

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

December 17, 1996

TO: File for polyethylene glycol methyl ether (CAS# 9004-74-4)
FROM: Michael Depa, Toxics Unit, Air Quality Division
SUBJECT: Screening Level Determination

The initial threshold screening level (ITSL) for polyethylene glycol methyl ether, also known as dowanol TMH, is $13 \mu\text{g}/\text{m}^3$ based on an annual averaging time.

The following references or databases were searched to identify data to determine the ITSL: IRIS, RTECS, ACGIH Threshold Limit Values, NIOSH Pocket Guide to Hazardous Chemicals, Environmental Protection Bureau Library, IARC Monographs, CAS Online (1967 - October 1, 1996), National Library of Medicine, Health Effects Assessment Summary Tables, and NTP Status Report. Review of these sources found that EPA has not established an RfD or RfC for dowanol TMH. The ACGIH or NIOSH have not established occupational exposure limits (OELs). Dave Haslam of Dow Chemical faxed the AQD an acute oral toxicological study. On December 16, 1996, Mr. Haslam verified via phone conversation that the chemical dowanol TMH is the same chemical that is used in the toxicity study summarized below.

Groups of 6 rats (strain unspecified) were administered by gavage a single dose of 500, 1000, 2000, or 3980 mg/kg polyethylene monoallyl ether (FAX from Dow). No mention of control animals was reported. It was reported that no lesions were observed upon gross pathological examination of one rat selected from each dose level 1 day after treatment. The remaining rats survived and gained weight over an 8-day observation period. Since there were no deaths observed in the rats dosed with 3980 mg/kg this dose was determined to be a surrogate LD50. This dose was used to develop the ITSL as follows:

$$\text{ITSL} = 1/500 \times 1/100 \times 1/40 \times \text{LD50}/0.167 \times W_a/I_a$$

Where W_a and I_a are the default weight and inhalation rate of the rat (EPA, 1988).

$$\text{ITSL} = 1/(2,000,000) \times (3980 \text{ mg/kg})/(0.167) \times (0.395 \text{ kg})/(0.373 \text{ m}^3)$$

$$\text{ITSL} = 1.26 \times 10^{-2} \text{ mg}/\text{m}^3$$

$$\text{ITSL} = 13 \mu\text{g}/\text{m}^3 \text{ (based on an annual averaging time)}$$

The ITSL for polyethylene glycol methyl ether is $13 \mu\text{g}/\text{m}^3$ based on an annual averaging time.

REFERENCES

EPA. 1988. Recommendations for and documentation of biological values for use in risk assessment. PB 88-179874.

MD:slb