

## EYEWASHES AND SAFETY SHOWERS

Eyewashes and safety showers are emergency systems used to protect both employees and students from injuries resulting from contact with hazardous chemicals, chemical compounds, or fire.

These systems are intended to be used in the following ways:

1. Dilution – diluting the chemicals that are on the skin or in the eyes to a nonharmful level
2. Warming/cooling – warming or cooling the body or eyes because of a change in temperature due to chemical exposure
3. Irrigation – flushing the chemicals out of the eyes or off the skin
4. Extinguishment – putting out fires of clothing on the body

The college provides these units in laboratory or shop areas where there is a possible risk of exposure. Employees and students that work in these areas should be aware of the location of these units and how to properly use them in the event of an accident. Faculty members must demonstrate the proper use of these devices to their student prior to the use of the lab or shop.

### **Procedures for Use**

Because some chemicals can irritate or damage skin upon contact, affected areas should be flushed with water as soon as possible. Even when only a small amount of a harmful substance is splashed on the skin, the substance must be washed from the area immediately. In most cases an emergency shower should be used.

When the body is to be flushed following chemical contact, equipment and clothing must be removed once the shower has been activated. Modesty has no place in emergency situations. If necessary, help should be provided to remove contaminated clothing. If a helper becomes contaminated, the individual may have to use the facility along with the initial individual to flush the affected area. Appropriate medical help must be contacted immediately. The affected person should always remain in the shower or continue flushing the eyes for no less than 15 minutes.

Department chairs are responsible for ensuring that students and faculty are provided appropriate personal protective equipment when there is a risk of exposure to hazardous chemicals. Employees and students should use the personal protective equipment if the person is wearing such equipment does not guarantee that hazardous chemicals will not pass to the individual. Care should be taken to ensure that all protective equipment fits the users. All employees should familiarize themselves with any chemicals that they or their students will be exposed to by consulting the material safety data sheets on the chemical.

Since the eye is one of the most vulnerable and important organs, special care should be taken to counteract chemical eye injuries. Chemical eye injuries can be divided into acid

or base types. Both types are burn injuries which have the same appearance—small, abundant cuts to the eye and eyelids, redness, and swelling. These injuries also produce corneal changes, and the eyelids are usually swollen shut. Whether the chemical is splashed in the eye or on the body, decontamination with water from an eyewash or safety shower should be the first aid.

Treatment strategies for injuries from hazardous chemicals vary from water to neutralizing agents. But when an accident occurs, time should not be spent looking for agents when water is usually readily available. If a special agent is needed, it can be used after irrigation with water. Chemical burns should be attended by a doctor or emergency medical personnel who can locate and administer the needed solutions.

Because some chemicals such as concentrated ammonia can penetrate the cornea and enter the anterior chamber of the eye within six to eight seconds, it is extremely important to flush the chemical out immediately before it causes severe damage or blindness. Since it may take 15 minutes or longer before an injured person can be treated by a physician, the affected area must be flushed with water as soon as possible. Neutralizing solutions neutralize an acid or chemical—while water irrigation helps remove the chemical. Chemical burns caused by vapors should be treated in the same manner as those caused by splashes. Early irrigation of the affected area is of most importance to the ultimate outcome of a chemical burn.

The following checklist is provided for all employees with a risk of chemical exposure. Faculty members working with students who may be exposed to chemicals should use this list as an outcome of material to present to their students.

- In case of chemical exposure, flush skin or eyes with cool water for at least 15 minutes. DO NOT RUB!
- Get medical assistance immediately following flushing.
- If possible, continue flushing while on the way to medical help.
- Know the effects of chemicals with which you are working. (Read, ask questions about, and understand the material safety data sheets for each chemical with which you work.)
- Always wear personal protective equipment.
- Learn the location and use of all emergency equipment, even if you are working in a new area for a brief time.
- Know how to help others reach showers or eyewashes and how to help them get medical assistance.
- Hold your eyes open with your hands while using an eyewash to be sure water reaches the eyes.
- Remove contaminated clothing after the shower has been activated.
- Immediately wash off even small amounts of chemicals.

### **Maintaining Eyewash and Safety Shower Facilities**

Eyewashes and safety showers must be maintained and tested on a regular basis to ensure that they are operating properly. All safety showers and eyewashes must be activated

weekly to flush the line and to verify proper operation. The college provides a weekly log near each device to record the results of each test. Department chairs are responsible for ensuring that eyewashes and safety showers in their respective areas are fully activated each week and the results of the test recorded on the verification sheets. Any eyewash or shower that does not operate properly should be reported to the Safety Officer immediately.

These facilities are located as follows:

Biology and chemistry labs

Darkroom

Welding shop

Machine shop

Maintenance shop

Horticulture