Inside this issue:
page 1-2: Eyewash Standards
page 3: Labeling Research Materials
page 3: Glove & Chemical Resistance Resource
page 3: Explosive Materials Video

EYEWASH STANDARDS AND GUIDELINES FOR THE WORKPLACE

An estimated 1,000 eye injuries occur in American workplaces every day. OSHA says non-compliance with emergency eyewash stations and shower regulations is among its top 25 citations.

So, I will ask you, my collective audience, a question, what is an eyewash? What is a Safety Shower? Is that hand held hose by your lab sink an eyewash or a shower? Are squeeze bottles with eye-cups and saline solution eyewashes? Is the water faucet an eyewash? Per the American National Standards Institute (ANSI) American National Standard for Emergency Eyewash and Shower Equipment, Z358.1-1990, eyewashes and safety showers have many specifications. Here are three important specifications: specific water flow rates, hands free operation, and the valve must remain open until intentionally shut off. So what are the other items sometimes named eyewashes? The squeeze bottles are defined as Personal Eyewash Equipment. The hand held hose is a drench shower. Both of these articles require one hand to operate. Proper procedure is to use both hands to hold open eye lids (and remove contacts if they are being worn) or to remove contaminated clothing while showering.

Inspection and Maintenance

Maintenance benefits students, employees, and the university. Of course, well-maintained equipment will deliver the most effective emergency aid in case of an emergency. Also, properly maintained equipment will have a longer lifespan and will effectively stretch a tight budget.

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The Mission of the Safety Element:
To assist laboratory directors and principal investigators with maintaining and improving the working and teaching environment with regard to the safety and health of employees, students who work, enter, or study in laboratories, and to inform, answer questions, and assist all BYU laboratories in complying with University policy and state and federal regulations.

Inspection

To prevent confusion, an individual from the department should be in charge of checking all devices, including flushing fluids (per manufacturer's instructions) each week. Records of those inspections should be kept
on the device.

Why should we test eyewashes and safety showers? In an emergency situation, seconds can make a significant difference regarding the injury outcome of an individual doused with a hazardous material. With some materials (for example, HF) it could mean the difference between life and death or an altered life. Valves can become clogged with mineral deposits, rust, etc., or even seize in the closed position. As the water sits in the pipe, rust and other particulates become a problem. Just ask someone who tests their shower or eyewash after a long period of not testing it. In rare cases, some microbes can multiply in the stagnant water and cause eye infections.

**Maintenance**

Each plumbed device should be checked weekly to test equipment performance and to flush debris or bacterial sediment. If the eyewash unit is self-contained, follow the manufacturer’s instructions.

**Testing of eyewashes**

If your eyewash is connected to a drain pipe, testing is easy. Push the lever and make sure the eyewash works. I have observed many where only one side works. Non-plumbed eyewashes present a little more of a challenge. A container must be used to catch water so as not to spill the water onto the floor. If the water outlet is too close to the floor to place a container underneath it, a rubber hose large enough to seal around the outlet pipe can be attached and the water directed into the container. Other simple solutions are possible. If you have a good idea, let Kerry Smith know at 8-2943 and it will be put on the Risk Management & Safety Website.

Testing showers is another challenge. The easiest method is to use a shroud (similar to a shower curtain) on a frame that fits around the shower head. You may have already seen such a device as our Chemistry Department owns one. Tuck the curtain into a five gallon bucket, so that water does not leak out, on the floor or on a suitable cart and turn on the shower. Please note: **Holding a five-gallon bucket up to the emergency shower to catch the water is unacceptable.** Once the testing is completed, the water can be poured down a sink drain. Do not use a floor drain as that could create a slipping hazard. If your shower has a chain instead of a solid metal link for operating the valve, be prepared with a broom handle or similar device that can reach the water valve to turn it off after testing. The chain is useless to turn off the valve.

Eyewashes and emergency showers must also be accessible at all times and reachable within ten seconds from a hazardous area. Garbage cans, equipment, etc., are often placed in front of eyewash/emergency showers. Please do not allow this to occur. Check your eyewashes and showers to make sure they are accessible.

**Training**

Have you heard about the story of the chemistry professor who tried but could not operate a fire extinguisher as his lab caught fire? My homework burned in that fire at Utah State University a few years ago. As with fire extinguishers, employees and students must be adequately trained to use an eyewash and safety shower. Regularly scheduled drills should be held both to keep new and current employees informed of the location of emergency devices and to reinforce the importance of immediate emergency care. If you would like the Risk Management & Safety office to assist with training or to report a malfunctioning eyewash or emergency shower, please...
call 8-2943.

Additional information including more of the details from the ANSI Standard, internet links and pictures of different Eyewash Stations will be available on the Risk Management & Safety Website by mid-September.

**LABELING EXPERIMENTAL/RESEARCH MATERIALS**

Labeling containers of known materials is well defined. If you have questions about labeling such materials, please visit the BYU Chemical Hygiene Plan, section 4.6 at http://byu.edu/hr/risk/sprog6.html or call Kerry J. Smith at 8-2943. Labeling experimental or research materials presents a different challenge. Because the properties of the material are generally not completely known, its label cannot be expected to provide all necessary information to ensure safe handling.

So what information should be placed on a label for this type of material? According to the text, “Prudent Practices in the Laboratory,” the most important information on the label of an experimental material is the name of the researcher responsible, as well as any other information such as a laboratory notebook reference, that can readily lead to what is known about the material. Below is a list of information that should be included on such a label.

- **Originator:** find the name, location, and telephone number of the person to contact for safe handling information.
- **Identification:** include anything known, or at least the laboratory notebook reference.
- **Hazardous components:** list primary components that are known to be hazardous.
- **Potential Hazards:** indicate all the known or suspected potential hazards.
- **Date:** note the date that the material was placed in the container and labeled.
- **Shipping:** indicate the name, location, and telephone number of the person to whom the material is being transferred.

**FREE POSTERS**

GLOVE MATERIAL CHEMICAL RESISTANCE INFORMATION

The Risk Management & Safety Office has an abundance of posters from Ansell that lists degradation ratings, permeation breakthrough time and permeation rate for several glove materials. This is a handy reference to post in your lab. Gloves made of the same material from other manufacturers may differ so this is intended as a general guide. We also have additional references if you have any other questions with regard to this issue. Call 8-2943 to receive a free poster.

EXPLOSIVE AND REACTIVE MATERIALS VIDEO

So, you thought you knew the power of chemistry? You don’t until you see this video. The Risk Management & Safety Department has purchased a new video showing several laboratory chemicals (many triggered by normal activities) exploding or reacting in a laboratory setting. This video is for awareness training, so if you or your group are interested in seeing the potential danger presented by picric acid, ethyl ether and other chemicals, please contact Risk Management & Safety at 8-4468. Remember, power (as in chemistry) must always be handled with respect.