

Poison Facts:

Medium Chemicals: Stibine

Properties of the Chemical

Stibine is a colorless gas with an unpleasant odor similar to that of hydrogen sulfide (rotten eggs). The substance decomposes slowly at room temperature but does so quickly at 200 degrees C, producing metallic antimony and hydrogen. It reacts violently with chlorine, concentrated nitric acid and ozone, creating a fire and explosion hazard.

Uses of the Chemical

Stibine is created when an acid reacts with metal containing antimony. It is produced in lead acid battery manufacturing. It can be produced by overcharging storage batteries. Stibine is used as a fumigating agent. Patients can be exposed to stibine when welding, soldering and etching zinc.

Absorption, Distribution, Metabolism and Excretion (ADME)

Stibine is absorbed through inhalation. It can be detected in the blood, liver, lungs, kidneys, thyroid, adrenals and pancreas. The highest concentrations are usually found in the thyroid, adrenals, liver and kidneys.

Clinical Effects of Acute Exposure

Stibine is a gas, and exposures will be primarily through inhalation. Human exposures isolated to stibine are rare. Generally, the patient will also be exposed to arsine and hydrogen sulfide in conjunction with the stibine. The substance irritates the respiratory tract, causing pulmonary irritation, characterized by coughing. The primary effects of stibine are hemolysis followed by hematuria. Stibine hemolyzes red blood cells, causing secondary renal and hepatic effects. Jaundice has also been reported. Patients complain of severe headaches early in their exposure and can develop seizures.

In-Field Treatment Prior to Arrival at a Health Care Facility

Move the patient to fresh air away from the contaminated environment. Supply supplemental oxygen if available. Irrigate skin and eyes with copious amounts of water as necessary.

Special note to first responders:

- Wear a positive-pressure Self-Contained Breathing Apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer.

Treatment of Exposures in a Health Care Facility

Administer 100 percent humidified oxygen with assisted ventilation as required. Also administer inhaled beta-adrenergic agonists for bronchospasm. Obtain baseline CBC, urinalysis, serum hemoglobin, liver and kidney function tests. Observe all patients with inhalation exposure to stibine for any systemic signs or symptoms for 4 to 6 hours. If severe hemolysis has occurred, an exchange transfusion should be performed in conjunction with hemodialysis.

For more poison prevention and first aid information, call the

Poison Control Center

Serving the Residents of Kansas

Toll-free Hotline

1-800-222-1222

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