MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

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INTEROFFICE COMMUNICATION

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TO: File for Methyl Ethyl Ketone Peroxide (CAS#1338-23-4)

FROM: Mary Lee Hultin, Toxics Unit, Air Quality Division

SUBJECT: Screening Level for Methyl Ethyl Ketone Peroxide (CAS#1338-23-4)

DATE: March 15, 2007

The screening level for the above-mentioned compound is 15 µg/m^3 based on 8-hour averaging.

In 1992, the Air Quality Division (AQD) established an interim screening level for methyl ethyl ketone peroxide (MEKP). A full literature review has been conducted for the purpose of deriving a final screening level for this compound. The following references or databases were searched to identify data to determine the screening level: IRIS, HEAST, RTECS, EPB-CCD, DEQ library, CAS-online, NLM-online, IARC, NIOSH Pocket Guide, and ACGIH Guide. The U.S. Environmental Protection Agency (USEPA) has not developed a reference dose or reference concentration for MEKP. The American Conference of Governmental Industrial Hygienists (ACGIH) established a ceiling limit for MEPK. The ceiling limit from ACGIH of 1.5 mg/m^3 (or 0.2 ppm) served as the basis for the previously developed screening level.
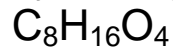
Methyl ethyl ketone peroxide
$C_8H_{16}O_4$
Molecular Weight 176.2

MEKP is a colorless liquid. It is combustible and shock-sensitive. Commercially, it is diluted with 40% dimethyl phthalate, cyclohexane peroxide or diallyl phthalate to reduce shock hazard. It is used to initiate polymerization of plastic monomers and in polyester resin or other polymer production. It is corrosive to skin and mucous membranes upon direct contact.

The ACGIH derived the ceiling guideline for MEKP based partially on the similar toxicity and irritancy to hydrogen peroxide. There are no long-term inhalation or oral studies on the toxicity of MEKP. The U.S. Environmental Protection Agency (EPA) has not developed a reference dose (RfD) or reference concentration (RfC) for MEPK. In accordance with Act 451, Part 55, R 232 (c), the initial threshold screening level will be derived using the OEL divided by 100.

ITSL = 1.5 mg/m^3/100 = 0.015 mg/m^3 and 0.015 mg/m^3 * 1000 = 15 µg/m^3

ITSL = 15 µg/m^3 with a 1 hour averaging time

MLH:lh