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Case Department of Occupational and Environmental Safety

“SAFETY COMES FIRST”

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Eye Injury Prevention: Knowing the Basics

The laboratories at Case Western Reserve University present many potential hazards to the eye. Proper eye protection, however, should not be limited to workplace. According to the American Academy of Ophthalmology, there are more than 1 million eye injuries each year in the United States when work and residential injury statistics are combined. An astonishing ninety percent of these injuries could have been prevented if the individual had been wearing the appropriate eye-protection. In order to ensure your eye safety, it is important to know how and when to use the appropriate eyewear. Below is a quick summary of some important points to remember regarding eye protection:

- Understand your eye protection choices and what they mean. There are four basic types of eye protection available:
 - 1) Safety Glasses—Safety glasses are designed to protect your eyes from particulate matter. For example, from flying debris in a machine shop. They are not designed for normal lab use and cannot protect your eyes from liquids.
 - 2) Safety Goggles—Safety goggles form a seal that protects eyes from liquids, gases, and mists. They are recommended for lab use, but they do not protect the whole face.
 - 3) Face Shields—Safety (Face) shields protect the face but may not protect the eyes. They are recommended for lab use.
 - 4) Combination (Safety Goggles and Safety [Face] Shield)—This combination provides for the ultimate eye protection in the lab. It shields the eyes and the face from solids, liquids, and gases.
- In case of chemical burn to the eye, flush the eye with clean water for 15-20 minutes and seek emergency medical treatment immediately.

(continued on page 2)

Eye Injury Prevention: Knowing the Basics (continued from page 1)

“In the case of chemical burn to the eye, flush the eye with clean water and seek emergency medical treatment immediately.”

- Wearing proper eye protection is important outside of the workplace as well. The American Academy of Ophthalmology (AAO) notes that safety goggles should be worn when working in a home workshop, yard, or when jump-starting or working on your car.
- The AAO notes that safety goggles should also be worn when working with household chemicals.
- Injuries such as cuts, chemical burns or foreign bodies stuck in the eye are emergencies. Don't try to treat these injuries yourself—contact your Eye M.D. or emergency room for help immediately.
- The leading causes of eye injuries include sports accidents, consumer fireworks, household chemicals, battery acid, and yard debris (particularly projectile objects from lawn mowers and weed “wackers”).
- Always wear protective eye wear during sports and recreational activities.
- Even a seemingly light blow can cause a serious eye injury. If a black eye, pain, or visual problem occurs after a blow, contact your Eye M.D. or emergency room immediately.

Remember, **in the lab, safety goggles should always be worn for eye protection.** They provide protection for the eyes from hazardous solids, liquids, and gases. For full face protection, a safety shield should be used in tandem with safety goggles. Professors are responsible for the use of their labs and any potential fines imposed for failure to wear proper eye protection or for injuries associated with the failure to use proper eye protection.

For more information on eye safety in the lab, please contact DOES at (216) 368-2907. You may also find more information online at the American Academy of Ophthalmology's website (www.aao.org).

Sources: MedicineNet.com (www.medicinenet.com)
American Academy of Ophthalmology (www.aao.org)



Figure 1: New Safety Visor (Visorgogs)

Shipping Dry Ice?—Training Required

Dry ice (solid carbon dioxide) is frequently used by researchers to keep samples of tissue, cells, antibodies, and other products at sub-zero temperature for transport. When transported on a cargo or passenger airplane, dry ice is regulated by the United States Department of Transportation (DOT) and the International Air Transport Association (IATA). There are two reasons dry ice is regulated when transported by air:

1) Dry ice sublimates (changes from a solid to a gas) and creates carbon dioxide gas (CO₂). Carbon dioxide is slightly more dense than air (CO₂ grams/milliliter = .002, Air g/mL = .001) and will “push” air out a room, generating an environment where suffocation can occur. Therefore, it is important that packages containing dry ice are labeled properly so that the amount of dry ice placed into the cargo hold of an airplane can be monitored.

2) If dry ice is placed into an airtight container, an explosion is possible because of increasing pressure due to internal CO₂ gas. Therefore, dry ice requires specific packaging requirement to decrease the possibility of explosions in the cargo hold of an airplane.

If you ship any material on dry ice you are required, by law, to be trained to properly package and label the material prior to shipping. DOES frequently provides training sessions that will help you prepare your packages for shipment.

Currently, there is a self-study “Dry Ice Shippers Training” for researchers who ship non-infectious/non-hazardous materials on dry ice as well as a classroom training session for persons that ship regulated substances on dry ice. If you need to ship any material from campus, please contact the DOES office at 368-2907

“If you ship any material on dry ice, you are required by law to be trained to properly package and label the material prior to shipping.”

DOES Welcomes Victoria Cook

Please join us in welcoming Victoria (Vicki) Cook to DOES. Vicki joined DOES this past January as a Specialist I in Radiation Safety; she holds a BS in biology from Cleveland State University. Before coming to DOES, she worked in the RNA Center as a research assistant in Dr. Pieter de Haseth's laboratory. In July 2007, Vicki had her work (“Strand Opening-deficient Escherichia coli RNA Polymerase Facilitates Investigation of Closed Complexes with Promoter DNA: Effects of DNA Sequence and Temperature”) published in *The Journal of Biological Chemistry*. Vicki has been married for 3 years to husband Patrick. They currently live in Rocky River where they are hoping to purchase a home in the fall. Once again, please join us in welcoming Vicki to DOES.

Announcing a New Web Link on the DOES Website

The Eagleson Institute (a nonprofit foundation with a mission to promote the principles and practices of laboratory safety) has developed a unique online training program which provides concise information on laboratory ventilation equipment with a focus on biological safety cabinets (BSCs). Information is presented through animated presentations and video clips. The five modules provide an overview of laboratory ventilation equipment (including isolators and chemical fume hoods); explain how biological safety cabinets work; differentiate between the different type of BSCs; teach the safe and effective use of BSCs (setup, use & cleanup); and describe how a BSC is tested and certified. The text of the presentations offers particulars for each section. For example, the section on safe and effective use of BSCs discusses alternative sterilizing procedures such as touchplate microburners and electrical furnaces for decontamination instead of an open flame. The program tour takes about fifteen minutes and you can choose among the five modules. The Eagleson Institute provides the online training program at no cost to the user.

“The Eagleson Institute provides the online training program covering the at no cost to the user.”

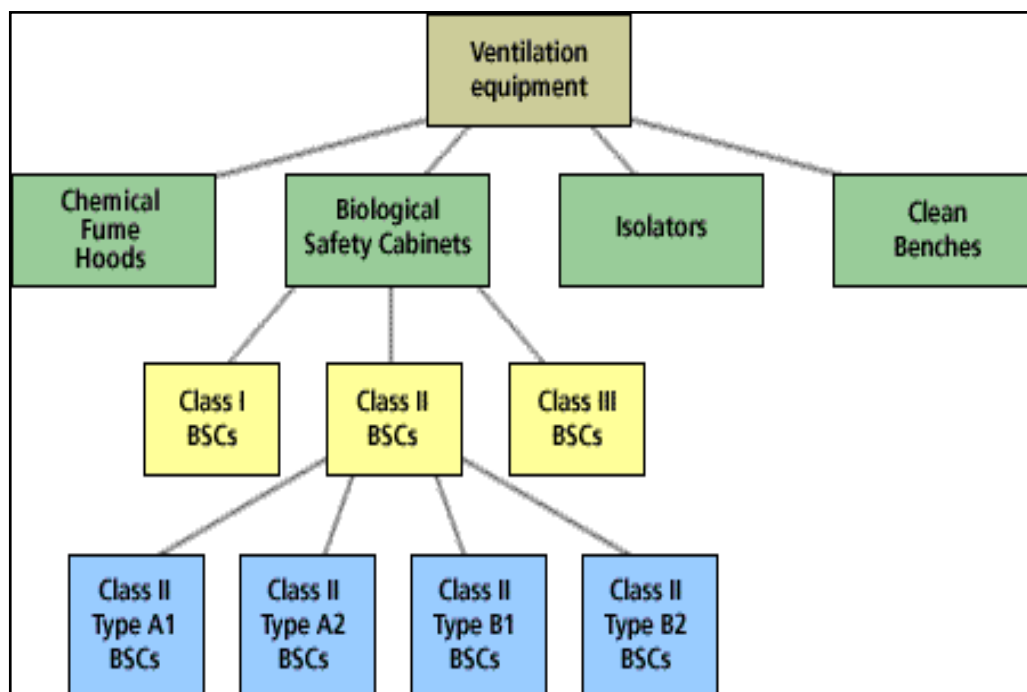


Figure 1: Schematic of Ventilation Equipment

Please take a moment to visit the training site @
http://www.uaf.edu/ibc/BSC_Training/content/home.html

Construction Safety: A Necessary Precaution

With the road construction along Euclid Avenue and the reconstruction of the Cornell Road overpass, there are many things to keep in mind in order to stay safe. Here are a few quick reminders:

When walking:

- Follow signs and stay on designated paths. Do not venture into a construction area for any reason without proper PPE (hardhat, glasses, etc.) and authorization from the foreman in charge.
- Watch for vehicles where you are not normally used to seeing them. While this has presented a parking problem for several areas, this also can mean vehicles backing in and out of the construction site – often, these drivers have a limited range of vision, so give them as wide a berth as possible.
- Be aware of construction actions in motion. This can include overhead\ cranes as well as overland transport and pulling.

When driving:

- Be careful of construction vehicles on the road and give them ample distance, even more so than when walking. This goes for all driving locations – each year, hundreds of workers die due to construction-related highway accidents.
- Never attempt to circumvent a posted detour. While this may seem like common sense advice, numerous accidents are caused each year by impatient drivers looking for shortcuts. Construction workers and barricades are there for a clear reason. Follow all posted detours.
- Plan ahead. If you know construction is ongoing in a particular area, allow extra time to get to and from your destination. Be reasonable—expect delays.

With so many large-scale projects in process around the Case community, construction can often be frustrating, but as our University is improved and expanded, keep safety concerns in mind for both yourself and the workers who are doing their jobs.

“Do not venture into a construction area for any reason without proper PPE (hardhat, glasses, etc.) and authorization from the foreman in charge.”

According to the International Labor Organization (ILO), deaths due to work-related accidents and illnesses represent 3.9 per cent of all deaths and 15 per cent of the world’s population suffers a minor or major occupational accident or work-related disease in any one year.

Compliance Issues: Reminders

General Training: The Department of Occupational and Environmental Safety offers many classes that are not only mandated by the University but also by the Occupational Safety and Health Administration (OSHA). You must make sure that your training is up-to-date and that it is renewed annually. General training classes include Lab Safety, Standard and Regulated Chemicals, Bloodborne Pathogens, Respirator Training, and Shipping, Department of Transportation (DOT) regulations.

DOT Training: The Department of Transportation (DOT) requires training for those that ship materials defined by DOT as “hazardous.” This training must be renewed every two years. DOES offers in-house DOT training.

Outside Contractors: Contractors must be made aware of all hazards when working in unfamiliar environments. Contact DOES if there is a need to have equipment removed or discarded. Also, make sure to ask if there is a need to have any area monitored for hazards, e.g., chemical, radiation, or safety.

As always, consult our website (<http://does.case.edu>) for a full schedule of training sessions or feel free to call us at 368-2907.

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

The summer is over and classes have begun—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 to Case. 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

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

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 8.

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 Case a safe learning environment for all.

Safety Comedy Corner



Security of Radioactive Materials

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 pro-

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.

*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

*Upcoming Training Sessions**

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 can not 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

***As always, consult our website (<http://does.case.edu>) for a full schedule of training sessions**

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Chemical Safety (OSHA Lab Standard Training)

Please call 368-2907 to preregister for this class.

Class Objective: To train all University personnel using hazardous chemicals in a laboratory setting in basic chemical safety principles and the requirements of the OSHA Laboratory Standard 1910.1450.

Class Frequency and Time: The class is offered every Tuesday from 1:00 to 3:00 pm. Also additional classes are available.

Location: The class is held in the DOES conference room in the Service Building First Floor unless otherwise specified in the calendar.

X-Ray Safety Training

DOES Conference Room-Service Building 1st Floor
PREREGISTRATION IS REQUIRED! - Please call 368-2907

See website for training dates.

Again, for a complete listing, please consult the DOES website at...

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

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Shirley Mele (smm5), Manager/Ergonomic Coordinator
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Tom Merk (tln8), Specialist II
Paul Holter (pah9), Specialist II
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