Illinois Department of PUBLIC HEALTH

Fact Sheet for Emergency Evaluation and Treatment

POISON Help 1-800-222-1222 ILLINOIS POISON CENTER

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN
Illinois Chapter

METHYL ISOCYANATE

(isocyanomethane, isocyanatomethane, methylcarbylamine, MIC)

Background:

Methyl isocyanate (MIC) has multiple uses in the pesticide and plastics industries. It usually is handled and transported as a liquid, which is flammable and explosive. MIC evaporates rapidly in air; the most common route of exposure is inhalational. It has a pungent odor, however, health effects have been reported below the odor threshold; therefore lack of odor is not a reliable indicator of non-exposure. MIC is 1.4 times heavier than air and will 'pool' in low-lying areas. All suspected or confirmed cases of MIC poisoning must be reported to the local department of public health and the Illinois Department of Public Health (IDPH).

Signs/Symptoms:

1) Skin: Irritation, burning sensation, chemical burns.

2) HEENT: May cause permanent damage with cataract formation or chronic blepharitis.

3) Pulmonary: Low concentrations may produce mild respiratory irritation. High concentrations can cause cough, dyspnea, increase secretions, chest pain, tightness and asthmatic episodes. Pulmonary edema and/or ARDS may develop in some cases.

4) CNS: Acute lung injury-induced hypoxia may produce CNS depression.

5) GI: GI irritation, vomiting and/or defecation may occur.

Children exposed to the same levels of MIC as adults may receive larger doses because they have relatively greater lung surface area: body-weight ratios and higher minute volume: weight ratios. In addition, they may be exposed to higher levels than adults in the same location because of their short stature and higher levels of MIC are found nearer to the ground.

Laboratory and Diagnostic Testing:

1) Routine blood and chemistry tests

2) CXR

3) Pulse ox

4) Consider ABG

Treatment:

Decontamination:

Patients exposed only to MIC gas pose no risk of secondary contamination and need only removal of clothing. Patients whose skin or clothing is contaminated with liquid MIC can secondarily contaminate staff by direct contact or through off-gassing of vapors. These patients must have clothing removed and be decontaminated with soap and water.

Supportive Care:

There is no specific antidotal therapy for MIC poisoning. The cornerstone of treatment is basic supportive care including fluids for management of emesis and airway/pulmonary management for treatment of inhalational exposure. Consider bronchodilators and steroids for wheezing/bronchospasm. Consider racemic epinephrine with patients  *(especially children)* with stridor.

If you suspect a poisoning exposure from any bioterrorism agent, immediately contact your local county health department, and the Illinois Poison Center at 1-800-222-1222.