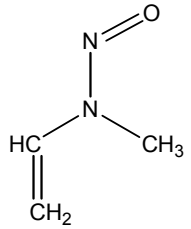
N-NITROSOMETHYLVINYLAMINE
CAS No. 4549-40-0



First Listed in the *Second Annual Report on Carcinogens*

CARCINOGENICITY

N-Nitrosomethylvinylamine *is reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (IARC 1978, 1982). When administered in the drinking water, *N*-nitrosomethylvinylamine induced papillomas and squamous cell carcinomas of the esophagus, carcinomas of the tongue, and carcinomas of the pharynx in rats. When administered by inhalation, *N*-nitrosomethylvinylamine induced carcinomas and cholesteatomas of the nasal cavity, squamous cell carcinomas, and esophageal papillomas in rats (IARC 1978).

No adequate human studies of the relationship between exposure to *N*-nitrosomethylvinylamine and human cancer have been reported (IARC 1978).

PROPERTIES

N-Nitrosomethylvinylamine is a pale yellow liquid that is very volatile. It is sensitive to light, especially ultraviolet light. It is soluble in water, organic solvents, and lipids, and is relatively unstable in aqueous solutions. When heated to decomposition, it emits toxic fumes of nitrogen oxides (IARC 1978, HSDB 2001, NTP 2001).

USE

Other than its use as a research chemical, no data on the use of *N*-nitrosomethylvinylamine were available (IARC 1978, HSDB 2001, NTP 2001).

PRODUCTION

There is no evidence that *N*-nitrosomethylvinylamine has ever been produced commercially (IARC 1978, HSDB 2001). Synthetic production of nitrosamines is limited to small quantities, produced primarily as research chemicals (HEEP 1980). No chemical suppliers were listed for *N*-nitrosomethylvinylamine (Chem Sources 2001).

EXPOSURE

Exposure to *N*-nitrosomethylvinylamine is primarily limited to the researchers using the compound in scientific research. Exposure may also occur through ingestion of food; *N*-nitroso compounds have been identified in a variety of vegetables, fruits, cheeses, meats, and alcoholic beverages (CHIP 1978). *N*-Nitrosomethylvinylamine has been found in apple brandy (IARC 1978).

REGULATIONS

EPA regulates *N*-nitrosomethylvinylamine under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and Superfund Amendments and Reauthorization Act (SARA). EPA has established a final reportable quantity (RQ) of 10 lb based on new information. *N*-Nitrosomethylvinylamine is subject to reporting and record-keeping requirements under RCRA and SARA.

OSHA regulates *N*-nitrosomethylvinylamine under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table 133.

REFERENCES

Chem Sources. Chemical Sources International, Inc. http://www.chemsources.com, 2001.

CHIP. Chemical Hazard Information Profile. *N*-Nitroso Compounds. Office of Pesticide Programs and Toxic Substances, U.S. EPA, Washington, DC, 1978a.

HEEP. Health and Environmental Effects Profile. Nitrosamines, No. 137. Washington, DC: Office of Solid Waste and Emergency Response, U.S. EPA, 1980.

HSDB. Hazardous Substances Data Bank. Online database produced by the National Library of Medicine. *N*-Nitrosomethylvinylamine. Profile last updated August 9, 2001. Last review date, January 31, 1998.

IARC. International Agency for Research on Cancer. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Some *N*-Nitroso Compounds. Vol. 17. 365 pp. Lyon, France: IARC, 1978.

IARC. International Agency for Research on Cancer. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Chemicals, Industrial Processes and Industries Associated with Cancer in Humans. Supplement 4. 292 pp. Lyon, France: IARC, 1982.

NTP. National Toxicology Program. NTP Chemical Repository. *N*-Nitrosomethylvinylamine. Last updated August 13, 2001. (http://ntp-server.niehs.nih.gov and search 4549-40-0).