

# Chemical Emergency Medical Guideline

Information and recommendations for first responders and patients

## Hydrazine

CAS No.: 302-01-2; 10217-52-4; 7803-57-8

GHS symbols:



**GHS05**  
Corrosive



**GHS06**  
Acute toxicity



**GHS08**  
Health hazard

**Signal word: Danger**

**Hazard statements:**

- |           |  |
|-----------|--|
| H314      | Causes severe skin burns and serious eye damage. |
| H317      | May cause allergic skin reactions.               |
| H330      | Fatal if inhaled.                                |
| H350      | May cause cancer.                                |
| H301+H311 | Toxic if swallowed or in contact with skin.      |

### Overview

- Before the first aider approaches a patient, who has been or is exposed to hydrazine, they must ensure that there is no danger to themselves from hydrazine.
- There is no danger from contact with patients who have only been exposed to hydrazine gas. A patient who is wet with hydrazine-containing liquid, or whose clothing is wet with it, may endanger other people through direct contact or through hydrazine gas emissions.
- Hydrazine is highly irritating as a gas or liquid and can cause severe burns to the eyes and skin.
- Inhalation can cause irritation of the respiratory tract with swelling of the nasal and throat mucosa, larynx, coughing and shortness of breath. Signs of fluid accumulation in the lungs (shortness of breath, blue-red discoloration of the skin and mucous membranes, sputum, coughing) may occur.
- General symptoms such as nausea, vomiting, stomach pain, central nervous system disorders, tremors and convulsions may occur.
- Treatment is symptomatic. Pyridoxine can be used as an antidote for neurological symptoms.

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## 1. Information about the substance

Hydrazine (NH<sub>2</sub>-NH<sub>2</sub>), CAS; 302-01-2

Hydrazine hydrate (N<sub>2</sub>H<sub>4</sub>H<sub>2</sub>O), CAS: 10217-52-4 (contains 55% hydrazine w/w); CAS: 7803-57-8 (contains 64% hydrazine w/w)

Synonyms: diamine, diamide

At room temperature, hydrazine is a colorless, fuming, oily liquid with an ammonia-like, fishy odor. It decomposes into ammonia, hydrogen and nitrogen oxides, is flammable and explosive (boiling point 113.5°C, flash point 37.8°C).

Hydrazine has been used as a rocket fuel and corrosion inhibitor and is used as an intermediate product and in polyurethane production.

## 2. Exposition

### 2.1. Inhalation

Inhalation is a significant route of exposure to hydrazine. The odor and irritant effect of hydrazine serve as a clear warning. Respiratory difficulties, including shortness of breath with coughing, constriction of the upper respiratory tract and bronchi, and accumulation of fluid in the lungs may occur.

### 2.2. Skin/eye contact

Hydrazine is rapidly absorbed through the skin in significant quantities. Direct contact of the eyes or moist skin with liquid hydrazine or concentrated gas causes irritation/chemical burns. Allergic skin reactions have been observed.

### 2.3. Ingestion

Accidental ingestion of hydrazine is unlikely. If swallowed, liquid hydrazine can cause severe damage through burns to the mouth, throat and stomach.

## 3. Acute health effects

Short-term inhalation may cause coughing, breathing difficulties, tremors, ataxia and convulsions.

Skin contact with hydrazine can cause severe damage.

A single, short-term exposure to low concentrations of hydrazine, from which the affected person recovers quickly, does not normally cause delayed or lasting health damage. After inhaling relevant amounts of hydrazine, permanent respiratory disorders and increased susceptibility to lung infections have been reported. Hydrazine is allergenic and possibly carcinogenic.

## 4. Measures

### 4.1. Self-protection of first aiders

If there is a suspicion that the area the helper must enter contains hydrazine in a concentration of 1ppm or more, a self-contained breathing apparatus and a chemical protection suit must be worn. Contaminated equipment should not be used.

There is no danger from contact with patients who have only been exposed to hydrazine gas. A patient who is wet with hydrazine-containing liquid, or whose clothing is wet with it, may endanger other people through direct contact or through hydrazine gas emissions.

### 4.2. Rescue

Patients should be removed from the danger zone immediately. If they are unable to walk unaided, they should be removed from the danger zone quickly using appropriate means, taking care to protect yourself. The "A, B, C procedure" then takes absolute priority.

- A) Clear the airways** (check for blockages caused by the tongue or foreign objects)  
**B) Ventilation** (check the patient's breathing, if necessary, begin ventilation with adequate self-protection, e.g. breathing mask)  
**C) Circulation** (begin resuscitation for any person who does not respond to verbal commands and is not breathing normally)

#### 4.3. Cleaning

Patients who have only been exposed to hydrazine gas and show no signs of skin or eye irritation do not require any special cleaning measures, unlike all others.

If possible, patients should assist with their own decontamination. If liquid hydrazine has been exposed and clothing is contaminated, it must be removed and securely wrapped.

If the eyes have been exposed to hydrazine or if there is eye irritation, rinse with water or neutral saline solution for 15 minutes. Remove any contact lenses, if possible, without causing additional danger to the eye. Other important first aid measures must be continued during this time.

Rinse affected skin and hair with water for at least 15 minutes. Protect eyes while rinsing. Continue other important first aid measures during this time.

#### 4.4. Further measures

Anyone who may have been exposed to hydrazine should seek medical attention immediately.

#### 4.5. Instructions for further rules of conduct

Consult your family doctor or the emergency department of the nearest hospital if any abnormalities or symptoms occur within the next 24 hours, in particular:

- Coughing, wheezing or whistling breath
- Difficulty breathing or shortness of breath
- Increased pain or abnormalities in the affected skin areas or eyes
- Pain or tightness in the chest
- Stomach ache or nausea

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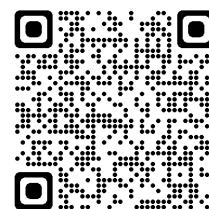
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BASF has taken every possible care to ensure that the information presented in this document is accurate and up to date but does not claim that this document comprehensively covers all possible situations in this regard. This document is intended as an additional source of information for doctors in hospitals and is designed to assist in the assessment of the condition and treatment of patients exposed to hydrazine. However, it does not replace the professional assessment of the respective situation by physicians in hospitals and must be interpreted in accordance with legal regulations and provisions as well as specific information available about the respective patients.