Biddeford, ME
Maine Medical Center in Portland, ME

UNE Chemical Sharing Program

The UNE Chemical Sharing Program is a great way to reduce hazardous waste, reduce costs for your department, and have a positive environmental impact on campus. If you have any commonly used lab chemicals that you are thinking of disposing, please contact EHS so they can be listed in the next issues of EHS Lab Chatter as available for the UNE Chemical Sharing Program.

Items available:

No Items currently available. Please check back next issue!

To contribute a topic or article to EHS Lab Chatter,

email:jtyre@une.edu