

Chemical Emergency Medical Guideline

Information and recommendations for first responders and patients

Ethylbenzene

CAS No.: 100-41-4

GHS symbols:



GHS06
Acute toxicity



GHS08
Health hazard

Signal word: Danger

Hazard statements:

- | | |
|------|--|
| H304 | May be fatal if swallowed and enters airways. |
| H332 | Harmful if inhaled. |
| H373 | May cause damage to organs (hearing) through prolonged or repeated exposure. |

Overview

- There is no danger from contact with patients who have only been exposed to ethylbenzene vapors. A patient who is wet with liquid ethylbenzene (boiling point 136°C) or whose clothing is wet with it may endanger other people through direct contact or through evaporating ethylbenzene.
- Ethylbenzene irritates the skin, eyes and respiratory tract and can cause headaches, nausea, dizziness, weakness, confusion and loss of consciousness.
- There is no known specific antidote. Treatment depends on the extent of exposure and the symptoms.

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1. Information about the substance

Ethylbenzene (C₆H₅-C₂H₅), CAS 100-41-4

Synonyms: Phenylethane

Ethylbenzene is a clear to slightly yellowish liquid at room temperature (boiling point 136°C). The vapor and liquid are flammable. Ethylbenzene has a sweetish odor. The odor threshold is 2.3ppm. It is slightly soluble in water but highly soluble in alcohol and ether. Combustion produces carbon monoxide.

Ethylbenzene is an organic solvent with low vapor pressure and is used in the manufacture of styrene and as a chemical intermediate in the plastics and rubber industry. It is found in various refinery products, such as petrol.

2. Exposition

2.1. Inhalation

Exposure to ethylbenzene occurs mainly through inhalation. Ethylbenzene is rapidly absorbed through the lungs.

2.2. Skin/eye contact

Ethylbenzene is absorbed through the skin and can lead to general symptoms of poisoning.

2.3. Ingestion

Ethylbenzene is absorbed through the gastrointestinal tract. However, ingestion is rare in the workplace. If swallowed, it can enter the respiratory tract.

3. Acute health effects

In most cases, ethylbenzene poses a hazard through inhalation of vapors. Ethylbenzene can cause general symptoms of poisoning such as headaches, nausea, dizziness, weakness, confusion and loss of consciousness. Exposure to high concentrations can cause signs of upper respiratory tract irritation, followed by oxygen deficiency, muscle weakness, coma and respiratory arrest. Liver damage may occur.

Ethylbenzene irritates the upper respiratory tract.

Local exposure to liquid ethylbenzene may cause skin irritation.

Local exposure to liquid ethylbenzene or high vapor concentrations may cause eye irritation with redness, burning, tearing or spasmodic eyelid closure.

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

4. Measures

4.1. Self-protection of first aiders

If there is a suspicion that the area the helper must enter contains ethylbenzene, 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 ethylbenzene vapors. A patient who is wet with liquid ethylbenzene or whose clothing is wet with liquid ethylbenzene may endanger other people through direct contact or through ethylbenzene 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 ethylbenzene vapors 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 cleaning. If liquid ethylbenzene has been exposed and clothing is contaminated, it must be removed and securely wrapped.

If the eyes have been exposed to ethylbenzene or if there is eye irritation, they must be rinsed with water or a neutral saline solution for 15 minutes. Contact lenses must be removed, if possible, without additional risk to the eye. Other important emergency 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 emergency measures in the meantime.

Avoid vomiting; this may cause irritation of the esophagus and penetration into the lungs.

4.4. Further measures

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

Patients who are conscious and able to swallow should, if possible, be given 50 g of activated charcoal (or 1 g/kg body weight for children weighing up to 50 kg). Activated charcoal may be administered repeatedly at any time to complete decontamination if there are signs or suspicion of ongoing absorption. For multiple doses, start with the single-dose amount mentioned above, followed by the same dose every four hours or half the dose every two hours. Avoid inhaling the product.

Avoid vomiting; it can cause irritation of the esophagus and penetration into the lungs.

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
- Headache, nausea, dizziness

5. References

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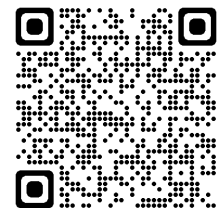
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