



Department of Occupational and Environmental Safety NEWSLETTER

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OSHA's New Bloodborne Pathogen Directive

On November 5, OSHA unveiled its newly-revised Bloodborne Pathogens Compliance Directive to help further minimize worker exposure to HIV, hepatitis B, and hepatitis C. Being aware of bloodborne risks is nothing terribly new, but it is terribly important, and OSHA's new directive substantially updates its 1992 one, which had a strong impact on both safety practices and public perception concerning the risks of bloodborne pathogens. The updated standard reflects the use of new devices, better exposure treatments, and new policy interpretations.

"We must do everything we can to protect workers who may be at risk of exposure to bloodborne diseases," said Secretary of Labor Alexis M. Herman. "This directive...does recognize and emphasize the advances made in medical technology [and] reminds employers that they must use readily-available technology in their safety and health programs." While the exact number of injuries which might be considered at-risk for bloodborne pathogens is unknown, some frequency estimates vary between 590,000 and 800,000 injuries annually.

In essence, the new Directive outlines new engineering controls to reduce needlesticks and other sharps injuries. Effective engineering controls include the use of safer medical devices to prevent percutaneous injuries before, during, or after use through safer design features. When the first Di-

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New Safety Disk

Perhaps the most integral element of a safe laboratory is the creation and implementation of a Chemical Hygiene Plan. Thanks to the brand-new DOES Interactive Safety Disk, this process just became easier. Designed by Safety Services Engineer Marc Rubin, this 3.5 diskette contains the following manuals **in their entirety**:

- Chemical Safety
- Radiation Safety
- Biosafety
- Laser Safety

All indexed for easy access, these manuals are in Adobe Acrobat .pdf format and are easily readable by your computer. In addition, the disk includes interactive CHP forms, additional safety programs, and web links for training programs and supply ordering.

To get your **free** copy, just stop by the DOES office and pick one up.



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What a WASTE!

Down the Drain

Knowing how and where to dispose of chemicals is perhaps the most important aspect of any experiment or procedure. If exact regulations aren't followed, serious health risks might arise. **All EPA-regulated hazardous wastes are NOT disposable in the drain**, but there are some chemicals which may be disposed of in this manner: know the list, not only for what is on it, but also for what is not. The following chemicals **MAY BE DISPOSED** of down the drain:

- Inorganic acids and bases that have a pH between 5.0 and 10.0. **as a result of your experiment. Chemicals may not be neutralized only for the sake of disposal.** If your resultant pH is between 5.0 and 10.0, then neutralization is permissible, provided no other regulated chemical is present.
 - Aqueous buffer solutions containing no regulated materials, e.g., common salt solutions or tissue culture media.
 - When in solution, common salts (chlorides, bicarbonates, citrates, phosphates, sulfates, acetates) of sodium, potassium, magnesium, and calcium may be disposed in the drain.
 - Aqueous High Performance Liquid Chromatography (HPLC) solutions or other solutions containing less than 24% ethanol, propanol, or isopropanol (no other alcohols).
 - Bacteriological and tissue culture media **ONLY** after sterilization by autoclaving and must not contain anything other than common biochemicals.
 - Mixed waste (radioactive waste combined with a solvent or inorganic material) must be classified by chemical before drain disposal. Refer to the Radiation Safety Manual for procedures and acceptable limits.
- Remember:** hazardous materials **cannot be diluted** with a material (such as water) in order to bring them to concentration suitable for drain disposal.

Know Your BioSafety Cabinet

You may use it everyday, but how well do you really know your biosafety cabinet? Take a moment and get acquainted — it may be very important. Here is a comparison of the various types of BSCs -- find yours and determine if it's protecting you like you think it is:

The Class I BSC provides personal protection, but no product protection; in other words, you are safe, but your product sample might be compromised because the air entering the cabinet is unfiltered. The exhaust air is HEPA-filtered through the building's exhaust system. Air movement and containment is similar to a standard chemical fume hood.

The Class II BSC provides personal, product, and environmental protection. Class IIs are designed for work involving microorganisms of

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Upcoming Training Sessions

Radiation (x2906)

• **New Training:** Jan. 11(9-2), 26(1-4), Feb. 10 (1-4)

• **Retraining:** Jan. 5(10-11), 20(2-3), Feb. 4 (2-3)

• **X-ray Training:** call office to set up training session

Chemical (x2907)

• **OSHA Lab Standard:** Mondays 1-3 (Service Building Conference Room)

Bloodborne Pathogen (x2907)

• **New Training:** Mondays 3-4 (Service Building Conference Room)

• **Retraining:** (Service Building Conference Room) Jan. 10(1-2), 24(1-2)

Don't forget: rad re-training is now also ONLINE at our website: www.does.cwru.edu.

As always, call us for upcoming dates and times.

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biosafety levels of 1, 2, and 3 only. **Class II, Type A** cabinets offer the same protection but may not be used with toxic or volatile chemicals if unducted to the building's exhaust system. **Type As** should not be used for toxic or volatile chemicals. **The Class II, Type B1** allows the use of some hazardous chemicals such as carcinogens since the air is discharged into the building's exhaust system. **Class II, Type B2** and **B3** cabinets provide similar biological and chemical containment.

The Class III is designed for work with biosafety level 4 microbiological agents — and provides **MAXIMUM** protection for both worker and environment. The **Class III** hood is a gas-tight enclosure with a non-opening view window. Both supply and exhaust air are HEPA-filtered. Airflow is maintained by a dedicated independent exhaust system. Heavy-duty rubber gloves are attached to gas-tight ports to allow manipulation of materials within the confines of the hood.

NOTE: A Horizontal Laminar Flow 'Clean Bench' offers product protection but **NO** personal or environmental protection; in fact, they discharge HEPA-filtered air across the work surface and back towards the user! A vertical Laminar Flow 'Clean Bench' presents similar problems so don't use them in lieu of a BSC.

So are you using your BSC correctly? Is it protecting you and your experiment? If you are still uncertain, call us and we can make sure that your environment is as safe as possible. Remember that **ALL** biosafety cabinets must be certified **ANNUALLY**, so make sure your laboratory is in compliance to insure safety. Call Dick Dell x2907 or visit our new-look website at:

www.does.cwru.edu



HOT TIPS



Down the Drain (Part Deux)

Have you read the list of drain-disposable chemicals on pg.2? What about radioactive materials? The policy is simple: radioactive liquids conform to every one of the regulations that chemicals do, i.e. **no liquid waste may be disposed of in the sanitary sewer system unless they meet all governmental regulations.** In addition to the chemical restrictions, other activity restrictions are:

- 20 uCi each per day per authorized user for 3H and 14C, and
- 7 µCi total per day per authorized user for all other isotopes. This last value is additive, e.g., 2 µCi of 32P and 5 µCi of 35S is the limit, not 7 µCi of each.

There is also a **zero release limit** on nuclides in insoluble form unless incorporated in readily dispersible material. Call x2906 if questions.

Ohio Radiation News

Recently, legislation was approved for Ohio to become an Agreement State with the Nuclear Regulatory Commission (NRC). As an Agreement State, Ohio assumes responsibility for regulating most uses of byproduct material, special nuclear material, and source material in Ohio. The Ohio Department of Health now oversees all licensing, operating, and policing duties previously exercised by the NRC. The regulations remain mostly the same, but this status allows Ohio to implement newer, more locally-applicable measures. One new difference is a more rigorous policy on "NARM" radiation, which includes naturally-occurring or accelerator-produced radioactive material, including nuclides such as radium-226 and -228, cobalt-57, and iodine-123. Under Ohio's Radiation Safety Program, these isotopes are now more heavily-regulated and thus subject to existing rules for transport, use, and disposal. If you have questions on this transfer of power, contact Radiation Safety at x2906.

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directive was published in December 1991, the variety of engineering controls was limited.

This new OSHA directive outlines and propogates the “significant medical advances” that have been made in the past seven years. Highlights include:

- Annual Review of Exposure Control Plan — employers must ensure that their plans reflect consideration and use of commercially available safer medical devices.
- Engineering Controls and Work Practices — emphasizes the use of effective engineering controls, to include safer medical devices, work practices, administrative controls, and PPE.
- Emphasizes that employers should rely on relevant evidence in addition to FDA approval to ensure effectiveness of devices designed to prevent exposure to bloodborne pathogens.
- Adds most recent guidelines from the Centers for Disease Control on vaccinations against the Hepatitis B virus. Incorporates CDC’s guidelines on post exposure evaluation and follow-up for HIV and the Hepatitis C virus. **REMINDER:** All CWRU employees (including students) must get or officially decline the hepatitis-B vaccine if they are considered at-risk to bloodborne pathogens. If you have not been vaccinated and think you may be at risk, contact us immediately. If you have further questions, check CWRU’s official vaccination policy (with downloadable forms) at www.cwru.edu/finadmin/humres/policies/II-5a.html.
- Replaces and updates appendices. Includes the following: examples of committees in health care facilities; sample engineering control evaluation forms; an Internet resource list; a “fill-in-the-blanks” sample exposure control plan; and CDC guidelines pertaining to HIV exposure, control and prevention of hepatitis C, and hepatitis B vaccinations.

The Directive may be viewed in its entirety at www.osha.gov under the “Directives” link. Copies can also be obtained from the agency’s Publications Office by calling (202) 693-1888.

Remember that DOES offers Bloodborne Pathogen Training on a regular basis (see pg. 2).

Links to Safety



Keeping abreast of the newest techniques for safety control is imperative; especially when dealing with materials as potentially dangerous as bloodborne pathogens. Here are some links which offer detailed, weekly updates on new techniques and their consequences:

- Exposures to HIV and Recommendations for Postexposure Prophylaxis: www.cdc.gov/epo/mmwr/preview/mmwrhtml/00052722.htm.
- Recommendations for Prevention and Control of Hepatitis C Virus (HCV): www.cdc.gov/epo/mmwr/preview/mmwrhtml/00055154.htm.
- Recommendations of the Advisory Committee on Immunization Practices: www.cdc.gov/epo/mmwr/preview/ind97_rr.html.



A Cautionary X-mas Tale



'Twas the night before Christmas, and all that was stirring...was a worker cleaning a transgenic mouse cage. Since relatives were coming over to see the lab the next day, a labworker decided to clean the cage (which was technically a **Type IIA** biosafety cabinet--see pg.2). He decided to HEPA vacuum the bedding that had fallen beyond the foam prefilter under the BSC work surface. He turned the cabinet motors off.

Now on this particular cabinet, lighting is provided by a fixture attached to the glass sash. When the hinged sash is opened outward (for cleaning), the fixture moves with it, leaving the interior poorly-lit.

Since he couldn't see inside, the worker decided to turn on the "purple light," and worked with his head inside the cabinet for about 20 minutes, vacuuming as well as applying a chlorine-dioxide releasing disinfectant.

Later that evening, the worker had to go to the hospital with extreme eye and face irritation coupled with burning sensations. Instead of visions of sugar plums dancing *in* his head, the worker had a substantial sunburn *on* his head, which caused profuse peeling and discomfort. He fully recovered, but made up some lame story about a last-minute trip to Florida so that his friends and co-workers wouldn't question his sunburn.

Needless to say, they didn't believe him.

Holiday Stress?



The holidays are traditionally a time for stress, both at work and home. The Mayo Clinic advises to a) plan ahead, b) adopt a budget, c) don't abandon healthful habits, d) sleep more, and e) set differences aside (who cares if your brother-in-law gives you batteries **again**?) Enjoy the holidays this year without raising your blood pressure.

Holiday Safety Tips



With the holidays approaching, be aware of increased fire hazards. Here are some safety measures to keep in mind:

1. Decorations must be flame-proofed or made of non-flammable material.
2. If decorating a live tree, be sure to:
 - use a fresh evergreen that has been treated with a flame retardant.
 - equip it with a tree stand that can hold water at the base of the tree; keep it full.
 - remove the tree prior to closing for break.

No electrical equipment or devices are permitted on or under trees; only indirect lighting may be used. Nor are candles or open flames allowed on, under, or within 10 feet of the tree.

***NEVER leave a flame of any size unattended SEVERAL recent fires at CWRU have started this way. Be vigilant over ALL flame- and heat producing elements!**

3. If using a metallic tree or decoration, do not place electrical lights or objects on it.
 4. Decoration materials must not be exposed to light bulbs, heaters, or other heat or flames.
 5. Gift wrappings should be removed right away
 6. Decorations covering large surface areas: doors walls, or ceilings-are not permitted.
 7. Door decorations must not overlap the top bottom, or sides of doors.
 8. Do not leave lights unattended.
 9. Do not place any decorations where they would hinder access to safety equipment (fire alarms extinguishers) or exits.
- Remember** that if a fire does occur:
- Warn/remove people in danger.
 - Activate a pull alarm (usually near exits).
 - call Protective Services at x3333 and give a complete description of the fire and location
*******DO NOT CALL 911*******
 - If the fire is manageable, use your fire extinguisher (that you have trained with) on it.



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Safety News For the Campus Community