



Chemical Warfare Agents

Chemical warfare agents are poisonous gases, liquids, or solids that have toxic effects on people, animals and plants. Exposure to chemical warfare agents can cause serious injuries and death. Severity of injury depends on the type and amount of the chemical warfare agent used, and the duration of exposure.

The primary chemical warfare agents are sulfur mustard (HD) and the nerve agents GB (Sarin), and VX. In the case of intentional exposure, such as a chemical terrorism event, people would most likely be exposed to these chemicals by breathing the vapors released during the event. If an event is very large, people's skin might be exposed to the agents as microscopic droplets (aerosol).

What is sulfur mustard?

- Sulfur mustard (mustard gas) is called a "blister" agent. It smells like garlic or mustard and ranges in color from yellow to brown. Sulfur mustard is an oily liquid at temperatures above 57 degrees (F). Sulfur mustard is solid at temperatures below 57 degrees (F).

What are the health effects of sulfur mustard?

- Exposure to sulfur mustard can cause skin to become red and irritated. With sufficient exposure the skin will blister.
- Sulfur mustard can damage your eyes. Effects on the eye can include irritation, redness, and swelling of the lids.
- Throat irritation, sinus pain, and cough can develop after breathing in sulfur mustard. Larger exposures can damage the lungs.

When will symptoms of sulfur mustard exposure appear?

- If you are exposed to sulfur mustard, there can be a delay before you feel symptoms. Symptoms normally appear within 4 to 8 hours. However, after a relatively small exposure symptoms can take up to 24 hours to develop.

What medical treatment will I receive for sulfur mustard exposure?

- Medical staff can treat you with soothing lotions, eye drops, and pain medication. If infections develop, for example in damaged lungs, you can be provided antibiotics.

What are GB and VX?

- GB and VX are similar to the insecticides malathion and parathion. They are odorless and colorless and are stored as liquids. GB is similar in consistency to water. VX has the consistency of lightweight motor oil.

What are the effects of exposure to GB and VX vapor?

- Exposure to a small amount of vapor can result in pupils becoming smaller than normal, dim or blurred vision, eye pain, a runny nose, and shortness of breath. Symptoms can be seen alone or in combination.
- Moderate exposure can cause muscle weakness, nausea, vomiting, and diarrhea.
- Exposure to large amounts of vapor can cause interruption of breathing, muscle weakness, loss of consciousness, convulsions and death.

How long will it take symptoms to appear after exposure to GB or VX vapor?

- Effects usually appear seconds to minutes after breathing nerve agent vapor.
- With exposure to very small amounts of vapor, smaller than normal pupils may be the only effect and may take an hour to appear.



P.O. Box 47890
Olympia, Washington
98504-7890

www.doh.wa.gov

1-800-525-0127

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