MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

February 4, 2002

TO: 2-ethylaminoethanol file (CAS # 110-73-6)

FROM: Gary Butterfield, Toxics Unit, Air Quality Division

SUBJECT: Screening Level for 2-ethylaminoethanol

2-Ethylaminoethanol is also known as N-ethylethanolamine. 2-Ethylaminoethanol is a liquid at normal temperature, with a molecular weight of 89.14. The melting point is -6 degrees Celsius. The boiling point is 167 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 (1967- Dec 2001), National Library of Medicine (NLM) - Toxline, and National Toxicology Program (NTP) Status Report.

The CAS and NLM on-line literature searches were conducted on December 13, 2001, in order to locate relevant toxicity information.

The literature searches found several oral acute studies that been conducted with ethylaminoethanol. The report by Hartung and Cornish (1969) reports result of a 30- and a 90-day drinking water studies in addition to results of an oral acute study. It is generally preferred to use longer term studies to be used as the basis for setting the screening level. Therefore, the 90-day drinking water study provides the best basis for setting the screening level. The lowest dose tested (25 ppm), which was converted to 3.12 mg/kg by this reviewer) in this study had what is considered to be adverse effects - increased brain weight, and decreased kidney and spleen weight. While at doses of 50 ppm and greater, the rats had a dose-related decreased body weights and increased SGOT levels.

This 90-day oral study provides the best basis for calculation of the screening level. Using R232(1)(e) with the UF of 100 reduced to 10 because of 90 day duration, versus the 7-day duration the factor of 100 was designed for. And an additional factor of 10 for LOAEL-to-NOEAL adjustment will be used as follows.

$$\text{ITSL} = \frac{3.12\ \text{mg/kg}}{35\text{x}10\text{x}10} \times \frac{1\ \text{kg}}{0.9\ \text{m}^3} = 1\ \text{ug/m}^3\ \text{annual avg.}$$

Where the default rat inhalation rate of 0.9 m^3/kg is used in the above calculation.

References:

Hartung and Cornish. 1969. Acute and short-term oral toxicity of 2-N-ethylaminoethanol in rats. Fd Cosmet Toxicol 7:595-602.

GB:DB
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