



"Safety Comes First"

Case Department of Occupational and Environmental Safety

July/
August
2009

Service Building, 1st Floor

Phone: (216) 368-2906/2907

FAX: (216) 368-2236

Website: <http://does.case.edu>

*In this
issue:*

Security of Radioactive Materials

<i>Chemical Spill Response</i>	2
<i>Fall Preparations...</i>	3
<i>Lab Safety during Pregnancy</i>	4
<i>Where is DOES?</i>	4
<i>Proper Disposal of Your Empty Chemical Bottles</i>	4
<i>Handling Radioactive Materials Packages</i>	5
<i>Modification to the Process of Collecting Animal Carcasses</i>	6
<i>Upcoming Training Sessions</i>	7

Security of all hazardous materials is a primary concern of DOES and should be a primary concern for all individuals using hazardous materials. Radioactive materials are no exception to this rule. All radioactive material (this includes stock vials and stock solutions) shall be secured against unauthorized access or removal unless you or someone from the laboratory authorized to use the material is present (reference OAC 3701:1-38-17; ODH Broad Scope License).

Equipment containing radioactive materials, i.e., cabinets, refrigerators, freezers, etc. that is located in hallways must be locked or contain a secure lock-box inside the storage unit. Moreover, a refrigerator containing a secure lock-box should

also have a special label posting on the outside of the refrigerator.

If the radiation-labeled equipment does not contain radioactive material and is not being used for radioactive material, then the equipment should be decommissioned. For equipment that is used occasionally for radioactive material storage, the equipment shall be locked even if no radioactive material is currently present.

An unsecured refrigerator or freezer labeled as radioactive but which contains no radioactive material is considered a security violation as per RSOF guidelines.

Radioactive waste does not need to be secured in the same manner as other radioactive material. *However*, waste is to be

kept in the waste area of the laboratory and its activity sensibly minimized.

For clarity remember, if you or someone from your lab authorized to use radioactive material is not present, all radioactive material must be secured.

Call DOES at ext. 2906 with any questions regarding security procedures for radioactive materials.



Chemical Spill Response

“DOES must be informed immediately of all spills – call us at x2907 if a spill occurs. After 5 pm Security must be informed : Call x3333.”

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 accidental release involving a hazardous chemical occurs, **the area must be evacuated.** Do not re-enter the area until the hazard is assessed, and DOES has confirmed 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. After 5 pm Security must be informed – call x3333.

Spill Kits. Every laboratory should have their own spill kit, suitable for 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

***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 everything 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 listed above, begin pouring around the perimeter of the spill area and proceed toward the center. Again, sand is fairly ineffective. Scoop up the absorbent 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 immediately.** After normal working hours Security must be notified and a representative from DOES will follow up with you.

Fall Preparations—Is Your Lab Ready for the Fall Semester?

The summer is almost over and classes are about to begin—but how prepared are you? If you run a lab, then chances are you will have new students, new teaching assistants, and maybe even new full-time employees. Or maybe you are new to CWRU. If so—welcome!

To get ready for the new school year, the first thing to do is to make sure that your entire staff is properly trained. All new employees must be trained by DOES. If you are a new employee or find yourself in a new workplace environment, don't wait for someone to tell you to get trained—take responsibility and make sure you are properly trained to handle the possible safety hazards you might face. DOES offers training sessions in a variety of areas including: radiation, chemical, laser, and bloodborne pathogens (BBP). Radiation and BBP Training sessions are subdivided into "New" and "Retraining" sections, so sign-up for the appropriate session based on your training status (which can now be checked by entering your social security # as a code on the DOES homepage at <http://does.case.edu>).

DOES also provides X-ray Training for specialty radiation workers. Remember, if you are not trained in these areas and you are performing

duties which involve these materials, you are out of compliance with both federal and state requirements for safe work practices. Call us immediately (x2907) to sign up for a training session to avoid this problem. Times are frequent and sessions are designed to provide you with practical means of applying safety techniques to better deal with hazardous materials and procedures. Visit our website for a complete schedule of training session dates and times or call our department (x2907). For your convenience, training sessions are also listed in this newsletter on page 7.

Another way to prepare your lab for both workers and students is to “stranger proof” it. You probably spend most of your days there, so you know where and what everything is—but do not assume that other people will also. Go through your lab and make sure everything is (properly) labeled and correctly shelved, sealed, and signed. When there are hazardous materials and items which might be misused, unidentified, or shelved inappropriately, this extra step of preparedness is a must. Also, familiarize your lab with our newsletter. If you keep the old copies in a file or binder (which is a good idea) leave some time

for your staff to leaf through them, or, direct them to our website at <http://does.case.edu> where an archive exists of our past issues. Of particular interest might be our November/December 2007 issue that addressed CWRU's Shut the Sash! Program—a program of safety awareness and energy savings.

Along these lines, take some time in these beginning weeks to go over simple procedures for dealing with topics such as small spills, waste reduction, and fire safety. Consult the appropriate DOES Safety Manual(s) for details. All of our manuals can be found at <http://case.edu/finadmin/does/web/Forms/Forms.html>. Finally, make sure your new employees (and you) know who we are—when you spot a DOES staff member making his or her way around your lab or building, meticulously working to help insure your personal safety, don't be afraid to stop them and introduce yourself.

We are happy to meet you and answer any questions you might have. Have a safe Fall semester by training, practicing, and leading by example. Together, we can make CWRU a safe learning environment for all.

“Go through your lab and make sure everything is (properly) labeled and correctly shelved, sealed, and signed. When there are hazardous materials and items which might be misused, unidentified, or shelved inappropriately, this extra step of preparedness is a must.”

Lab Safety during Pregnancy

“Laboratory workers who are contemplating pregnancy or are pregnant should review the toxicity of the chemicals in their laboratory and should consult DOES to determine whether any of the chemicals used in the laboratory pose additional risk during pregnancy.”

If you are pregnant, special precautions need to be taken while working in a laboratory.

For example, certain chemicals used in the laboratory are known to have a harmful effect on the outcome of a pregnancy.

These chemicals are often classified as “reproductive toxins”—quite simply, they are chemicals that can affect the reproductive system, including mutagens (which may cause chromosomal damage) and embryotoxins (which may harm the fertilized egg or fetus).

The following chemicals have been demonstrated to be embryotoxic in humans:

- acrylic acid
- aniline
- benzene
- cadmium
- carbon disulfide
- N,N-dimethylacetamide
- dimethylformamide
- dimethylsulfoxide
- diphenylamine
- estradiol
- formaldehyde
- formamide
- hexachlorobenzene
- iodoacetic acid
- lead compounds
- mercury compounds
- methylene chloride
- nitrobenzene

- nitrous oxide
- phenol
- thalidomide
- toluene
- vinyl chloride
- xylene
- polychlorinated
- polybrominated-biphenyls

There are other chemicals which may be harmful as well. Laboratory workers who are contemplating pregnancy or are pregnant should review the toxicity of the chemicals in their laboratory and should consult DOES to determine whether any of the chemicals used in the laboratory pose additional risk during pregnancy.

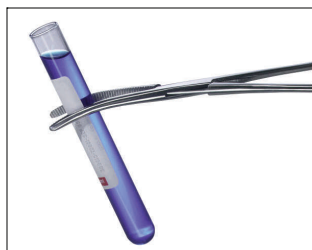
Where is DOES?

If you're new to Case (or simply haven't been to visit us yet), we are located in the Service Building on the 1st floor just off Circle Drive between the Health Sciences Library to the east and the Powerhouse Building to the west. For clarity, call x2906/2907 or check our website (<http://does.case.edu>) for an interactive map before your visit. Keep in mind that much of the information and services (e.g., Safety Services manuals and forms, upcoming training sessions, online training sessions, past newsletters, etc.) that DOES provides can be found conveniently online at (<http://does.case.edu>) at any time.

Proper Disposal of Your Empty Chemical Bottles

All empty chemical bottles are considered hazardous chemical waste, except in cases where there is no chemical residue. It is important to follow all of the following steps before disposing of empty chemical bottles:

- Remove tops
- Remove or cross out the label on the bottle



Proper Disposal of Your Empty Chemical Bottles (continued from previous page)

- Rinse the bottle three times with water. Be sure to follow all safety guidelines when rinsing acid or base bottles (NOTE: Water may not be used for water reactive substances)
- Mark the bottle “MT” or “EMPTY”
- If the bottle is made of glass, place in a sealed cardboard box and mark as exterior “Glass Sharps” (these will be removed by custodial services)
- If the bottle is made of plastic or metal, dispose of it in regular trash

If you have any questions on this procedure, please contact DOES at x2906/2907.



Handling Radioactive Materials Packages

Handling radioactive materials is always a matter of serious concern. And when employees work with radioactive materials regularly, they may feel that their familiarity provides them with a deeper understanding and appreciation of the dangers inherent in radioactive materials. *The bottom line is that no one should ever become complacent around radioactive materials.* Please review the following reminders in question and answer format from the US Dept. of Transportation (DOT). These fundamentals of handling radioactive materials are essential.

Q: *Is it safe to handle packages of radioactive materials?*

A: Packages of radioactive materials are safe to handle under normal conditions. The radiation exposure received from handling these packages is not likely to cause any adverse health effects. However, you should still try to avoid unnecessary radiation

Distance rules described earlier in this booklet. In case of an accident, it may or may not be safe to handle radioactive materials packages. Be sure to stay away from a package that has been badly damaged or is leaking.

Q: *Is it true that everybody is exposed to radiation?*

A: Yes, everybody in the world receives a small amount of radiation exposure at all times. Radiation is given off constantly by radioactive materials all around us—in the ground, in the walls of buildings, even in our own bodies. In addition, the earth is bombarded by radiation from the sun and from outer space, known as cosmic radiation. The additional radiation doses cargo handlers receive in a year from handling radioactive materials packages are generally less than the doses received from these natural sources.

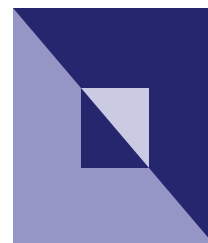
Q: *Can a person or food be-*

come radioactive from being near packages of radioactive material?

A: You cannot become radioactive from the radiation given off from packages of radioactive materials. The exposure to radiation stops when you move away from the packages. The same thing is true for food. If lobsters are stacked next to a radioactive materials package, they will not become radioactive and it is not dangerous to eat them. The only way you can get any radioactivity on you is if the packaging fails and the radioactive material leaks out and comes in contact with you. If you think this has happened, contact your supervisor. The supervisor will arrange to check you with a radiation meter and will see that any radioactive material found is cleaned up properly (usually with soap and water).

Q: *How serious is leakage of radioactive liquid or powder from a package if there is an*

Handling Radioactive Materials Packages continues on page 6.





Modification to the Process of Collecting Animal Carcasses

(A memo sent from Marc Rubin, Assistant Director, DOES, on May 26, 2009, outlined these modifications)

The process of collecting animal carcasses for disposal will be modified to include two new bags. A purple bag for the collection of infectious radioactive animal carcasses has been instituted. These bags are available from

radiation safety along with the normal yellow bags for non-infectious radioactive animal carcasses. Please begin to use these bags now.

These purple bags must be used to store infectious radioactive animal carcasses for decay in storage. Long lived isotope materials must be stored in these purple bags until they are disinfected and sent for eventual

off-site disposal.

The second new bag is clear and labeled “non-infectious non-radioactive” and should be used to discard non-infectious, non-radioactive animal carcasses. This bag will be available from ARC.

Red and biohazard marked bags will continue to be used for infectious animal carcasses.

Handling Radioactive Materials Packages continued from page 5.

Handling Radioactive Materials Packages

(continued from previous page)
accident?

A: There is a chance that radioactive materials that leak from a broken package can be breathed in or swallowed. Even if some gets into your body, however, it is not necessarily dangerous. Remember that most of the packages shipped contain radioactive drugs that are deliberately given to patients by doctors. Some radioactive materials are more dangerous than others. However, the more dangerous radioactive materials are shipped infrequently and must be contained in especially strong packages. It is unlikely that the contents will leak out, even if the packages are dropped or damaged.

Distance Rule

Keep packages some dist-

ance away from you and other people

- When moving packages a long way, use a cart or truck that will let you leave a few feet between you and the radioactive materials packages.
- Position radioactive materials packages so people don't have to stand next to them while handling other packages.
- When there is a convenient choice of locations, store packages farthest from areas occupied by people.
- Do not store packages with transport indexes (TIs) or criticality safety indexes (CSIs) that add up to more than 50 in any group. Groups of such pack-

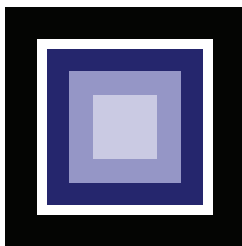
- packages must be stored 6m (20 ft) from all other groups of such packages.

Time Rule

Keep contact time with package short

- Do not take rest periods near radioactive materials packages.
- Do not use packages as meeting places.
- Do not do time-consuming tasks, such as paperwork, near packages.
- Handle packages without delay when moving them from one place to another.

Of course, you should consult your DOES Radiation Safety experts at x2906 if you have any concerns or questions.



Upcoming Training Sessions*

IMPORTANT NOTE: While all laboratories must attend training at DOES, labs must hold specific training in the CHP and ECP as it pertains to the actual work they do. Labs will also need an outline of the CHP and ECP training and a sign in sheet to accompany. Store the sign-in sheet and outline with the CHP and ECP. It will be asked for during lab inspections.

New Hazard Communication (Right-to-Know) Training

Retraining is required annually.

DOES Small Meeting Room - Service Building 1st Floor

PREREGISTRATION IS *REQUIRED!* - Please call 368-2907

New Radiation Safety Training

Retraining is required annually.

DOES conference room - Service Building 1st Floor

PREREGISTRATION IS *REQUIRED!* - Please call 368-2906

New Laser Safety Training

Retraining is required annually.

DOES conference room - Service Building 1st Floor

PREREGISTRATION IS *REQUIRED!* - Please call 368-2906

FOR THE FOLLOWING CLASSES:

Laboratory Safety Retraining

Regulated Chemical Retraining

Hazard Communication (Right-to-Know) Retraining

Bloodborne Pathogen Retraining

Radiation Safety Retraining

Laser Safety Retraining

Respirator Safety Retraining

Please retrain on the Internet at <<http://does.case.edu>> and click on Training.

Print test and fax or mail it to the DOES office.

If your training is more that one year overdue, then you must attend the training class in person and cannot retrain online.

FOR THE FOLLOWING CLASSES:

New Laboratory Safety Training

New Regulated Chemical Training (Formaldehyde, Benzene, Methylene Chloride, Vinyl Chloride, etc.)

New Bloodborne Pathogen Training

New Respirator Safety Training

New BSL-3 Safety Training

Retraining is required annually.

DOES Conference Room - Service Building 1st Floor

PREREGISTRATION IS *REQUIRED!* - Please call 368-2907



Please remember that our updated DOES website provides many resources to meet your safety needs. The DOES website (<http://does.case.edu/>) includes all of the following resources:

- Safety Services Manuals and Forms
- Archived DOES Newsletters
- Training Class Schedules
- Staff Information
- MSDS
- Important Safety Links
- Our Mission Statement
- Contact Information

If you have any questions about our website, please feel free to contact us at ext. 2906/2907

*THIS IS A TRUNCATED LIST OF OUR OFFERINGS. As always, consult our website (<http://does.case.edu>) for a full schedule of training sessions.

DOES STAFF

W. David Sedwick, Ph.D., (wds), Director and RSO
Felice Thornton-Porter (fst2), Q.A. Specialist II
Shirley Mele (smm5), Manager/Ergonomic Coordinator
Gwendolyn Cox-Johnson (gxc13), Dept. Assistant II
Jason May (vfl), Dept. Assistant II
Ronald Tulley (rxt33), Technical Writer

Chemical Safety

Marc Rubin (mdr6), Assistant Director, EH&S
Robert Latsch (rnl2), Specialist II
Bill DePetro (wjd11), Specialist II
Tom Merk (tlm8), Specialist II
Jon Birkes (jon.birkes), Specialist II
Edwin Filppi (edwin.filppi), Specialist I
Mary Ellen Scott, Ph.D. (mas35), Specialist II
Anna Dubnisheva (anna.dubnisheva), Specialist I

Radiation Safety

Yelena Neyman (yxt13), Specialist I
Charles Greathouse (cxg118), Analyst Programmer I
Joe Nikstenas (jen), Operations Supervisor, Specialist II
Victoria Cook (victoria.cook), Specialist I
Sylvia Kertesy (sylvia.kertesy), Specialist I

Remember, all back issues of the DOES Newsletter can be found online at <http://does.case.edu> Simply click on the "Newsletter" link in the left-hand column!

**Department of Occupational and Environmental Safety
Case Western Reserve University
(216) 368-2906/2907 FAX: (216) 368-2236
(E-mail) does@po.case.edu (www) <http://does.case.edu>**