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Department of Occupational and Environmental Safety NEWSLETTER

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Handling Replacement Orders

Replacement orders for radioactive materials are sometimes necessary because of mistakes in shipping or incorrect catalog numbers. It is important to follow the procedure below to most efficiently correct these problems.

• Orders need to be placed through **PURCHASING ONLY.**
• If you need to **CANCEL** an order, notify **PURCHASING**.
• If an order is filled by Purchasing that you claim to have cancelled, you are responsible for that order.
• Be sure and document any and all purchases / reorders as per the guidelines in your Chemical and Radiation Safety Manuals.
• If you have **ANY** questions, please call us at x2906. .

If you need to **CANCEL** an order, please do the following:

• Notify **PURCHASING** immediately.
• Keep a record of your cancellation request.

Purchasing will notify us; please **DO NOT NOTIFY US OF A CANCELLATION SINCE WE DO NOT ORDER PRODUCTS and cannot process order cancellations.**

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Needlestick Safety Revisions

In accordance with the Needlestick Prevention and Safety Act, OSHA has revised the Bloodborne Pathogens (BBP) standard.

According to OSHA, the revisions "do not reflect any new requirements being placed on employers with regard to protecting workers from sharps injuries, but are meant only to clarify the original standard, and to reflect the development of new safer medical devices since that time."

The BBP standard now recognizes safety-enhanced needle controls and requires that employers keep exposure control plans.

The recordkeeping requirements of the revised standard require that employers maintain a sharps injury log "to serve as a tool for identifying high risk areas and evaluating devices." According to OSHA, the information that should be contained

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In This Issue:

What a WASTE!

Chemical Spill Response

A sudden movement. A slip of the hand. And a beaker crashes to the floor, breaking and spilling its contents everywhere. You stare blankly. What do you do? How do you respond? Below are some general spill response procedures as well as guidelines for cleaning up a few specific chemicals.

General Chemical Spill Response

If an accident involving a hazardous chemical occurs**, the area must be evacuated.** Do not reenter the area until the hazard is assessed, and then only if it is safe to do so.**The importance of getting everyone out of the lab cannot be overemphasized**. The only justification for re-entering would be to save a life or to prevent a fire or explosion.

DOES must be informed immediately of all spills -- call us at x2907 if a spill occurs.

Spill Kits. Every laboratory should have their own spill kit, suitable to cleaning up typical laboratory spills, and its location should be known to everyone in the lab. You can either buy one or create your own. A spill kit should contain the following items:

- spill pillows
- a silicon-based absorbent such as Oil-Dry, kitty litter, or vermiculite
- dust-pan
- broom or brush
- plastic bags
- waste labels
- rubber gloves
- rubber boots or foot protectors
- chemical splash goggles

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Problems also sometimes occur with chemical orders if suppliers are out of a particular product, but eventually fill the order several months later -- when you no longer need it. Since you may be held responsible for such purchases or will assuredly be forced to waste time returning unwanted items, it is best to simply cancel any orders that cannot be filled in a timely manner. Purchasing will inform us of such cancellations.

Being aware of these procesdures will not only make ordering supplies for your lab easier, it will make it much less hectic, and possibly less expensive if you get stuck with a six-month old **expensive**, unnecessary order.

Upcoming Training Sessions

Radiation (x2906)

•**New Training:** Sept. 7, 18; Oct. 3 (call for times)
•**Retraining:** (call for times)*
•**X-ray Training:** Aug. 29; Sept. 12, 26 (call office to set up training

Chemical (x2907)

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

Bloodborne Pathogen (x2907)

•**New Training:** Tuesdays 3-5 (Service Building Conference Room)
•**Retraining:** Sept. 12, 27 (call for times; Service Building Conference Room)

*Don't forget: rad re-training is now also **ONLINE** on our website: **http://does.cwru.edu** -- please check this out as it is an easy, interactive way to accomplish your radiation retraining.

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in the log shall be recorded and maintained "in such manner as to protect the confidentiality of the injured employee," but will contain, at minimum:

- the type and brand of device involved in the incident,
- the department or work area where the exposure incident occurred, and
- an explanation of how the incident occurred.

Also, a **WRITTEN DETERMINATION** as to whether or not safe needles can be used must be done for each work area. This must be attached to your ECP.

You may visit us to view a copy of the revised BBP standard or may find it at OSHA's website along with several very helpful FAQs and PowerPoint presentations. Log on at:

http://www.access.gpo.gov/su_docs/fedreg/a010118c.html

FACTS:

- 800,000 needlestick injuries occur annually among health care workers.
- More than 80 percent of these injuries are preventable .
- As many as 40 percent of health care workers who sustain needlesticks become infected with Hepatitis B.
- Studies show that nurses, followed by anesthesiologists, sustain the majority of needlesticks.

STAFF NEWS . . .

- Congratulations to Radiation Specialist Tammy Taylor on the birth of her son, Zachary!

- Chemical Safety Specialist Bob Latsch's son was selected to the U.S. Paralympics Soccer Team to compete in the Robin Hood Games in England!

HOT TIPS

Radiation-Producing Equipment: Label It

Do you have any radiation-producing equipment that is no longer in use? You still need to label it and all machines which are disabled or are in storage. In addition to being locked out (either at the main switch or at the plug), these machines must now be tagged with some sort of notice (see sample below). We can bring a "Notice" posting to you or you can make one yourself — there is no set wording requirement as long as it is clear that the machine cannot be moved or used without clearance from Radiation Safety. Please call us for assistance with the lockout/tagout procedure so that we can bring you the the proper materials, including a Posting Notice if you wish.

Other warnings that **must be** posted in the areas surrounding RPE include:

1) ODH Notice to Employees
2) ODH Radiation Protection Rules
3) warning signs and labels (available from DOES)
4) machine-specific operating procedures
5) if the machine is not in use, a "Notice" indicating it as RPE.

Specific compliance requirements for different types of RPE, in addition to these general requirements, are also required. Requirements for the four types of RPE — dental, veterinary, fluoroscopic, and radiographic equipment (including electron microsopes) — will be explained to users of equipment during compliance reviews.

Call us at the Radiation Safety Office (x2906) for initial training or if you have any other questions concerning RPE.

Pressurized Dangers

The recent and tragic steam explosion at the Medina County Fair reminds us that **any** substance, when contained in a highly pressurized environment, has the possibility to become very dangerous. In the laboratory, there are several such dangers to be aware of.

Compressed Gases

Gases used in laboratories are supplied in cylinders at high pressure. In addition to any potential chemical hazards, compressed gases are a high-energy source and therefore hazardous. The following rules must be followed:

- cylinders of all sizes must be restrained from falling by restraining devices
- during storage or transport, the cylinder cap must be in place
- cylinders must only be transported when strapped to a wheeled cart
- no lubricant shall be used when connecting the regulator to the cylinder
- new connections should always be checked for gas leakage
- the cylinder delivery pressure shall be set to zero after the main cylinder valve is closed to prevent a rapid release of compressed gas the next time the cylinder is opened
- in the event of a fire, the supply of a combustible gas shall be shut off before any attempt is made to extinguish the flame
- a trap shall be used to prevent the back siphoning of solution when a soluble gas is being employed
- do not expose cylinders to temperatures higher than 50°C
- use toxic, flammable or reactive gases in a fume hood
- be aware that special handling procedures are required for certain gases, e.g. acetylene

Distillations and Reflux Operations

Distillations and reflux operations are common laboratory procedures which present several potential dangers: pressure buildup leading to explosions if closed systems are used, and fire hazards associated with heating flammable substances are two of the most common. A variety of apparatus designs are available to accomplish reflux / distillation operations at atmospheric pressure, under inert atmospheres, under reduced pressure and by the addition of steam. The following general points should be noted when carrying out these procedures:

- check the integrity of the system; leaks of flammable materials can lead to fires
- ensure smooth boiling through stirring or the addition of boiling stones (do not add boiling stones to hot liquid)
- choose an appropriate heat source - electric heating mantle, ceramic cavity heater, steam bath or silicone oil bath
- do not heat the heat source above their autoignition temperature of the liquid being distilled / refluxed
- do not distill organic liquids to complete dryness

In addition, be aware of the sealing of any pressurized material in **any** closed-space container whether it be a vial or a refrigerator and take the appropriate steps when moving and / or using it. As always, label such containers and be sure that everyone in your lab is aware of them. If you think you have a pressure build-up problem, clear the area and call us immediately at x2907.

What a WASTE!, cont.

***REMEMBER: Used spill kits and materials should be treated/disposed of as hazardous waste.**

Specific Chemical Spill Response:

Acids. Use an absorbent material to neutralize the acid. Commercially marketed acid neutralizers or sodium bicarbonate powders both work well. Sand can be used but is not as effective. After the acid has been neutralized, scoop every thing into a plastic bag and prepare it for disposal.

Flammable Solvents. First, turn off all spark-producing equipment. Then, using an absorbent from the spill kit, begin pouring around the perimeter of the spill area and proceed toward the center. Again, sand is pretty ineffective. Scoop up the and place it in a plastic bag for disposal.

Bromine. Use a sodium thiosulfate solution (5-10%) to react with the bromine. DO NOT use ammonium hydroxide, as an explosion can result from mixing any halogen with ammonia. A respirator must be worn during clean-up.

Acid chloride. Use calcined absorbent products such as Oil-Dry, Zorb-All, or dry sand.

Alkali Metal. Smother the spilled metal using Met-L-X Yellow Extinguisher and remove it to a safe location where it can be disposed of by reaction with a dry secondary alcohol. Quickly remove any metal particles splattered on the skin and then flush with water.

Hydrazines. Flush the contaminated area with water. Do not use anything contaminated with organic materials as an absorbent. After flushing with water, call DOES to assist with the clean-up.

These are just basic guidelines. If you have any doubt about how to handle a spill, call us before doing anything and have as much information as possible concerning the nature and potential hazard of the spill. For more information, see the Chemical Safety Manual. And remember: **ALL** spills **must be** reported to DOES.

Keep Fume Hoods Clean!

Chemical fume hoods are some of the most important engineering controls against hazardous fumes. However, any clutter, overloading, or storage of unnecessary equipment in a fume hood can drastically affect its performance and could endanger your health.

Once a month, clean and dust your hood baffles with a broom and dustpan so that they are free of unwanted residue. Keep your fume hood organized and clean -- it's for your safety.

Safety Shorts

Some safety snippets to get you through the end of summer. . .

- Going on a late summer vacation? Maybe even overseas? Check the U.S. Travel Advisory webpage at http://travel.state.gov/travel_warnings.html first.
- Just last month, a dead bird in eastern Ohio was confirmed to have the West Nile virus. As a precaution, wear mosquito repellant at all times when camping or outdoors. And if you have to remove a dead bird from your yard, wear gloves or call the city to remove it for you.

ERRATA

Here is a more concise explanation of the guidelines about required survey frequencies:

- Entire Lab Documentation
  - -Monthly (usual requirement)
  - -If using less than 200 uCi **REGULARLY**, you are recommended to conduct a **WEEKLY** survey.
- Post-Experiment Documentation
  - -If a 'one-time' use less than 200 uCi.
  - -Conduct a weekly post- survey when using >200 uCi.
  - -Keep results in notebook (must address both fixed and removed contaminants).

Questions? Call us at x2906 or consult your Radiation Safety Manual, now **ONLINE** at **http://does.cwru.edu**. It includes **ALL FORMS** in easy-to-access .PDF format.

"I'll have to do some x-rays to be sure, but I'm guessing you dislocated your shoulder."

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