

4. PRODUCTION, IMPORT, USE, AND DISPOSAL

4.1 PRODUCTION

N-Nitrosodi-n-propylamine is not produced for commercial use in the United States (HSDB 1988). The public portion of the EPA TSCA Production File indicates that The Ames Laboratories in Milford, CT prepared <1000 pounds during 1977, and that Eastman-Kodak in Rochester, NY prepared none during 1977, although it had the capability to do so and had prepared small research quantities in the past (EPA 1977). N-nitrosodi-n-propylamine may be produced as an impurity in the pesticides trifluralin, isopropalin, and oryzalin (Cohen et al. 1978, Wotherspoon and Hindle 1988). N-Nitrosodi-n-propylamine can be prepared by the reaction of nitrous acid with di-n-propylamine (HSDB 1988).

4.2 IMPORT

No U.S. import data were found for N-nitrosodi-n-propylamine.

4.3 USE

N-Nitrosodi-n-propylamine is prepared in laboratory-scale quantities solely for use as a research chemical (HSDB 1988).

4.4 DISPOSAL

Landfill disposal procedures should be confirmed by responsible environmental engineers and regulatory officials (OHM-TADS 1988). N-nitrosodi-n-propylamine may be destroyed by high temperature incineration in an incinerator equipped with an NO_x scrubber (OHM-TADS 1988). Chemical treatment methods may also be used to destroy N-nitrosodi-n-propylamine. These methods involve (a) denitrosation by reaction with 3% hydrobromic acid in glacial acetic acid, (b) oxidation by reaction with potassium permanganate-sulfuric acid, or (c) extraction of the nitrosamine from the waste using dichloromethane and subsequent reaction with triethyloxonium tetrafluoroborate (TOEF) (Castegnaro et al. 1982).

4.5 ADEQUACY OF THE DATA BASE

Section 104 (i) (5) of CERCLA, directs the Administrator of ATSDR (in consultation with the Administrator of EPA and agencies and programs of the Public Health Service) to assess whether adequate information on the health effects of N-nitrosodi-n-propylamine is available. Where adequate information is not available, ATSDR, in cooperation with the National Toxicology Program (NTP), is required to assure the initiation of a program of research designed to determine these health effects (and techniques for developing methods to determine such health effects). The following discussion highlights the availability, or absence, of exposure and toxicity information applicable to human health assessment. A statement of the

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relevance of identified data needs is also included. In a separate effort, ATSDR, in collaboration with NTP and EPA, will prioritize data needs across chemicals that have been profiled.

4.5.1 Data Needs

Production, Use, Release, and Disposal. Uses, methods of synthesis, and methods of disposal are described in the literature and there does not appear to be a need for further information in these topics. Lack of information pertaining to the import of this compound is to be expected since this compound has no commercial significance and it is doubtful that research quantities would be imported rather than prepared by laboratories in the United States. Data regarding the amount of N-nitrosodi-n-propylamine released to air, water, and soil are needed in order to establish potential sources of exposure and levels of exposure from environmental media. In particular, releases from hazardous waste landfills and industries in which this compound is inadvertently formed should be established in order to determine whether people living in the vicinity of these sites are exposed to elevated levels of this compound. According to the Emergency Planning and Community Right to Know Act of 1986 (EPCRTKA), (§313), (Pub. L. 99-499, Title III, §313), industries are required to submit release information to the EPA. The Toxic Release Inventory (TRI), which contains release information for 1987, became available in May of 1989. This database will be updated yearly and should provide a more reliable estimate of industrial production and emission.

Information on the production and environmental sources of di-n-propylamine, tri-n-propylamine and the N-oxide of tri-n-propylamine is needed due to the possible presence of N-nitrosodi-n-propylamine as a contaminant, and the possibility of inadvertent formation of N-nitrosodi-n-propylamine from reaction to these compounds with ubiquitous nitrate. There is also a need to investigate whether N-nitrosodi-n-propylamine occurs in waste sites where these precursor compounds are disposed due to occurrences as an impurity or in situ formation.