



TOXIC SYNDROME DESCRIPTION

Sodium Azide

The purpose of this document is to enable health care workers and public health officials to recognize an unknown or suspected exposure to sodium azide. Sodium azide is a rapidly acting, potentially lethal chemical that exists as an odorless, white crystalline solid. It is used in automobile airbags to inflate the airbag upon impact. Sodium azide is rapidly converted into hydrazoic acid vapor upon contact with water or an acid. Like sodium azide, hydrazoic acid is highly explosive. Similar to cyanide, sodium azide and hydrazoic acid interfere with cellular respiration and aerobic metabolism, preventing cells from utilizing oxygen. The sites in the body that are most sensitive to acute sodium azide poisoning are those within the central nervous system and the cardiovascular system.

The amount and route of the exposure to sodium azide and the premorbid condition of the exposed person will contribute to the time of onset, duration, and severity of illness. For example, inhaling sodium azide would be expected to lead to a quicker onset of poisoning, to cause a more rapid progression of poisoning, and to result in loss of consciousness and death more often compared with ingesting sodium azide, given the same amount.

Signs and symptoms

The following is a more comprehensive list of signs and symptoms that may be encountered in a person exposed to sodium azide. Signs and symptoms are not listed in order of presentation or specificity. Also, partial presentations (an absence of some of the following signs/symptoms) do not necessarily imply less severe disease.

Central nervous system signs and symptoms

- Headache
- Agitation
- Dizziness
- Loss of consciousness (sudden collapse)
- Convulsions
- Coma

Respiratory signs and symptoms

- Dyspnea (shortness of breath)
- Chest pain
- Hyperpnea (increased respiratory rate/depth)
- Bradypnea (decreased respiratory rate)

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Cardiovascular signs

- Tachycardia (increased heart rate)—early
- Hypertension (high blood pressure)—early
- Bradycardia (decreased heart rate)—late
- Hypotension (low blood pressure)—late
- Flushing

Gastrointestinal signs and symptoms

- Abdominal pain
- Nausea
- Vomiting

Other signs

- Skin and eye irritation
- Similar color of retinal arteries and veins

Laboratory findings suggestive of sodium azide poisoning

- Metabolic acidosis with elevated anion gap (based on specific laboratory reference range)
- Increased plasma lactate level (above specific laboratory reference range)
- Increased serum azide level (above specific laboratory reference range; diagnostic but not clinically helpful)

Differential diagnosis

- Carbon monoxide
- Hydrogen sulfide
- Cyanide
- Ethylene glycol
- Methanol
- Phosphine
- Fluoroacetate

Note: The actual clinical manifestations of an exposure to sodium azide may be more variable than the syndrome described in this document.

This toxic syndrome description is based on CDC's best current information.
It may be updated as new information becomes available.

For more information, visit www.bt.cdc.gov/chemical, or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

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