



## MUSTARD AGENTS

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| <b>Agent information:</b>      | Chemical warfare agents are toxic chemicals that can cause harm or death to people. These agents include sulfur mustard (H, HD, HT), lewisite, nitrogen mustard, mustard lewisite, and phosgene-oxime. Sulfur mustards are yellow to brown oily liquids with a slight garlic or mustard odor. Although volatility is low, vapors can reach hazardous levels during warm weather. Mustard agents are toxicologically part of a group of compounds known as vesicants or corrosives.   |
| <b>Route of exposure:</b>      | Inhalation and dermal absorption are primary.  |
| <b>Signs and symptoms:</b>     | <p>Signs and symptoms vary depending on the route of exposure and level of exposure.</p> <p><b>Signs:</b> skin erythema and blistering, watery, swollen eyes; upper airways sloughing with pulmonary edema; metabolic failure; and neutropenia and sepsis, especially for sulfur mustard (late in exposure).</p> <p><b>Symptoms:</b> burning, itching, or red skin; mucosal irritation (prominent tearing, and burning and redness of eyes); shortness of breath; nausea; and vomiting. Sulfur mustards are absorbed by the skin, causing erythema and blisters. Ocular exposure may cause incapacitating damage to the cornea and conjunctiva. Inhalation damages the respiratory tract epithelium and may cause death. Onset for lewisite is minutes; sulfur mustard is hours to days.</p> |
| <b>Protective measures</b>     | Utilize appropriate Level Personal Protective Equipment (PPE) as identified by the Environmental Protection Agency and Hazmat protocols. People whose skin or clothing is contaminated with sulfur mustard can contaminate rescuers by direct contact, or through off-gassing vapor.   |
| <b>Prophylaxis:</b>            | N/A.   |
| <b>Treatment:</b>              | There is no antidote for mustard agents. The most important factor is to quickly remove mustard agent from the body. Treatment consists of supportive medical care.  |
| <b>Reporting:</b>              | Any suspect cases should be reported immediately to the Division of Public Health: 1-888-295-5156 (24/7 coverage).   |
| <b>Additional information:</b> | Visit the Centers for Disease Prevention and Control website: <a href="https://emergency.cdc.gov/">https://emergency.cdc.gov/</a> .  |

**Emergency Medical Services and Preparedness Section**  
**24/7 Emergency Contact Number: 1-888-295-5156**  
**Contact Number: 302-223-2999**