

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

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**INTEROFFICE COMMUNICATION**

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TO: 2,4,6-Tri((dimethylamino)methyl) phenol file (CAS # 90-72-2)

FROM: Gary Butterfield

SUBJECT: Screening level for 2,4,6-Tri((dimethylamino)methyl) phenol

DATE: December 17, 2007

2,4,6-Tri((dimethylamino)methyl) phenol is also known by many manufacturer names. It is a liquid with a boiling point of 155C and a vapor pressure of 0.00056 mmHg at 25C.

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 - December 2007), National Library of Medicine (NLM) - Toxline, and National Toxicology Program (NTP) Status Report.

CAS and NLM on-line literature searches were conducted Dec 13, 2007. The literature searches found numerous articles that identify 2,4,6-tri((dimethylamino)methyl) phenol as being an agent that causes allergic contact dermatitis.

There are no published toxicity studies available for this material. This material is one of EPA's High Production Volume (HPV) chemicals. There was a robust summary on EPA's HPV webpage that summarizes an unpublished rat oral LD50 study, Anchor Chemical Ltd (1987). There are a few other acute LD50 studies reported in this summary; however, those were old enough that there were no GLP guidelines available for those studies, making them less desirable studies.

The LD50 study by Anchor Chemical was performed in 1987 following the OECD guideline #401 – acute oral toxicity. Groups of five male and five female Sprague-Dawley rats were administered N-(3-(trimethoxysilyl)propyl)-ethylenediamine via gavage without a vehicle (neat) at doses of 0, 1333, 2000, or 3000 mg/kg. The observation period lasted 14 days. The LD50 was determined by the method of Thompson (1947) and determined to be 2169 mg/kg for combined male and female.

The ITSL can be calculated by use of the LD50 under R232(1)(h) as follows.

$$\text{ITSL} = \frac{2169 \text{ mg/kg}}{500 \times 40 \times 100 \times 0.167} \times \frac{1 \text{ kg}}{0.9 \text{ m}^3} = 7 \text{ ug/m}^3 \text{ annual average}$$

References:

Anchor Chemical Ltd. 1987. Curing agent: K54 (BX352) acute oral toxicity test in the rat. APCI RRRS EXT-92/042. As cited in the robust summary available at <http://www.epa.gov/chemrtk/pubs/summaries/246trisd/c15125tc.htm>

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