"Safety Comes First"

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In this issue:

Director's Corner	*1*
Bloodborne Pathogens and Needlestick Prevention	*2*
Hexavalent Chromium Cr(VI)	*4*
Holiday Fire Safety	*5*
Recording Survey Results in DPM	*7*
EHS Staff	*8*

Safety is our responsibility!

Dr. Charles Hart, Executive Director, EHS

The one thing environmental health and safety professionals hate to hear from faculty and staff in the laboratory is "can't you take care of that, safety is your job". Not so: safety in your lab is part of all of our jobs. All supervisors are responsible for the safety of the workers under their direction. This is part of their management responsibilities. The PI is responsible for the safety program and regulatory requirements in all of the lab operations under their control. They must oversee operations, cooperate with institutional programs and policies, write/approve and implement the standard operating procedures (SOPs) for the lab, the Chemical Hygiene Plan, and Bloodborne Pathogens Exposure Control Plan, assign routine safety tasks, train their staff and students, and see that any necessary items are taken care of in their labs. Lab staff are responsible for assigned duties, taking their training when required, following lab SOPs, reporting hazards in the lab to the PI, and working safely.

EHS oversees campus-wide regulatory initiatives in the environmental health and safety area, provides consultation to faculty and staff on technical safety and environmental issues and compliance methods, regulatory interpretations, provides training, and offers numerous services to support the institutional

(Continued on page 7)

Bloodborne Pathogens and Needlestick Prevention

"Preventing needlestick injuries is the best way to protect yourself from infections."

Needlestick injuries can lead to serious or fatal infections. Health care workers who use, or may be exposed to, needles are at increased risk of needlestick injury. All workers who are at risk should take steps to protect themselves from this significant health hazard.

What infections can be caused by needlestick injuries?

Needlestick injuries can expose workers to a number of bloodborne pathogens that can cause serious or fatal infections. The pathogens that pose the most serious health risks are:

- Hepatitis B virus (HBV)
- Hepatitis C virus (HCV)
- Human immunodeficiency virus (HIV)—the virus that causes AIDS

HBV vaccination is recommended for all health care workers (unless they are immune because of previous exposure). HBV vaccine has proved highly effective in preventing infection in workers exposed to HBV. However, no vaccine exists to prevent HCV or HIV infection.

Preventing needlestick injuries is the best way to protect yourself from infections.

Who is at risk of needlestick injury?

Any worker who may come in contact with needles is at risk, including nursing staff, lab workers, doctors, and housekeepers.

How common are needlestick injuries among health care workers?

Estimates indicate that 600,000 to 800,000 needlestick injures occur each year. Unfortunately, about half of these injuries are not reported. The OSHA Bloodborne Pathogen Standard (29CFR 1910.1030) requires that all needlestick injuries be reported to the employer to ensure that there is appropriate follow-up care.

What kinds of needles usually cause needlestick injuries?

- Hypodermic needles
- Blood collection needles
- Suture needles
- Needles used in IV delivery systems

(Continued on page 3)

Bloodborne Pathogens and Needlestick Prevention, cont.

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Do certain work practices increase the risk of needlestick injury?

Yes. Past studies have shown that needlestick injuries are often associated with these activities:

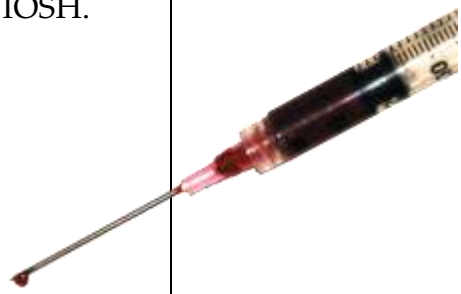
- Recapping needles
- Transferring a body fluid between containers
- Failing to dispose of used needles properly in puncture-resistant sharps containers

How can I protect myself from needlestick injuries?

- Avoid the use of needles where safe and effective alternatives are available.
- Help your employer select and evaluate devices with safety features that reduce the risk of needlestick injury.
- Use devices with safety features provided by your employer.
- Avoid recapping needles.
- Plan for safe handling and disposal of needles before using them.
- Promptly dispose of used needles in appropriate sharps disposal containers.
- Report all needlestick and sharps-related injuries promptly to ensure that you receive appropriate follow-up care.
- Tell your employer about any needlestick hazards you observe.
- Participate in training related to infection prevention.
- Get a hepatitis B vaccination.

Taken from an article and pamphlet published by CDC and NIOSH.

"Avoid the use of needles where safe and effective alterna-tives are available."



Hexavalent Chromium Cr(VI)

"Hexavalent chromium may also be present in fumes generated during the production or welding of chrome alloys."

Hexavalent chromium (Cr(VI)) is a toxic form of the element chromium. Hexavalent chromium is rarely found in nature and is generally man-made. Cr(VI) is widely used in pigments, metal finishing (electroplating), wood preservatives and fungicides, and in chemical synthesis as an ingredient and catalyst. Hexavalent chromium may also be present in fumes generated during the production or welding of chrome alloys. Chromium metal is often alloyed with other metals or plated on metal and plastic substrates to improve corrosion resistance and provide protective coatings. The steel industry is a major consumer of chromium metal in the production of stainless steel. Since 2000, there has been a decline in the use of chromates in:

- pigments for paints and coatings
- printing inks
- ceramic glass and construction materials
- Roofing and plastics.

Employers are substituting less toxic inorganic and organic pigments where possible (SRI Consulting, 2008).

Workplace exposure to Cr(VI) may cause the following health effects:

- Lung cancer in workers who breathe airborne Cr(VI);
- Irritation or damage to the nose, throat and lungs (respiratory tract) if Cr(VI) is inhaled; and
- Irritation or damage to the eyes and skin if Cr(VI) contacts these organs.

Workers can inhale airborne Cr(VI) as a dust, fume or mist while, among other things, producing chromate pigments, dyes and powders (such as chromic acid and chromium catalysts); working near chrome electroplating; performing hot work and welding on stainless steel, high chrome alloys and chrome-coated metal; and applying and removing chromate-containing paints and other surface coatings. Skin exposure can occur while handling solutions, coatings and cements containing Cr(VI).

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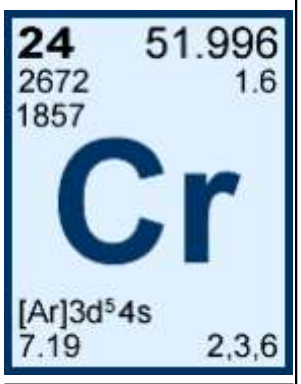

Holiday Fire Safety

Decorating for the winter holidays is fun but can lead to tragedy if you don't practice fire safety. Below are a few simple fire safety tips for you to keep in mind while you decorate this holiday season.

If using a live Christmas tree **(live Christmas trees and wreaths are prohibited in the residence halls)**:

- Keep it in sturdy base to avoid it from tipping over.
- The base should be capable of holding a minimum of a 2 day supply of water.
- Keep it watered and check it at least daily.
- Check the tree daily for dryness.
- Remove the tree whenever the needles fall off readily when a tree branch is shaken or if the needles are brittle and break when bent between the thumb and index finger.
- Remove the tree before leaving for an extended period of time.
- Don't place the tree close to a heat source, including a space heater or heat vent. Keep away at least a distance equal to the height of the tree. (View a dry Christmas tree fire at: http://www.youtube.com/watch?v=lPyrJbKJpIY)
- Artificial trees and wreaths must be labeled by the manufacturer as flame retardant.
- Use only nonflammable decorations.
- Keep all decorations away from heaters or any open flames.
- Inspect holiday lights for frayed wires, bare spots, gaps in the insulation, broken or cracked sockets, and excessive kinking or wear before using them.
- All lighting and wiring should be UL approved and bear its tag.
- The use of electrical wiring and lighting on metal trees is prohibited.
- Extension cords should only be used temporarily. **Use of extension cords is prohibited in the residence halls**.
- Use of candles and open flames are prohibited.
- Do not obstruct the exits, pullstations, or fire extinguishers with decorations.
- Do not hang decorations from sprinkler heads or smoke detectors.

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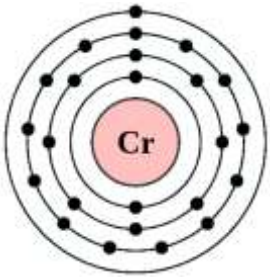
"USE OF EXTENSION CORDS IS PROHIBITED IN THE RESIDENCE HALLS"

Hexavalent Chromium Cr(VI), cont……



"The final Cr(VI) rule establishes an 8-hour TWA permissible exposure limit (PEL) of 5 µg/m³."

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OSHA has separate standards for Cr(VI) exposures in general industry, shipyards and construction. Most of the requirements are the same for all sectors, with the exception of provisions for regulated areas, hygiene areas and practices, and housekeeping. The standards generally apply to occupational exposures to Cr(VI) in all forms and compounds in general industry, shipyards and construction. States that administer their own OSHA-approved occupational safety and health plans may have different requirements.

The final Cr(VI) rule establishes an 8-hour TWA permissible exposure limit (PEL) of 5 µg/m3. This means that over the course of any 8-hour work shift, the average exposure to Cr(VI) cannot exceed 5 µg/m3. The Action Level is set at 2.5 µg/m3 of Cr(VI) calculated as an 8-hour TWA. Exposures above the Action Level trigger specific requirements, and exposures above the PEL trigger additional requirements.

If there is ever any question or concern about exposure to Cr(VI) or any other chemical, please call the EHS office at 216-368-2907.

Taken from:

U.S. Department of Labor

Occupational Safety and Health Administration

OSHA 3373-10 2009

Fire Safety, cont.

(Continued from page 5)

- Do not leave lights on unattended.

For more information regarding holiday fire safety visit: http://www.usfa.fema.gov/citizens/focus/holiday.shtm

Everyone from the EHS staff wish all campus associates a safe and happy holiday.

….. our responsibility!

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safety effort. We would be glad to assist you with your environmental, health, and safety programs and regulatory responsibilities.

We continually try to find ways to serve you better, including making web content more useful, offering various training, and providing for many service needs. We know that making these responsibilities easier for you helps to not only ensure better compliance and safety, but allows you to dedicate more time to your academic responsibilities as well.

Safety is all of our business. There is no one on this campus that does not have some safety related responsibilities as part of their job. We all contribute to the 'Safety Culture' at CASE, and we continually try to build and maintain it in all aspects of our work on campus and beyond. EHS is proud to partner with you to support the important work that you do. Let us know how we can help!

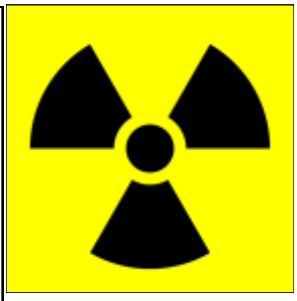
Recording Survey Results in DPM

Radiation surveys must be recorded in units of activity (DPM, or disintegrations per minute), not in count rates, or CPM. **CPM and DPM are not interchangeable.**

When performing a meter survey it is acceptable to write the word "background" or an abbreviation of the word as the result when no contamination is present. However, when contamination is found the counts per minute should be recorded and must also be converted to DPM.

The conversion process requires that you know your instruments efficiency. The Radiation Safety Office calibrates all Geiger counters once per year, and the efficiencies are recorded on the tag for each isotope. If using a scintillation counter you must correct for materials that affect counting efficiency. This may require use of efficiency standards containing known amounts of isotope.

To calculate DPM the following equation should be used: DPM=(CPM-background)/efficiency.



"The Radiation Safety Office calibrates all Geiger counters once per year, ….."

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