

Chemical Emergency Medical Guideline

Information and recommendations for first responders and patients

Chloroacetyl chloride

CAS No: 79-04-9

GHS symbols:



GHS05
Corrosive



GHS06
Acute toxicity



GHS08
Health hazard

Signal word: Danger

Hazard statements:

- H314 Causes severe skin burns and serious eye damage.
H372 Damages organs (respiratory system) through prolonged or repeated exposure.
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

Overview

- Before the first aider approaches a patient, they must ensure that there is no danger to themselves from chloroacetyl chloride.
- There is no danger from contact with patients who have only been exposed to chloroacetyl chloride gases. However, a patient who is wet with liquid chloroacetyl chloride or solvents containing chloroacetyl chloride, or whose clothing is wet with these substances, may endanger other people through direct contact or through chloroacetyl chloride gases.

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1. Information about the substance

Chloroacetyl chloride (ClCH₂COCl), CAS 79-04-9

Synonyms: Chloroacetic acid chloride, CAC

Chloroacetic chloride is a colorless to whitish liquid at room temperature with a melting point of -22°C and a boiling point of 106°C. It has a sharp, pungent odor and is decomposed in moisture to form chloroacetic acid and hydrochloric acid.

Chloroacetyl chloride is used as an intermediate in the manufacture of many chemicals such as adrenaline, diazepam, chloroacetophenone, chloroacetic acid esters and chloroacetic anhydride.

2. Expositon

2.1. Inhalation

Exposure to chloroacetyl chloride occurs mainly through inhalation or skin/eye contact. The odor of chloroacetyl chloride is insufficient as a warning. Even low concentrations can pose a hazard. Chloroacetyl chloride is heavier than air and spreads along the ground.

2.2. Skin/eye contact

Chloroacetic chloride can cause irritation and burns to the skin or eyes. Absorption through the skin is possible.

2.3. Ingestion

Ingestion of chloroacetic chloride causes burns to the mucous membranes in the throat and esophagus, but this rarely occurs in the workplace.

3. Acute health effects

In most cases, exposure to chloroacetyl chloride occurs through inhalation of the gas. Low exposure to chloroacetyl chloride gas normally causes irritation of the eyes and upper respiratory tract. However, these irritation effects may initially be so mild that the affected person does not leave the contaminated area. If chloroacetyl chloride vapors are inhaled over a longer period, severe respiratory disorders can occur, including impaired gas exchange in the lungs, pneumonia and death. Such respiratory disorders can develop up to 24 hours after inhaling chloroacetyl chloride.

Chloroacetyl chloride usually causes irritation of the nose, throat and respiratory tract after inhalation. The symptoms immediately after exposure to chloroacetyl chloride due to irritation of the upper respiratory tract may be mild (throat burning, coughing, feeling of pressure), but severe lung damage with fluid accumulation in the lungs may occur up to 24 hours after exposure. Chloroacetyl chloride can lead to respiratory and cardiovascular failure.

Chloroacetyl chloride can cause skin irritation or redness. High gas concentrations can cause redness and tearing of the eyes. Eye contact with liquid chloroacetyl chloride can result in clouding of the surface of the eye and later in permanent damage.

Single exposure or single inhalation of chloroacetyl chloride, from which the affected person recovers quickly, does not normally cause delayed or lasting health effects.

Some individuals who have inhaled a large amount of chloroacetyl chloride have developed permanent respiratory problems and were subsequently more susceptible to infectious lung diseases.

4. Measures

4.1. Self-protection of first aiders

If there is suspicion that the area the helper must enter contains chlorine acetate chloride, 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 chloracetic chloride gases. A patient who is wet themselves or whose clothing is wet with liquid or chloracetic chloride-containing solvents may endanger other people through direct contact or through chloracetic chloride vapors.

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 themselves. The "A, B, C procedure" has 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 gaseous chloroacetyl chloride and show no signs of skin or eye irritation do not require any special cleaning measures, unlike all others.

If possible, patients should assist in their own decontamination. If liquid chlorinated vinyl chloride or solvents containing chlorinated vinyl chloride have contaminated clothing, this must be removed and securely wrapped.

Rinse affected skin and hair with water for at least 15 minutes. Protect the eyes during rinsing. Other important emergency measures should be continued during this time.

If the eyes have been exposed to chloroacetyl chloride or if there is eye irritation, rinse with water or neutral saline solution for 15 minutes. Remove any contact lenses, if possible, without causing further injury to the eye. Continue other important first aid measures during this time.

4.4. Further measures

Anyone who may have been exposed to chloroacetyl chloride 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
- Breathing difficulties or shortness of breath
- Increased pain or abnormalities in the affected skin areas or eyes
- Pain or tightness in the chest

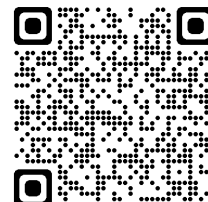
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BASF has taken every possible care to ensure that the information presented in this document is accurate and up to date but does not claim that this document comprehensively covers all possible situations in this regard. This document is intended as 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 chloroacetyl chloride. 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.