

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

SMO: Ammonia

Revised Date:

Overview: Ammonia exposures occur from contact with liquefied gas, gas or aqueous solution. Anhydrous ammonia is transported and stored under pressure as liquefied gas but is a gas at room temperature and pressure. Aqueous ammonia solutions range in concentration from 5% (household use) to 25% or greater (commercial use). When ammonia comes in contact with water, it forms ammonium hydroxide, a potent, alkaline-corrosive solution. Ammonia gas or concentrated solution can cause severe corrosive burns on contact. The extent of injury will be dependent upon the duration of the exposure and the ammonia concentration of the gas or liquid.

INFORMATION NEEDED

- Type of exposure
- Length of time of exposure
- Number of patients
- What decontamination procedures have already occurred

OBJECTIVE FINDINGS

- **Airway: Burning sensation of the mouth, nose and pharynx can occur. Serious exposures (gas or ingestion) can result in swelling of the upper airway and larynx with stridor, muffled voice or aphonia as signs of impending occlusion**
- **Pulmonary: Bronchospasm, wheezing and cough**
- **Cardiovascular: No direct cardiovascular effects; may have secondary effects from hypoxia**
- **CNS: No direct CNS effects; may have secondary effects from hypoxia**
- **Dermal: Burning and irritation from concentrated solutions and gases. In addition, frostbite injury from contact from liquefied anhydrous ammonia is possible**
- **GI: Severe mucosal, esophageal and intestinal injury possible from ingestion of alkaline-corrosive solution**
- **Ocular: Burning, irritation and swelling from gas or liquid exposure**

BLS

- Scene safety is of the utmost importance for the EMS personnel
- For skin exposure: Gas exposures usually do not need decontamination, Patients exposed to liquefied gas or large amounts of aqueous solution should have clothing removed and should be decontaminated with water for at least 5 minutes
- For eye exposure: For symptomatic exposures, irrigate eyes for 30 minutes with water or saline
- For Ingestion: Consider dilution, initially with a small amount of milk or water
- Assess the patient for respiratory status
- Secure a patent airway
- Assess the patient for medical and/or trauma issues
- Administer oxygen per nasal cannula at 2-6 LPM or by non-rebreather mask at 10-15 LPM as needed

- Treat burns as clinically indicated
- Vital signs
- Call for ILS and/or ALS support
- Albuterol nebulizer treatment may be required to combat bronchospasm

Documentation of adherence to protocols:

- Scene safety for patients and EMS personnel
- Decontamination procedures used
- Airway measures taken to secure the airway as needed
- Oxygen provided
- Albuterol treatment provided

Medical Control Contact Criteria

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| <ul style="list-style-type: none"><input type="checkbox"/> • Contact Medical Control as soon as possible to seek ILS and/or ALS support<input type="checkbox"/> • Contact Medical Control prior to administering an Albuterol nebulizer treatment |
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PRECAUTIONS AND COMMENTS

It is highly recommended that each EMS provider be very familiar with decontamination techniques for this type of patient. These decontamination procedures can be found in the local, area and state guidelines for ammonia decontamination.

**REGION I EMERGENCY MEDICAL SERVICES
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ALS**

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ALS

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- For Ingestion: Consider dilution, initially with a small amount of milk or water
- Assess the patient for respiratory status
- Secure a patent airway
- Assess the patient for medical and/or trauma issues

- Administer oxygen per nasal cannula at 2-6 LPM or by non-rebreather mask at 10-15 LPM as needed
- Treat burns as clinically indicated
- Vital signs
- Call for ILS and/or ALS support
- Albuterol nebulizer treatment may be required to combat bronchospasm
- IV of N.S.
- Cardiac monitor

Documentation of adherence to protocols:

- Scene safety for patients and EMS personnel
- Decontamination procedures used
- Airway measures taken to secure the airway as needed
- Oxygen provided
- Albuterol treatment provided
- Albuterol treatment provided
- Cardiac rhythm strip for documentation

Medical Control Contact Criteria

- | |
|---|
| <input type="checkbox"/> • Contact Medical Control as soon as possible. |
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