

WHAT IS A CHEMICAL

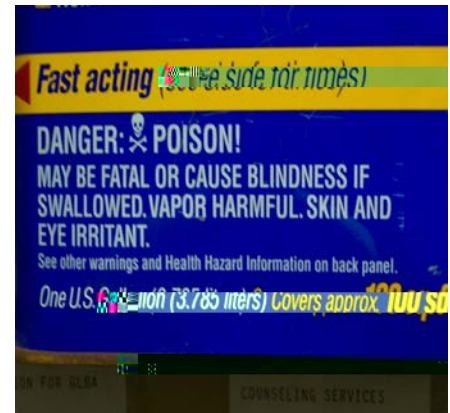
The chemicals covered by the standard include substances in any physical form; liquids, solids, gases, vapors, fumes, or mists whether they are in a container or not. Some of the chemicals used at Western New England University are pure chemicals for use primarily in Science and Engineering laboratories. These are identified by a chemical name and, in many cases, a Chemical Abstract Service (CAS) number

The majority of chemicals used at Western New England University are chemical products; mixtures of different chemicals intended to perform a certain purpose. These include th

CHEMICALS THAT MAY CAUSE ADVERSE HEALTH EFFECTS (HEALTH HAZARDS)

I. HEALTH IMPACTS

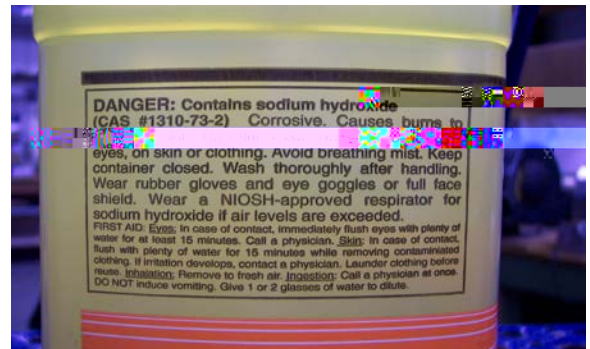
The word “**Poison**” identifies that a chemical that is capable of having an adverse effect on a person’s health. Although there are standardized tests to determine if a chemical is poisonous, these health effects can be very complex. A poison is something that will have an adverse health effect in a part of the body other than where the poison made contact. Certainly things that are swallowed may be circulated through out the body but so can chemicals that are inhaled or absorbed through the skin. Much like a food allergy where something that is eaten may cause a reaction on the skin, are often complex is the relationship between the body part that is exposed to the chemical and the body part that is impacted by the health effect. For example; some chemicals may be absorbed through the skin while some may not; others are toxic if inhaled; and some if swallowed. Some chemicals, such as metallic fumes, will affect the nervous system and thinking processes, while others just the liver, or the lungs and so on. Some chemicals will cause immediate impacts referred to as “**Acute**” effects such as loss of consciousness or organ failure. Others may cause “**Chronic**” effects that may not be noticed for years. For this reason poisonous chemicals are labeled with a reference to “**Route of Entry**” and “**Target Organ**” so that users can better avoid exposures or trace adverse health effects. The chemical label on the right is from a chemical that may be fatal if swallowed but is only an irritant to skin and eyes.



Route of Entry: Swallowed.
Target Organ: Eyes or entire body (fatal).
But for skin or eye contact it is only an irritant.

II. CORROSIVES

The ability of a chemical to eat away the surface of an object or a person’s flesh is termed corrosivity. This is measured using the pH scale. Either of the extremes on the scale; low Ph (0-4), which are the acids, and high pH (10-14), which are the alkalines (or caustics), are considered “**Corrosive**”. These chemicals injure at their point of contact whether on the skin, in the eyes, or inhaled into the respiratory tract. These chemicals are capable of injuries that may leave permanent tissue damage. The terms “non-acid” or “biodegradable” might be on the label but the chemical may still be corrosive.



III. IRRITANTS

“**Irritant**” chemicals are a very common type of hazard in the workplace. These chemicals have an acute (immediate) health affect that is only temporary in nature. This may be skin inflammation, watery eyes, coughing, or other noticeable reaction to a chemical exposure. These health effects are hazardous if they lead to other risks such as blurred vision or shortness of breath. These health effects are not permanent and will begin to subside when the exposure to the chemical is reduced

Other terms are used for unusual hazards or subdivisions of common hazards. Questions regarding any terms can be brought to your supervisor or the ESRM.



DANGER

- a severe hazard
- a hazard that will cause death or serious injury
- a serious hazard even if the chemical is used properly;
- a chemical that can cause immediate eye damage on contact
- or death by ingesting just a few drops.
- Example:

The **DANGER** Signal Word is found on campus most often on spray cans that contain a flammable solvent. First, any cylinder under pressure, regardless of its contents, is considered a Hazardous Material. Second, this chemical is used properly by spraying, that is mixing the contents with air and in effect creating an explosive atmosphere

WHAT ARE PICTOGRAMS?

COMPRESSED
GAS HAZARD

HEALTH HAZARD

ENVIRONMENTAL

IRRITANT

SAFETY DATA SHEETS

The primary means of communicating chemical hazard information is the Safety Data Sheet (SDS). These single or multi
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