



Potential Hazards

- Some corrosive acids may be ignitable. Examples include glacial acetic acid, formic acid, and butyric acid – use flammable material cleanup guidance.
- Some can ignite combustible material. Examples include oxidizing acids such as perchloric or chromic acid.
- Contact causes burns to skin or eyes.
- May be harmful if inhaled.
- Concentrated corrosive acids may react vigorously with water.
- Some may be water-sensitive or may generate toxic gases when combined with other chemicals.

Basic Supplies (See EHS Spill Preparedness and Response Training for additional information)

Materials	PPE	Waste Handling
Absorbent pads, pillows, or loose sorbent, OR Acid neutralizer such as Spill-X-A, Neutrasorb, sodium carbonate (soda ash), sodium bicarbonate, or calcium carbonate	Splash goggles Lab coat or apron Shoe Covers (optional) Chemical-resistant gloves	Sealable container Plastic mixing tools Heavy duty waste bags Tape to seal bags Hazardous waste labels

Response Actions/Cleanup Methods

- Alert others in the spill area.
- Don't touch or walk through the spilled material.
- Shut off ignition sources.
- Wear eye and skin protection. Use gloves compatible with acids such as a thick nitrile or neoprene. Avoid breathing vapors.
- As quickly as possible, dike the spilled liquid to prevent spreading.
 - Spill pillows, pads, or a general absorbent material may be used.
 - Use only inert non-combustible absorbents with oxidizing acids.
- If acid is neutralizable**, use a weak base such as sodium carbonate (soda ash), sodium bicarbonate, or calcium carbonate. You can also use an acid neutralizer product such as Spill-X-A® (need pH paper with it), Neutrasorb® (has built-in pH indicator).
 - Add neutralizer slowly and work from edges of spill inward. Use caution because the reaction can cause splattering.
 - Mix the neutralizer with a plastic spatula or other tool. Be sure to mix well to assure material is neutralized.
 - Test pH or use product's color indicator to determine level of neutralization.
 - When pH is 6-8, it is no longer considered hazardous waste. The neutralized material may be carefully dissolved in water and washed down the sink.
 - Any items used to absorb or dike non-neutralized acid should be considered corrosive and disposed of as hazardous waste.
 - After the neutralized spill material has been picked up, spray the area lightly with water; test with pH paper to ensure all corrosive material has been removed.
- Clean up spill with absorbent if it's not recommended to neutralize the acid** or if a neutralizer is not used.
- If solid, you do not need to neutralize or absorb.
- Pick up spill cleanup materials with plastic tools and place into a plastic or glass container with a sealable lid. The material may also be double-bagged and placed into a sealable cardboard box.
- Label material for collection by EHS.
- Thoroughly ventilate the area after cleanup.
- Clean the area with detergent and water after the spill cleanup.

****Acids that may be neutralized include hydrochloric acid, sulfuric acid, nitric acid, and phosphoric acid.**

Do not neutralize acids that contain heavy metals or are oxidizing acids. Examples of acids that you should not neutralize include chromic acid, perchloric acid, and fuming nitric acid. **Do not neutralize hydrofluoric acid.**

Note – some acids may not be washed down the drain even if neutralized because they have other characteristics that make them hazardous; for example, neutralized chromic acid cannot be sewered because it contains the toxic heavy metal chromium. For these acids, simply absorb the material, rather than neutralize it.

Factors That Can Complicate Spill Response

- Spilled corrosive acid material may become a major spill due to presence of ignition sources if the acid is flammable, combustible, or oxidizing.
- Spilled corrosive acid material may become a major spill due to a large quantity spilled, a complex situation such as multiple chemicals spilled or involved in a spill, or if special respiratory protection is required for response.
- Special respiratory protection may be required if there is an inhalation hazard due to:
 - Increased toxicity/volatility
 - Severe short term health effects
 - Highly volatile or toxic materials spilled in poorly ventilated areas, etc. For example, a large quantity of concentrated hydrochloric acid would be both corrosive and volatile and can quickly cause respiratory tract damage if inhaled.
- Hydrofluoric acid (HF) requires very special precautions to protect health, an absorbent that is compatible with HF (not a silica or sand-based material), and written spill response procedures in place **prior** to beginning its use.