

**REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
BLS**

SMO: Phosgene

Revised Date:

Overview: Phosgene is produced commercially by chlorinating carbon monoxide. It is used as a chemical intermediate in the manufacture of chemicals such as isocyanates, polyurethane, polycarbonates, dyes, pesticides and pharmaceuticals. It is also a by-product of burning or heating most volatile chlorinated compounds such as Freon, certain solvents, dry-cleaning agents and paint removers. Phosgene is a colorless, fuming liquid at 47 degrees Fahrenheit, and is a gas at room temperature. At a low concentration, it may have the odor of newly mown hay; however, the odor threshold is 5 times the OSHA permissible exposure limit, so detection of odor correlates with a potentially significant exposure. Phosgene is slight soluble in water and hydrolyzes to hydrochloric acid. Its main toxicity is from inhalation; toxicity is determined by concentration of phosgene in the air and the length of exposure. Phosgene is heavier than air and may cause asphyxiation in poorly ventilated, enclosed spaces. All suspected or confirmed cases of phosgene intoxication must be reported to the local department of public health and the Illinois Department of Public Health.

INFORMATION NEEDED

- History of current illness
- Length of exposure
- Concentration of phosgene, if known
- How many patients are there
- Type of exposure, gas or liquid

OBJECTIVE FINDINGS

- **Airway:** Upper airway irritation may not be present or may have mild irritation if a large exposure has occurred. Phosgene is a slightly water soluble gas and exerts most of its damage in the lower respiratory tree
- **Pulmonary:** Usually asymptomatic initially; however 30 minutes to 72 hours later, patients may develop respiratory problems such as cough, dyspnea, tachypnea progressing to pulmonary edema and ARDS. Patients who survive 48 hours usually survive to discharge from a hospital. Phosgene exposure also has been associated with chemical-induced asthma
- **Cardiovascular:** Instability can be caused by hypoxia and respiratory collapse
- **Dermal:** If the skin is wet or moist, may develop irritation and redness
- **Eyes:** Tearing and irritation not uncommon; opacification of the cornea may occur in rare instances
- **GI:** May have hepatic and/or renal necrosis from direct phosgene effects on end organs. Nausea and vomiting may be seen post exposure

BLS

- ___ Decontamination
 - Fluid exposure will require decontamination
 - Gas exposures without eye or skin complaints do not need decontamination
 - For symptomatic ocular exposures, flush eyes for 15 minutes
- ___ Standarded isolation procedures must be used by all EMS personnel
- ___ Assess for other medical or trauma issues
- ___ Vital signs
- ___ Assess respiratory effort and airway patency
- ___ Provide supplemental oxygenation by nasal cannula at 2-6 LPM or by non-rebreather mask at 10-15 LPM
- ___ Assist ventilations as necessary
- ___ Albuterol nebulizer treatment if the patient is displaying signs of bronchospasm
- ___ Pulse oximetry
- ___ Call for BLS, ILS or ALS support

Documentation of adherence to protocol:

- ___ History of illness
- ___ Oxygen provided
- ___ Decontamination procedures used, if any
- ___ Ventilatory support
- ___ Medications provided, if any

Medical Control Contact Criteria

- Contact Medical Control as soon as possible
- Call for ILS or ALS support if there is any signs of respiratory difficulty
- Contact Medical Control prior to administering Albuterol nebulizer treatment

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ALS

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- ___ Vital signs
- ___ Assess respiratory effort and airway patency
- ___ Provide supplemental oxygenation by nasal cannula at 2-6 LPM or by non-rebreather mask at 10-15 LPM
- ___ Assist ventilations as necessary
- ___ Albuterol nebulizer treatment if the patient is displaying signs of bronchospasm
- ___ Pulse oximetry
- ___ Cardiac monitor

Documentation of adherence to protocol:

- ___ History of illness
- ___ Oxygen provided
- ___ Decontamination procedures used, if any
- ___ Ventilatory support
- ___ Medications given
- ___ Cardiac rhythm strip

Medical Control Contact Criteria

- ___ • Contact Medical Control as soon as possible