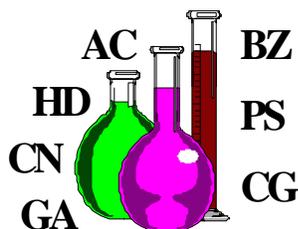


*U.S. Army Center for Health Promotion and Preventive Medicine*



*General Facts About Blister Agent Nitrogen Mustard  
(HN-2)*

218-35-1096

*General*

HN-2, the second of a series of nitrogen mustard compounds developed in the late 1920s and early 1930s, was designed as a military agent which became a pharmaceutical substance called Mustine. The chemical intermediate it produces is used as an antineoplastic drug. These agents are more immediately toxic than the sulfur mustards.

*Synonyms*

2(2'-dichloroethyl)methylamine;  
Bis(beta-chloroethyl)methylamine;  
N, N-bis(2-chloroethyl)methylamine;  
Beta, beta'-dichlorodiethyl-n-methylamine;  
Di(2-chloroethyl)methylamine;  
Methylbis (beta-chloroethyl)amine;  
N-methyl-bis-chloroethylamine;  
N-methyl-bis(beta-chloroethyl)amine;  
N-methyl-bis(2-chloroethyl)amine;  
N-methyl-2, 2'-dichlorodiethylamine;  
Methyldi (2-chloroethyl)amine;  
2-Chloro-n-(2-chloroethyl)-n-methylethanamine;  
Caryolsin;  
Chloromethine;  
Dichlor Amine;  
Embichin;  
ENT-25294;  
MBA;  
Mechlorethamine;  
Chloramine, Chloramine (the nitrogen mustard);  
N-methyl lost;  
Mustine;  
HN2  
NSC762;  
TL146.

## ***Description***

HN-2 is highly unstable and is no longer seriously considered as a chemical agent. It is rated as somewhat more toxic than HN-1. HN-2 is a pale amber to yellow oily liquid with a fruity odor in high concentrations; smells like soft soap with a fishy smell in low concentrations.

## ***Overexposure Effects***

HN-2 is highly irritating to the eyes and throat; in high concentrations it can cause blindness. Absorbed into the bloodstream it will seriously interfere with the functioning of hemoglobin and will eventually damage the endocrine system. HN-2 is a vesicant (blister agent) and alkylating agent producing cytotoxic action on the hematopoietic (blood-forming) tissues which are especially sensitive. HN-2 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, decontaminate as late as 2 or 3 hours after exposure even if it increases the severity of the local reaction; further clean with soap and water.

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