

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

January 10, 2002

TO: 2,3-Dimethylphenol File (CAS #526-75-0)  
FROM: Gary Butterfield, Toxics Unit, Air Quality Division  
SUBJECT: Screening Level for 2,3-Dimethylphenol



The initial threshold screening level (ITSL) for 2,3-dimethylphenol is being set at  $2 \mu\text{g}/\text{m}^3$  with annual averaging.

2,3-Dimethylphenol is also commonly known as 2,3-xyleneol or 2,3-DMP. Dimethylphenol is a crystalline solid with a molecular weight of 122.18.

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- July 2000), National Library of Medicine (NLM) - Toxline, and National Toxicology Program (NTP) Status Report.

On-line literature searches were conducted on May 22, 2001 of the CAS and on May 21, 2001 of NLM.

Very little toxicity information on 2,3-DMP was located by the literature searches. The only study identified that could be used to determine a screening level was a 4-hour LC-50 study in male F344 rats at a dose level of  $85 \text{ mg}/\text{m}^3$  (maximum concentration achieved) reported by Kinkead and Leahy (1987). There were no deaths observed in this study. The dose tested in this study can be used as a substitute for the LC-50, for the purposes of calculating a screening level. The ITSL can be calculated from the surrogate 4-hour LC-50 and the equation in R232(f) as follows:

$$\text{ITSL} = \frac{(85000 \mu\text{g}/\text{m}^3)}{500 \times 100} = 2 \mu\text{g}/\text{m}^3 \text{ annual average}$$

The above ITSL is lower than would be expected from that determined with an actual LC-50. However, lacking this or better data, such an approach is considered more appropriate than use of the default ITSL of  $0.1 \mu\text{g}/\text{m}^3$  for when no toxicological data are available.

References:

Kinkead and Leahy. 1987. Evaluation of the acute toxicity of selected groundwater contaminants. AAMRL-TR-87-021. NTIS order # ADA180198.

GB:DB

cc: Cathy Simon, AQD  
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