

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

August 8, 1997

TO: File for Oyel Hydroxyethylimidazoline (CAS# 95-38-5)

FROM: Michael Depa, Toxics Unit, Air Quality Division

SUBJECT: Screening Level Determination

The initial threshold screening level (ITSL) for oyel hydroxyethylimidazoline is 2  $\mu\text{g}/\text{m}^3$  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 Chemical Hazards, Environmental Protection Bureau Library, IARC Monographs, CAS Online (1967 - June 12, 1997), National Library of Medicine, Health Effects Assessment Summary Tables, and NTP Status Report. Review of these sources found that EPA has not established an RfC or RfD for oyel hydroxy ethyl imidazoline. The ACGIH and NIOSH have not established occupational exposure limits (OELs). One acute oral study was identified and is reviewed below.

An oral LD50 study was performed in male and female Sprague-Dawley rats using a 14-day observation period (Ciba-Geigy, 1992). The range of body weights were 78.0 - 85.4 grams for the male rats and 75.2 - 79.3 grams for the female rats. The rats were exposed to 0, 291.1, 411.8, 582.4, 823.7, 1165.0, 1647.8, or 2330.7 mg/kg 2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol also called oyel hydroxyethylimidazoline. The authors stated that signs and symptoms suggestive of neurotoxic effects (e.g., ataxia and lethargy) were observed in non-moribund animals. The 14-day oral LD50 was calculated by the Litchfield-Wilcoxon method to be 822 mg/kg (95% CL = 577 - 1171) in male rats and 932 mg/kg (95% CL = 810 - 1072) in female rats. The ITSL was calculated using the LD50 for the male rats.

The ITSL was calculated according to Rule 232(1)(h). The average body weight ( $W_a$ ) of the male rats in this study is not known, however, the median weight is 81.2 g. The inhalation rate ( $I_a$ ) of the male rat was obtained from EPA, 1988.

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

$$\text{ITSL} = (5 \times 10^{-7}) \times (822 \text{ mg/kg})/(0.167) \times (0.081 \text{ kg})/(0.102 \text{ m}^3)$$

$$\text{ITSL} = 1.96 \times 10^{-3} \text{ mg/m}^3$$

$$\text{ITSL} = 2 \text{ } \mu\text{g/m}^3 \text{ (annual averaging time)}$$

The ITSL for oyel hydroxyethylimidazoline is  $2 \text{ } \mu\text{g/m}^3$  based on annual averaging time.

## REFERENCES

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

Ciba-Geigy. 1992. Initial submission: acute oral LD50 study with male and female rats (final report) with cover letter dated 041092. Obtained from the EPA/OTS; Doc #86-870001385.

MD:SLB