

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

August 20, 1999

TO: File for polyalkylene glycol monobutyl ether (Ucon LB-1715) (CAS# 9003-13-8)

FROM: Marco Bianchi

SUBJECT: Initial Threshold Screening Level

The initial threshold screening level (ITSL) for polyalkylene glycol monobutyl ether (Ucon LB-1715) is 160 $\mu\text{g}/\text{m}^3$ based on an annual averaging time.

The following references or databases were searched to identify data to determine the ITSL: IRIS-online, HEAST, NTP Management Status Report-online, RTECS, EPBCCD, EPB library, CAS-online, NLM-online, IARC-online, NIOSH Pocket Guide, and ACGIH Guide.

A complete reference check was conducted for Ucon LB-1715, but only one study was available for review. Union Carbide forwarded an LD₅₀ proprietary study which provided the minimum toxicological requirements to determine an ITSL. This study showed that Ucon LB-1715 was orally administered to five male, non-fasted Sherman rats in a geometric series. Sluggishness and fine tremors sometimes preceded death, which occurred usually within a few hours after dosing. All survivors gained weight in a normal fashion and were observed 14 days post-dosing. Necropsy of test animals revealed congestion and hemorrhage of the lungs, congested kidneys, and mottled livers. Thompson's method was used to calculate the median-effective dose LD₅₀ which equaled 48.7 ml/kg (49,000 mg/kg).

The ITSL was derived as follows:

$$\text{LD}_{50} = 48.7 \text{ ml/kg}$$

$$\text{Sp. Gravity} = 1 \text{ g/cm}^3 \text{ or } 1 \text{ g/ml}$$

$$49 \text{ ml/kg} \times 1 \text{ g/ml} \times 1000 = 49,000 \text{ mg/kg}$$

$$\text{ITSL} = \frac{1}{500} \times \frac{1}{40} \times \frac{1}{100} \times \frac{49000}{0.167 \times 0.916} = 0.160 \frac{\text{mg}}{\text{m}^3}$$

$$0.160 \text{ mg/m}^3 \times 1000 = 160 \mu\text{g/m}^3 \text{ based on annual averaging.}$$

The ITSL for polyalkylene glycol monobutyl ether (Ucon LB-1715) = 160 $\mu\text{g}/\text{m}^3$ based on annual averaging.

MB: LF