**In Regard to Lecture Bottles**
by Walter Pociask

The Office of Environmental Health and Safety (OEH&S) does not routinely collect or manage compressed gas cylinders, including lecture bottles, for hazardous waste disposal. Researchers and other users are instead required to use proper management techniques and purchase cylinders from companies that will accept them for later return. Larger cylinders purchased from our current cylinder vendors are generally not a problem. However, certain specialty gases purchased as lecture bottles have encountered issues in their disposal.

Disposal costs for lecture bottles that cannot be returned can run anywhere from $100 per cylinder for inert gases, to over $1,000 for unusual or highly toxic gases. Knowing these costs may have an effect on how a user orders the supplies necessary for the lab.

Any lecture bottle that is not returnable will require management as a hazardous waste. OEH&S will arrange for the most cost effective and environmentally sound disposal for you.

The U.S. Congress has made waste minimization a national policy and goal of each waste generator. The user of compressed gasses, has the responsibility to minimize the amount of gas managed as a hazardous waste. Waste minimization has benefits such as decreasing exposure to hazardous substances, protection of the environment, and the overall reduction in the cost of disposal. This cost can exceed the original cost of the gas by ten or more times. Waste minimization techniques include such practices as changing procedures, reducing scale and substituting materials.

If you have any questions, please feel free to call Walter Pociask at 313-993-7655, or send him your questions at an9291@wayne.edu. If you would like to schedule disposal of your compressed gas as a hazardous waste, please request pick-up on the University’s on-line Hazardous Waste Pickup request form.
It’s that time of year when slips and falls occur in increasing numbers here on campus. Facilities Planning and Management’s Grounds Services and Custodial Services Departments do their best to keep the sidewalks and steps to building entrances clear of snow and ice. However, there may be icy patches they have not had a chance to clear before you’ve walked to your office, lab, classroom, etc.

Be aware of your surroundings and “think safety”. Here is some practical advice to lessen your chances of slipping and falling during the winter months:

- Select appropriate footwear. There is no single shoe sole material that is perfect under all conditions; however, footwear with rubber or neoprene composite soles provide better traction on ice and snow than leather or plastic.
- Think about the best route to your destination and plan on a little extra time to get there. Avoid rushing, resist taking shortcuts over snow piles or traversing areas where snow or ice removal is incomplete.
- If you have no choice but to walk on a slippery surface, bend slightly forward and shorten your stride or shuffle your feet for better stability.
- Many slips and falls occur during entry or exit from vehicles. Be particularly careful and hold on to the vehicle for support.
- If you find icy or slick conditions in your parking lot contact Parking and Transportation Services to address the situation.
Radiation Dosimeter
by Maha Srinivasan

The personal dosimeter, also known as monitoring badge, is used to evaluate the dose received by individual radiation workers, due to external exposure from high energetic ionizing radiation during specific monitoring periods. There are a variety of dosimeters and filters available for trapping various energy levels and different types of radiation, i.e. gamma or neutron radiation. The most commonly used dosimeter is the Thermo Luminescent Detector (TLD). These dosimeters are made of materials like calcium fluoride or lithium fluoride which exhibit thermoluminescence and emit light trapped due to absorption of ionizing radiation when heated.

These dosimeters are very useful to monitor potential exposure of various human organs. The whole body badge is used to determine whole body dose and is typically worn between the neck and waist. Ring dosimeters are worn on the fingers while working with high energetic radiation. Collar badges are provided to monitor exposure to the thyroid, and fetal badges are issued to pregnant women who have declared their pregnancy, to monitor fetal dose. Dosimeters have to be worn only as designated and should be returned in a timely manner (monthly or quarterly). All the dosimeters are sent to the manufacturer for a dose read-out. The manufacturer generates a report for each worker, and it is sent to Health Physics Radiation Safety for assessment.

The Radiation Safety Office maintains and evaluates all the dosimeter reports to ensure that each worker does not exceed the ALARA annual occupational limit (0.05 rem per year). Health Physics will also notify any worker who comes close to exceeding the limit. If a radiation worker would like a copy of their dose history, these records are available from the Office of Environmental Health and Safety.

For questions related to personnel dosimeters or dose reports, please contact Radiation Safety at 7-1200

Bed Bugs: Basic Facts
by Scott Browne

Adult bed bugs are light brown to reddish-brown, flattened, oval shaped and have no hind wings, but front wings are vestigial and reduced to pad-like structures. Bed bugs have segmented abdomens with microscopic hairs that give them a banded appearance. Adults grow to 4–5 mm in length and 1.5–3 mm wide. Newly hatched nymphs are translucent, lighter in color and become browner as they molt and reach maturity. Bed bugs may be mistaken for other insects such as booklice and carpet beetles.

- Bed bugs feed on blood, from birth to death
- They do not transmit disease, though they are carriers
- Bed bugs are nocturnal insects and are somewhat secretive
- Females can lay 3-5 eggs per day, eggs hatch in 8 days
- Average feeding of blood is once a week but they can survive up to a year without feeding.
- Females deposit eggs where ever they can therefore they are not limited to beds

Bed bugs can have a number of health effects including skin rashes, psychological effects and allergic symptoms. Bed bug bites or (cimicosis) may lead to a range of skin manifestations from no visible effects to prominent blisters. Diagnosis involves both finding bed bugs and the occurrence of compatible symptoms

Detection is sometimes difficult due to the fact that it could take up to a month to notice any infestation/symptoms. The reason for this is that bed bugs typically feed once a week, so they may not bite the host for days and the symptoms disappear, leaving a person to believe that the bed bugs are gone.

Inspection of box spring, mattress, head boards, any furniture, and carpet to determine any infestation is generally the best practice. Once it is determined that an infestation is present, the tenant should contact the housing staff to have pest control procedures performed. Elimination of bed bugs: Steam will destroy all stages of the cycle. This is performed by a licensed Pest Control Operator (PCO).

To achieve 100% elimination, an establishment must be bug free and bite free for 60 days.

Winter Safety
(Continued from page 2)

When entering a building, be sure to:

- Take advantage of floor mats to remove moisture from the soles of your shoes. This will help protect you, as well as others who follow, from having to walk on wet or slippery surfaces. If floor mats are missing from entranceways, make sure you let your Building Coordinator know as soon as possible.

- Avoid walking on wet or slippery areas if possible.

- Use handrails on steps/ramps. Have your Building Coordinator contact Facilities Planning and Management if you come across an icy patch near your building or if snow removal is not adequate.

- Take responsibility for immediately reporting slip and fall hazards, like wet floors inside your building, so others are not exposed.

If you’ve slipped and fallen and have injured yourself, contact your supervisor and seek medical treatment, if necessary, at the UHC Occupational Health Services. Complete a Report of Injury, which can be found on the Office of Risk Management’s website. Wayne State University’s Office of Environmental Health and Safety wishes you have a safe and healthful winter season. Any questions, please call us at 577-1200.
Ultracentrifuge Safety

by Rob Moon

High-speed centrifuge and ultracentrifuge rotors are subjected to powerful mechanical stress that can result in rotor failure. In addition, improper loading and balancing of rotors can cause the rotors to break loose while spinning. A standard “run” for separating components of a cell nucleus disruption might require 55,000 revolutions per minute (RPM) for 600 minutes. This force easily generates 100,000 times the force of earth’s gravity within the sample containers for the entire run. A standard 20-pound fixed chamber ultracentrifuge rotor at these conditions holds over a million joules of energy, which is roughly equivalent to the energy released by exploding several 1” sticks of dynamite. Rotors can fail catastrophically, resulting in centrifuge destruction and laboratory damage.

To prevent such failures, all ultracentrifuge manufacturers require that users maintain an up-to-date use log for each rotor, and also that each time a rotor is used it be thoroughly visually inspected for any signs of damage or weakness. It is necessary to "de-rate" some rotors (limiting the maximum speed at which the rotor is used) based on the amount of use the rotor has received. Anyone using this type of equipment needs to know the proper operating procedures for the specific unit being operated, including how to select, load, balance and clean the rotor. Laboratory supervisors must see to it that operators of this type of equipment are properly trained in the selection, care and use of rotors.

In the event of operating problems with high-speed centrifuge or ultracentrifuge units, or signs of wear or damage to rotors, the equipment should be taken out of service immediately and clearly marked "Warning -DO NOT USE" until checked by an authorized service representative.

Older equipment may not have all the safety features that are built into new units. They are more likely to experience rotor failures and to cause injuries when they fail. It is critical that all safety and maintenance procedures specified by the manufacturer be followed.

Upcoming Classes

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<th>Class Title</th>
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<tr>
<td>Basic Radiation Safety Training</td>
<td>Tuesday, Jan. 10</td>
<td>1:00 - 3:30</td>
<td>5425 Woodward Suite 300</td>
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<tr>
<td>Basic Radiation Safety Training</td>
<td>Tuesday Feb. 14</td>
<td>1:00 - 3:30</td>
<td>5424 Woodward Suite 300</td>
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<tr>
<td>Basic Radiation Safety Training</td>
<td>Tuesday, March 13</td>
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<tr>
<td>Basic Radiation Safety Training</td>
<td>Tuesday, April 10</td>
<td>1:00 - 3:30</td>
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To register for upcoming classes, or to see more classes, visit http://www.oehs.wayne.edu/training/laboratory-training.php

Contact Us:

Office of Environmental Health and Safety,
5425 Woodward, suite 300,
Detroit, Mi 48202.
phone: 313-577-1200