Corrosives and Irritants

Corrosives and irritants are chemicals which can cause injury to any bodily tissue that they contact, especially the skin and eyes, but also the respiratory system or the digestive tract. These chemicals are often acids or alkalis (bases).

Health effects

✓ Will cause injury to any body part which they contact.
  o Irritants cause minor, temporary injury (such as redness, itching, etc.) to tissues, such as the skin, and especially the eyes.
  o Corrosives cause serious injuries (such as burns, scarring, etc.), which are more likely to be permanent, and irreversible.
✓ Eye contact may cause permanent damage to vision, including blindness.
✓ Inhaling as a gas, vapor, or mist can cause serious, even fatal injury to respiratory system.

Physical hazards

✓ Most of these chemicals are not flammable, but there are some exceptions. Always read the chemical label and Safety Data Sheet for specific information.
✓ Some corrosives may react violently on contact with various chemicals. Always read the chemical label and Safety Data Sheet for specific information.

Work practices

✓ Store corrosives in a manner and location which will minimize the possibility of accidental spills. Be sure all containers are tightly closed. Minimize splashes and spills.
✓ Use in a ventilated area, like a fume hood.
✓ Store in approved containers.
✓ Never mix corrosives with any other chemical unless directed by the manufacturer. Mixing acids with chemicals that contain Chlorine (such as bleach), or Ammonia can cause generation of potentially fatal gases.

Personal Protection

✓ Read and comply with the chemical label and Safety Data Sheet.
✓ Wear appropriate Personal Protective Equipment. It’s especially important to use eye/face protection such as splash-proof goggles and face shield. Gloves which are appropriate for the specific chemical at hand are also important.
✓ If inhalation of gases, mists, or vapors is likely, ask your supervisor about wearing a respirator. Remember that all respirator users must be enrolled in the University’s respiratory protection program. Training and medical evaluation is always required.
✓ Corrosives and irritants may only be used, mixed, or dispensed where there is an ANSI-approved emergency eyewash within 10 feet.
✓ Emergency shower might also be required.
First Aid

- Flush the affected area with plenty of clean running water for at least 15 minutes.
- Seek medical treatment immediately.
- Apply Calcium Gluconate to HF burns immediately.
Knowledge check

1. What is the best definition of an irritant or corrosive chemical?
   a. A chemical that can cause an injury to any part of the body that it comes into contact with, especially the skin and eyes.
   b. A chemical that attacks the Central Nervous System.
   c. A chemical that reduces the amount of Oxygen in an area.

2. Which parts of the body are most susceptible to injury from these chemicals?
   a. Skin and eyes
   b. Liver and spleen
   c. Central Nervous System (brain, nerves, etc.)
   d. Lungs and airway

3. Which of the following is the most important precaution to take while working with these chemicals?
   a. Wear the proper Personal Protective Equipment, especially on the skin and eyes.
   b. Be sure there’s a fire extinguisher close by.
   c. Be sure there’s an emergency eyewash within 10 feet.
   d. A and C

4. Which of the following describes proper first aid measures?
   a. Flush with plenty of clean running water for 15 minutes
   b. Get medical treatment from a health care professional.
   c. Apply Calcium Gluconate if you’ve been exposed to Hydrofluoric acid (HF).
   d. All of the above.