



Loss Control Insights

Avoid a Reaction with Chemicals

Chemical spills and splashes can happen in an instant. You should always take personal safety measures when dealing with them, such as wearing proper protective clothing (aprons, gloves, boots, face shields, and goggles).

However, despite every precaution, chemical spills and splashes can still occur. Therefore, proper eye wash and safety shower facilities should always be available and immediately accessible wherever chemicals are being handled.

Know and understand the chemicals you work with. For example, some chemicals such as sodium hydroxide can cause chemical burns because of their caustic action. In addition to this, when such chemicals react with water, thermal burns may also result. Some chemicals such as phenol, in addition to being highly corrosive, are poisonous when absorbed through the skin. The potential dangers and first aid recommendations of various chemicals can be realized by reading the Material Safety Data Sheet (MSDS) and other material on that particular chemical available from the manufacturer.

Burns caused by chemicals are similar to those caused by heat. After chemical burns have been given emergency first aid, their treatment is the same as that for thermal burns. Both chemical and thermal burns destroy body tissue. A chemical will continue to cause damage until reaction with body tissue is complete, or until the chemical is washed away with water.

The severity of chemical burns depends upon the following factors:

- Corrosiveness of the chemical;
- Concentration of the chemical;
- Temperature of the chemical or its solution; and
- Duration of the contact.

The first three factors are set by the very nature of the chemical and the job process in which it is used. The fourth factor, "duration of the contact" is controlled by the proper first aid treatment being administered immediately.

Pending medical treatment, first aid for chemical burns is large amounts of water. Wash off the chemical by flooding the burned area with large amounts of water as quickly as possible for at least 20 to 30 minutes. This method will limit the severity of the burn, and the loss of even a few seconds can be vital.

Always remove all contaminated clothes, hold eyes open while flushing and send for a rescue squad. Transporting the victim before the recommended flushing period is not recommended. Remember to send with the victim pertinent information such as Material Safety Data Sheets, the manufacturer's and product name and labels.

Never apply salves, ointments or neutralizing agents. These can complicate later treatment by requiring removal or can aggravate the injury from heat or other reaction.

First Aid for Chemical Eye Burns

First aid treatment for a chemical burn to the eye should be prompt. It consists of rinsing the exposed eye with large amounts of low-pressure water for at least 20 minutes. This treatment should be started immediately, because delay of only a few seconds may be sufficient to cause serious damage or even loss of vision.

Use any available means for this treatment -- an eyewash fountain, shower bath, hose or any type of water container. The water may be poured from a cup or a glass onto the bridge of the nose and allowed to run over the eyeball while the victim holds his head back (the water should not be poured directly onto the eyeball). If a hose is used, a slow or spent stream of water should be used. A fast stream of water could cause mechanical injury to the eye or drive the chemical back under the lid.

Remember, a person with acid or caustic in one or both eyes is temporarily blind. He may also be suffering intense pain or shock and you may have to help hold the victim's eyes open or keep the victim under the water.

All cases in which a chemical has been in contact with the eyes should be examined as soon as possible by an ophthalmologist or other physician familiar with the procedures for treating chemical burns to the eye. Damage can then be fully evaluated and proper care given.

Protect yourself from the dangers of chemical spills and splashes. But remember, wearing the proper personal protective gear may not be enough. Get to know the chemicals you work with. Learn everything you can about them.