



**Oakland County Medical Control Authority**  
**Special Operations Protocols - Hazardous Materials**  
**Medical Response Team**  
**Corrosive Agents**

Initial Date: September 2022  
Revised Date: 9/14/2023

Section 10.104

***This Protocol is intended for use by a Hazardous Materials Response Team.  
Corrosive Agents***

Common Acids: Acetic acid, Hydrochloric acid, Nitric acid, Phosphoric acid and Sulfuric acid,

Common Bases: Ammonium hydroxide, Potassium hydroxide, Sodium hydroxide.

Oxidizers include: Chlorine dioxide, Hydrogen peroxide, Methyl ethyl ketone peroxide, Sodium chlorate. May cause hemolysis and methemoglobin.

White phosphorus is found in fireworks and explosives. Monitor for cardiogenic shock and arrhythmias.

**FORMS:**     **A corrosive agent** may be found as solids in pellets, flakes, lumps or sticks and liquid.

**USES:**       Acid neutralizer in petroleum refining, cleaning agents, hair straighteners, paint removers, solvents, water treatment, processing of cellulose, paper, textiles and plastics.

**ROUTES OF EXPOSURE:** Skin and eye contact, inhalation, ingestion

**TARGET ORGANS:**     *Primary* – Skin, eyes, respiratory system, gastrointestinal system.

*Secondary* – Central nervous system, cardiovascular system.

**LIFE THREAT:**       Severe tissue irritant that may cause upper airway burns and edema, pulmonary edema and skin burns. May cause GI perforation, hemorrhage and peritonitis leading to circulatory collapse.

**SIGNS AND SYMPTOMS:**

**CNS:**                Apathy, mental confusion, blurred vision and tremors.

MCA Name: Oakland County  
MCA Board Approval Date: October 6, 2023  
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Page 1 of 2



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- Eye:** Chemical conjunctivitis, corneal ulceration, severe scarring, permanent blindness.
- Cardiovascular:** Tachycardia, hypotension and shock.
- Respiratory:** Dyspnea, tachypnea, sneezing, coughing, stridor, burns, upper airway edema and pulmonary edema.
- Gastrointestinal:** Nausea, vomiting, hemorrhage, perforation, abdominal pain, painful swallowing, profuse salivation, and burns to the mouth, esophagus, stomach and gastrointestinal tract may occur.
- Skin:** Deep tissue chemical burns, skin rash (in milder cases), cold and clammy skin with cyanosis or pale color.

Symptom onset for acute exposure is generally immediate. Some symptoms such as pulmonary edema, GI perforation and cardiovascular collapse possibly delayed.

**Pre-Medical Control**

**PARAMEDIC**

1. Follow **10.100 General Hazardous Materials Treatment** protocol. **Aggressive airway management may be necessary.**
2. Do not attempt to neutralize with an acid because of exothermic chemical reaction.
3. Dilute ingestions orally with water in alert patient.
4. Remove clothing for liquid dermal exposure – initiate body wash with water.
5. Refer to **10.105 HAZMAT Eye Irrigation** protocol for eye exposure.
6. Pain may be treated per the **7.13 Pain Management Procedure.**

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Page 2 of 2