

# MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

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## INTEROFFICE COMMUNICATION

To: File for Dimethyl Phthalate (CAS No. 131-11-3)  
From: George Eurich  
Date: August 5, 2011  
Subject: Screening Level for Dimethyl Phthalate (DMP)

The Initial Threshold Screening Level (ITSL) for Dimethyl Phthalate is 50 ug/m<sup>3</sup> based on an 8 hour averaging time.

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 Natural Resources and Environment (DNRE) library, International Agency for Research on Cancer (IARC) Monographs, Chemical Abstract Service (CAS) online (1968-October 2007), National Library of Medicine (NLM) - Toxline, and National Toxicology Program (NTP) Status Report.

DMP is used in solid rocket propellants, lacquers, plastics, safety glasses, rubber coating agents, molding powders, insect repellants, and pesticides. It is a colorless oily liquid with a slightly sweet odor and is slightly soluble in water. The chemical formula for DMP is C<sub>10</sub>H<sub>10</sub>O<sub>4</sub>, and the molecular weight is 194.19 g/mol. NIOSH and ACGIH both identify an occupational exposure level of 5 mg/m<sup>3</sup>.

A preliminary screening level literature review was performed by the AQD in 1998 resulting in an ACGIH TLV based Interim ITSL of 50 ug/m<sup>3</sup> - 8 hour averaging time. Subsequent literature reviews were performed by the AQD in 2003 and 2007, in addition to the current (2011) search. No new or relevant information was identified based on the literature searches. EPA has not established a reference concentration (RfC) or a reference dose (RfD) for DMP. The EPA IRIS database notes that a screening-level review conducted by an EPA contractor of the more recent toxicology literature pertinent to the RfC for DMP in August 2003 did not identify any critical new studies.

Literature review indicates DMP to have a low order of toxicity. The TLV TWA of 5 mg/m<sup>3</sup> is recommended to control the excess mist rather than to protect against toxic effects.

The screening level is based on the ACGIH TLV level of 5 mg/m<sup>3</sup> per Air Rule 336.1232(1)(c), which states: *ITSL = OEL divided by 100.*

TLV = 5 mg/m<sup>3</sup>

ITSL = 5 mg/m<sup>3</sup>/100 (1000 ug/m<sup>3</sup>)

**ITSL = 50 ug/m<sup>3</sup> based on an 8 hr averaging time.**

References:

ACGIH. 2010. TLVs and BEIs based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices. ACGIH. Cincinnati, OH.

AQD Dimethyl Phthalate File review, draft Interim ITSL documentation.