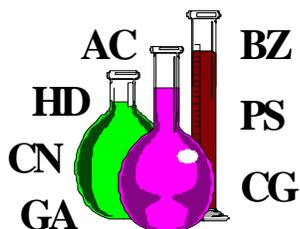


*U.S. Army Center for Health Promotion and Preventive Medicine*



*General Facts About Blister Agent Nitrogen Mustard  
(HN-1)*

218-34-1096

**General**

HN-1 was the first compound of the HN series developed in the late 1920s and early 1930s. HN-1 was designed as a pharmaceutical (to remove warts) and became a military agent; HN-2 was designed as a military agent and became a pharmaceutical; HN-3 was designed as a military agent and is the only one of these agents that remains anywhere as a military agent. These agents are more immediately toxic than the sulfur mustards.

**Synonyms**

Ethylbis(beta-chloroethyl)amine;  
Ethylbis(2-chloroethyl)amine;  
2-Chloro-N-(2-chloroethyl)-N-ethylethanamine;  
Ethyl-S;  
HN1;  
TL329;  
TL1149.

**Description**

HN-1 is a vesicant and an alkylating agent, producing cytotoxic action on the hemopoietic (blood-forming) tissues. It is oily, colorless to pale yellow with a faint, fishy, or musty odor.

**Overexposure Effects**

The vapors are irritating to the eyes and nasal membranes even in low concentration. HN-1 is a vesicant (blister agent) and alkylating agent producing cytotoxic action on the hematopoietic (blood-forming) tissues. HN-1 is not naturally detoxified by the body; therefore, repeated exposure produces a cumulative effect.

**Emergency and First Aid  
Procedures**

Inhalation: remove from source immediately; give artificial respiration if breathing has stopped; administer oxygen if breathing is difficult; seek medical attention immediately.

Eye Contact: flush eyes immediately with water for 10-15 minutes, pulling eyelids apart with fingers, and pouring water into eyes; do not cover eyes with bandages; protect eyes with dark or opaque goggles after flushing eyes; seek medical attention immediately.

Skin Contact: don respiratory mask and gloves; remove victim from source immediately and remove contaminated clothing; decontaminate the skin immediately by flushing with a 5 percent solution of liquid household bleach; wash off with soap and water after 3-4 minutes to remove decon agent and protect against erythema; seek medical attention immediately; to prevent systemic toxicity, decontamination should be done as late as 2 or 3 hours after exposure even if it increases the severity of the local reaction; further cleans with soap and water.

Ingestion: do not induce vomiting; give victims milk to drink; seek medical attention immediately.

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