



## FACT SHEET

### Facts About Lewisite

#### What lewisite is

- Lewisite is a type of chemical warfare agent. This kind of agent is called a vesicant or blistering agent, because it causes blistering of the skin and mucous membranes on contact.
- Lewisite is an oily, colorless liquid in its pure form and can appear amber to black in its impure form.
- Lewisite has an odor like geraniums.
- Lewisite contains arsenic, a poisonous element.
- Lewisite is also known by its military designation, "L."

#### Where lewisite is found and how it is used

- Lewisite was produced in 1918 to be used in World War I, but its production was too late for it to be used in the war.
- Lewisite has been used only as a chemical warfare agent. It has no medical or other practical use.
- Lewisite is not found naturally in the environment.

#### How people can be exposed to lewisite

- People's risk for exposure depends on how close they are to the place where the lewisite was released.
- If lewisite gas is released into the air, people may be exposed through skin contact or eye contact. They may also be exposed by breathing air that contains lewisite.
- If lewisite liquid is released into water, people may be exposed by drinking water that contains lewisite or by getting the water on their bodies.
- If lewisite liquid comes into contact with food, people may be exposed by eating the contaminated food.
- People can be exposed by coming into direct contact with liquid lewisite.
- Lewisite vapor is heavier than air, so it will settle in low-lying areas.
- Lewisite remains a liquid under a wide range of environmental conditions, from below freezing to very hot temperatures. Therefore, it could last for a long time in the environment.

#### How lewisite works

- Adverse health effects caused by lewisite depend on the amount people are exposed to, the route of exposure, and the length of time that people are exposed.
- Lewisite is a powerful irritant and blistering agent that immediately damages the skin, eyes, and respiratory (breathing) tract.
- Because it contains arsenic, lewisite has some effects that are similar to arsenic poisoning, including stomach ailments and low blood pressure.

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### Immediate signs and symptoms of lewisite exposure

- Most information on the health effects of lewisite is based on animal studies.
- Signs and symptoms occur immediately following a lewisite exposure. Lewisite can have the following effects on specific parts of the body:
  - *Skin*: pain and irritation within seconds to minutes, redness within 15 to 30 minutes followed by blister formation within several hours. The blister begins as a small blister in the middle of the red areas and then expands to cover the entire reddened area of skin. The lesions (sores) from lewisite heal much faster than lesions caused by the other blistering agents, sulfur mustard and nitrogen mustards, and the discoloring of the skin that occurs later is much less noticeable.
  - *Eyes*: irritation, pain, swelling, and tearing may occur on contact.
  - *Respiratory tract*: runny nose, sneezing, hoarseness, bloody nose, sinus pain, shortness of breath, and cough
  - *Digestive tract*: diarrhea, nausea, and vomiting.
  - *Cardiovascular*: "Lewisite shock" or low blood pressure may occur
- Showing these signs and symptoms does not necessarily mean that a person has been exposed to lewisite.

### What the long-term health effects may be

- Extensive skin burning, as seen with sulfur mustard, is less likely.
- Extensive breathing in of the vapors may cause chronic respiratory disease.
- Extensive eye exposure may cause permanent blindness.
- Unlike sulfur mustard, lewisite is not known to suppress the immune system.

### How people can protect themselves and what they should do if they are exposed to lewisite

- Leave the area where the lewisite was released and get to fresh air. Quickly moving to an area where fresh air is available is highly effective in reducing the possibility of death from exposure to lewisite.
  - If the lewisite release was outdoors, move away from the area where the lewisite was released. Go to the highest ground possible, because lewisite is heavier than air and will sink to low-lying areas.
  - If the lewisite release was indoors, get out of the building.
- If you think you may have been exposed, remove your clothing, rapidly wash your entire body with soap and water, and get medical care as quickly as possible.
- *Removing and disposing of clothing*:
  - Quickly take off clothing that has liquid lewisite on it. Any clothing that has to be pulled over the head should be cut off the body instead of pulled over the head. If possible, seal the clothing in a plastic bag. Then seal the first plastic bag in a second plastic bag. Removing and sealing the clothing in this way will help protect you and other people from any chemicals that might be on your clothes.
  - If you placed your clothes in plastic bags, inform either the local or state health department or emergency personnel upon their arrival. Do not handle the plastic bags.
  - If you are helping other people remove their clothing, try to avoid touching any contaminated areas, and remove the clothing as quickly as possible.
- *Washing the body*:
  - As quickly as possible, wash any liquid lewisite from your skin with large amounts of soap and water. Washing with soap and water will help protect people from any chemicals on their bodies.

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- If your eyes are burning or your vision is blurred, rinse your eyes with plain water for 10 to 15 minutes. If you wear contacts, remove them and place them in the bags with the contaminated clothing. Do not put the contacts back in your eyes. If you wear eyeglasses, wash them with soap and water. You can put the eyeglasses back on after you wash them.
- If you have ingested (swallowed) lewisite, do not induce vomiting or drink fluids.
- **Seek medical attention right away. Dial 911 and explain what has happened.**

## How lewisite exposure is treated

Treatment consists of removing lewisite from the body as soon as possible and providing supportive medical care in a hospital setting. An antidote for lewisite is available and is most useful if given as soon as possible after exposure.

## How people can get more information about lewisite

People can contact one of the following:

- Regional poison control center (1-800-222-1222)
- Centers for Disease Control and Prevention
  - Public Response Hotline (CDC)
    - (800) 232-4636 (English and Spanish)
    - TTY (888) 232-6358
  - [Emergency Preparedness and Response Web site \(http://www.bt.cdc.gov/\)](http://www.bt.cdc.gov/)
  - E-mail inquiries: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)
  - Mail inquiries:  
Public Inquiry c/o BPRP  
Bioterrorism Preparedness and Response Planning  
Centers for Disease Control and Prevention  
Mailstop C-18  
1600 Clifton Road  
Atlanta, GA 30333
- Agency for Toxic Substances and Disease Registry (ATSDR) (1-888-422-8737)
  - E-mail inquiries: [atsdric@cdc.gov](mailto:atsdric@cdc.gov)
  - Mail inquiries:  
Agency for Toxic Substances and Disease Registry  
Division of Toxicology  
1600 Clifton Road NE, Mailstop E-29  
Atlanta, GA 30333

*This fact sheet is based on CDC's best current information. It may be updated as new information becomes available.*

*Last reviewed on 03/23/05.*

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

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