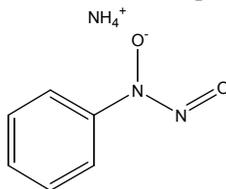


CUPFERRON
CAS No. 135-20-6

First Listed in the *Third Annual Report on Carcinogens*



CARCINOGENICITY

Cupferron is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (NCI 1978). When administered in the diet, cupferron induced hemangiosarcomas, hepatocellular carcinomas, and squamous cell carcinomas of the forestomach in rats of both sexes, and carcinomas of the auditory sebaceous gland in female rats. When administered in the diet, cupferron induced hemangiosarcomas in male mice, and hepatocellular carcinomas, carcinomas of the auditory sebaceous gland, hemangiosarcomas and hemangiomas, and adenomas of the harderian gland in female mice.

No data were available to evaluate the carcinogenicity of cupferron in humans.

PROPERTIES

Cupferron occurs as light yellow to creamy-white crystals or a brown crystalline solid and is hygroscopic. It is very soluble in water, alcohol, and ether (NTP 2001).

USE

Cupferron is an analytical reagent that is used to separate and precipitate metals such as copper, iron, vanadium, and thorium. It is used to separate tin from zinc and copper and iron from other metals. In analytical laboratories, cupferron is a reagent used for quantitative determination of vanadates and titanium and colorimetric determination of aluminum (NCI 1978, HSDB 2001).

PRODUCTION

The USITC has listed one domestic producer of cupferron (*N*-nitrosophenylhydroxylamine, ethanolamine salt) since 1987, with an undisclosed production volume (USITC 1995). The 1979 TSCA Inventory identified two companies producing 55,000 lb of cupferron in 1977, with some site limitations. Imports were not reported. The CBI Aggregate was less than 1 million lb (TSCA 1979). Data on exports are not available. Twenty-one U.S. chemical suppliers of cupferron were identified in 2001 (Chem Sources 2001).

EXPOSURE

The primary routes of potential human exposure to cupferron are ingestion and inhalation of the dust from the dry salt. Dermal contact is a secondary route of potential exposure. The risk of possible exposure seems to be greatest for those engaged in analytical or research studies involving use of the chemical. Workers may be potentially exposed to the compound during manufacturing processes. The National Occupational Exposure Survey (1981-1983) indicated that 136 workers, including 39 women, were potentially exposed to cupferron (NIOSH 1984). This estimate was based only on observations of the actual use of the compound. The National Occupational Hazard Survey, conducted by NIOSH from 1972 to 1974, estimated that 4,000 workers were possibly exposed to cupferron in the workplace (NIOSH 1976). EPA's Toxic Chemical Release Inventory (TRI) listed one industrial facility that produced, processed, or otherwise used cupferron in 1999 (TRI99 2001). That facility reported no on- or off-site release of the chemical. Since 1988, the greatest release occurred in 1989 and 1991 with reported releases of 1,500 and 1,200 lb of total release (most being air emissions), respectively. The last year in which releases were reported was 1994 with 11 lbs of total release from two facilities being reported (TRI99 2001).

REGULATIONS

EPA regulates cupferron as a toxic chemical under the Superfund Amendments and Reauthorization Act (SARA) and subjects it to general threshold limits. Cupferron is subject to reporting and record-keeping rules under SARA.

OSHA regulates cupferron under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table 51.

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