



Oakland County Medical Control Authority
Special Operations
Hazardous Materials Medical Response Team
HYDROGEN SULFIDE, SULFIDES AND MERCAPTANS

Initial Date: September 2022

Section 10.108

Revised Date: 9/14/2023

This Protocol is intended for use by a Hazardous Materials Response Team.
Hydrogen Sulfide, Sulfides and Mercaptans

FORMS: Gas (hydrogen sulfide, methyl & short-chain alkyl mercaptans), liquid (other mercaptans).

ROUTES OF EXPOSURE: Skin and eye contact, inhalation, skin absorption.

SIGNS AND SYMPTOMS:

- CNS:** Headache, confusion, dizziness, excitement, tiredness and a garlic taste in mouth. Decreased LOC, coma and seizures.
- Eye:** Chemical conjunctivitis, lacrimation and photophobia.
- Cardiovascular:** Cardiovascular collapse, tachycardia and arrhythmias.
- Respiratory:** Irritation of respiratory tract, cough, dyspnea and tachypnea. Respiratory arrest and pulmonary edema may be present.
- Gastrointestinal:** Nausea, vomiting, hemorrhage, perforation, abdominal pain, painful swallowing, profuse salivation, and burns to the mouth, esophagus, stomach and gastrointestinal tract may occur.
- Skin:** Dermatitis, sweating and local pain. Cyanosis may be present.
- Other:** Symptoms may be delayed. The ability to detect the product by smell may be lost after a short exposure time.

Pre-Medical Control

PARAMEDIC

1. Follow **10.100 General Hazardous Materials Treatment** protocol.
2. Administer oxygen 10-15 L via non-rebreather mask or BVM.
3. In the symptomatic patient with significant exposure administer the Cyanide Poisoning Kit.



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Cyanide Poisoning Kit – Note Sodium Thiosulfate is not effective for Hydrogen Sulfide exposure.

1. Administer Amyl Nitrite: Break pearls into gauze sponge and hold under patient's nose or BVM intake valve for 30 seconds of every minute until sodium nitrite solution is ready. Change ampule every 3 minutes.

Post-Medical Control

1. Administer Sodium Nitrite (3% IV solution):
Adult: 10 ml (300 mg) over 5 – 10 minutes, slow IVP, or 0.33 ml/kg over 5 – 10 minutes slow IV push.
Child: 0.33 ml/kg, maximum of 10 ml, over 5 – 10 minutes slow IV push.
2. Repeat antidote at 50% of initial dose if symptoms persist after 20 minutes. If symptoms worsen after treatment consider nitrite toxicity causing Methemoglobinemia. Follow **1 0 . 1 0 9 Methemoglobinemia** protocol, but do not treat with Methylene Blue.