DEPARTMENT OF
ENVIRONMENTAL
HEALTH AND SAFETY

EHS Fact Sheet

Corrosives (Acids and Bases)

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Definition

Any solid, liquid, or gaseous substance that burns, irritates, or destructively attacks organic tissue or attacks metals or building materials.

Some examples:

Inorganic Acids
- Hydrochloric Acid
- Phosphoric Acid
- Sulfuric Acid

Organic Acids
- Acetic Acid, Formic Acid
- Trichloroacetic Acid

Oxidizing Acids
- Nitric Acid, Perchloric Acid

Bases (Hydroxides)
- Sodium or Potassium Hydroxide
- Ammonia (Ammonium Hydroxide)

Others
- Acetic Anhydride
- Fluorides and some Chlorides

Hazards and Toxicity

- Strong acids and bases can destroy human tissue and corrode metals.
- The effects of the burn can be immediate or delayed.
- Acids and bases are incompatible with each other and need to be segregated.
- Most corrosive materials are non-flammable, except for acetic acid and formic acid. However, nitric acid and perchloric acid are oxidizers and should be segregated from combustible and flammable materials.
- Corrosive materials can have other hazards, however, the corrosivity is usually the primary hazard.
- For compound-specific hazards, consult the SDS for additional information.
- Hydrofluoric acid has unique properties; please consult the EHS Fact Sheet – Hydrofluoric Acid and the Hydrofluoric Acid SDS.

Disposal

- Corrosives needs to routed through the EHS Materials Management section. Please contact EHS for more information.

GHS Pictogram for Corrosive Materials

Usage

- As with any hazardous material, the lab needs to incorporate the hazards and safe handling procedures in the lab operating procedures/ protocols.
- As with all lab procedures/protocols, the PI must ensure all lab personnel have been trained and the training documented.
- Wear chemical safety goggles, not safety glasses. Wear other appropriate PPE such as gloves and a lab coat. A lab apron may be an appropriate choice.
- Use engineering controls such as fume hoods.
- Segregate acids from bases. Store below eye level.
- Know where the eyewash and safety shower are located and how to use it. Flush for minimum 15 minutes.
- Always add acid to water.
- For compound-specific usage, always consult the substance-specific SDS.

Spills

- Clean up small spills using absorbent material or an appropriate neutralizing compound (if available).
- Wear appropriate PPE and have adequate ventilation.
- Hydrofluoric acid spills require a special, HF-specific clean up kit. Do not use other absorbents. Consult the EHS Fact Sheet – Hydrofluoric Acid and the Hydrofluoric Acid SDS for more information.
- Collect cleaned up material for waste disposal.
- For large spills, evacuate area and contact EHS.

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