

PHOSGENE: Health Care Information

Phosgene is a poorly-water-soluble irritant gas that is used in the manufacture of dyes, resins and pesticides. Phosgene may be released accidentally from manufacturing plants or produced from burning chlorinated compounds. Phosgene has been used as a military warfare agent and could be used as a terrorist agent via an aerosol release.

Recognition and Triage: Phosgene may produce immediate (in high concentrations) or **delayed** (up to 24 hours, depending on concentration) **irritation of the skin and mucous membranes (pharyngitis, rhinitis, conjunctivitis)**. High concentration or prolonged exposure may lead to **lower airway swelling, cough, necrosis and pneumonitis**. Patients may be triaged as follows:

Immediate: Respiration >30/min, hypoxemia or upper airway edema

Delayed: Mild mucosal irritation or cough

Minor: Asymptomatic (minor patients must be observed for delayed symptoms)

Personal Protective Equipment (PPE) (at the health care site): The primary risk to health care workers is inhalation of phosgene vapor from patient clothing (very unlikely). Personnel who decontaminate patients should wear splash-proof PPE (waterproof outer garment and chemical-resistant gloves) and a filtered-air respirator. Personnel treating decontaminated patients require no PPE other than universal precautions.

Decontamination (at the health care site): Sufficient decontamination includes removal of ALL clothing and jewelry and thorough washing of the skin and hair with water for 3 to 5 minutes.

Diagnosis and Treatment: Treatment is supportive. Remove clothing and **decontaminate** any exposed skin with copious water. Exposed or painful eyes should be flushed with 1 to 2 liters of water or normal saline; then continue flushing until the ophthalmic pH is between 7 and 8. An ophthalmic anesthetic should be used prior to flushing. **Oxygen** may be required for hypoxemia. **Early intubation should be considered for upper airway swelling or severe pneumonitis with impaired oxygen exchange.** **Bronchodilators** (e.g., albuterol) may be used for wheezing or cough. Contact the Poison Center (**1 800 222 1222**) for specific questions or advice on individual patients.

Patient Monitoring: Phosgene has no systemic effects. Continuous monitoring of pulse oximetry and end-tidal carbon dioxide may help assess oxygen exchange; however, patients with impending upper airway obstruction should be intubated early.

Disposition Criteria (when to send patient home): Initial mild symptoms may progress to corneal opacity, airway obstruction and pneumonitis. Patients with significant ocular, airway or lung irritation should not be discharged. Patients with mild or no symptoms should be observed for an 8-hour period. If symptoms are gone or mild after 8 hours, and the pulse oximeter is normal, patients may be discharged with instructions to return if symptoms worsen. Pneumonitis has been reported up to 24 hours after the exposure, so patients must be warned of this and must be able to return prior to considering discharge.

Reporting/Coordination Link: Call the Poison Center (**1 800 222 1222**) for information on specific patients. Contact the local or state public health authority to report a mass casualty incident (see attached contact list).