
Information and recommendations for first responders

- Patients whose clothing or skin is contaminated with liquid acrylic acid can cause secondary contamination of rescue and medical personnel by direct contact or through evaporation of acrylic acid. Patients exposed only to acrylic acid vapor do not pose a significant risk of secondary contamination.
 - Acrylic acid is rapidly corrosive to all tissues. Eye contact may cause severe burns and loss of vision. Contact with the skin may cause severe burns which may be delayed in onset. Acrylic acid vapor is irritating to the skin, eyes, nose, throat and respiratory tract, causing irritation, coughing, chest pain and dyspnea. Swelling of the throat and accumulation of fluid in the lungs (shortness of breath, cyanosis, expectoration, cough) may occur.
 - There is no antidote to be administered to counteract the effects of acrylic acid. Treatment consists of supportive measures.
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1. Substance information

Acrylic acid (C₃H₄O₂), CAS 79-10-7

Synonyms: propene acid.

At room temperature acrylic acid is a colorless liquid with a distinct acrid odor. Acrylic acid is used as the monomer in the manufacture of acrylic resins, especially acrylates. It is also used in the polymeric emulsions as coatings for leather; in paints, polishes, and adhesives; and in general finishes and binders.

2. Routes of exposure

Inhalation

Exposures may occur by inhalation. Acrylic acid's odor and upper respiratory tract irritant properties generally provide adequate warning of hazardous concentrations.

Skin/eye contact

Most exposures occur by direct contact of the skin and the eyes with liquid acrylic acid. Contact with the skin and the eyes causes severe burns which may be delayed in onset.

Ingestion

Ingestion causes severe corrosive injury of the mucous membranes of the throat and esophagus.

3. Acute health effects

Respiratory

Acrylic acid exposure usually causes mucous membrane irritation, sore throat, and coughing. Rapid development of respiratory distress with chest pain, dyspnea, swelling of the throat and accumulation of fluid in the lungs (shortness of breath, cyanosis, expectoration, cough) may occur. Lung injury may progress over several hours. Acrylic acid poisoning may cause respiratory failure. Systemic absorption in humans is rare since both the liquid and vapor are irritating or corrosive.

Skin

Deep burns of the skin and mucous membranes are caused by direct contact with liquid acrylic acid; disfiguring scars may result. Contact with less concentrated acrylic acid vapor or mist can cause burning pain, redness, inflammation, and blisters.

Eye

Eye contact with liquid acrylic acid causes severe burns and loss of vision. Contact with less concentrated vapor or mist cause burning discomfort, spasmodic blinking or involuntary closing of the eyelids, redness, and tearing.

4. Actions

Rescuer self-protection

If the zone which has to be entered by the rescuer is suspected of containing acrylic acid, pressure-demand, self-contained breathing apparatus and chemical-protective clothing shall be worn; do not use equipment that is contaminated itself.

Patients exposed only to acrylic acid vapor do not pose a significant risk of secondary contamination. Patients whose clothing or skin is contaminated with liquid acrylic acid or acrylic acid mist may secondarily contaminate rescue and medical personnel by direct contact or through evaporation of acrylic acid.

Patient recovery

Patients should be removed from the contaminated zone immediately. Patients who are unable to walk may be removed on backboards or stretchers; if these are not available, carefully remove/transport patients with appropriate action to a safe zone, taking into account your self-protection.

Immediate priorities must follow the "A, B, C's" of resuscitation:

- A) Airway** (make sure the airway is not blocked by the tongue or a foreign body)
- B) Breathing** (check to see if the patient is breathing, provide ventilations with use of appropriate barrier devices, e.g. with a pocket face mask, if breathing is absent)
- C) Circulation** (start CPR in any unresponsive person with absent or abnormal breathing)

Decontamination

Patients exposed only to acrylic acid vapor or mist who have no evidence of skin or eye irritation do not need decontamination. All others require decontamination.

Patients who are able and cooperative may assist with their own decontamination. If the exposure involved liquid acrylic acid and if clothing is contaminated, **remove immediately** and double-bag the clothing.

Irrigate exposed or irritated eyes with plain water or saline for at least 20 minutes. Remove contact lenses if present and easily removable without additional trauma to the eye. Continue other basic care during flushing.

Flush exposed skin and hair with plain water for at least 15 minutes. Protect eyes during flushing of skin and hair. Continue other basic care during flushing.

Further actions

Each potentially exposed person should seek immediate medical advice and treatment.

<p>In this document BASF has made a diligent effort to ensure the accuracy and currency of the information presented but makes no claim that the document comprehensively addresses all possible situations related to this topic. This document is intended as an additional resource for first responders in assessing the condition and managing the treatment of patients exposed to acrylic acid. It is not, however, a substitute for the judgement of a first responder and must be interpreted in the light of specific information regarding the patient available to such a first responder and in conjunction with other sources of authority.</p>

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