

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

March 22, 2004

To: N,N'-dimethylethyleneurea file (CAS # 80-73-9)

From: Gary Butterfield

Subject: Screening level for N,N'-dimethylethyleneurea

N,N'-dimethylethyleneurea is also commonly known as DMEU, 1,3-dimethyl-2-imidazolidinone, or DMI among its many other synonyms. This material is a liquid. The liquid has a specific gravity of 1.044 g/ml. It has molecular weight of 114.14 g/mol. The melting point is 8 degrees Celsius. The boiling point is 225 degrees Celsius.

The following references or databases were searched to identify data to determine the screening level: U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS), National Institute for Occupational Safety and Health (NIOSH) Registry for Toxic Effects of Chemical Substances (RTECS), American Conference of Governmental and Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), Michigan Department of Environmental Quality (DEQ) library, International Agency for Research on Cancer (IARC) Monographs, Chemical Abstract Service (CAS) Online (1968 - May 2003), National Library of Medicine (NLM) - Toxline, and National Toxicology Program (NTP) Status Report.

The CAS and NLM on-line literature searches were conducted on May 5, 2003. Dow provided summaries of several dermal exposure toxicity studies, including acute, 28-day, 90-day, and two teratology studies. However, dermal exposure studies are not useable in the AQD screening level equations from R232.

The only toxicity information that could possibly be used to calculate a screening level is the rat acute oral LD50 study reported by Myers and Tyler (1992) as reported in RTECS. However, the journal article was not available, and could not be obtained from library loan.

Due to a lack of available toxicity data the screening level is being set at default value of 0.1 ug/m³ with annual averaging, under R232(1)(i).

References:

Myers and Tyler. 1992. Acute toxicologic evaluation of 1,3-dimethylethyleneurea. J Am. College Toxicol (part B) 1(3):191-2.