MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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INTEROFFICE COMMUNICATION
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SEPTEMBER 6, 2000

TO: File for C11-C14 Isoalcohols, C14 rich, Ethoxylated Alcohol
            (CAS No. 78330-21-9)

FROM: Michael Depa, Toxics Unit, Air Quality Division

SUBJECT: Screening Level Determination

The initial threshold screening level (ITSL) for C11-C14 isoalcohols, C14 rich, ethoxylated alcohol is 8 μg/m³ (annual averaging time).

The following references or databases were searched to identify data to determine the screening level: Environmental Protection Agency's (EPA's) Integrated Risk Information System (IRIS), the Registry of Toxic Effects of Chemical Substances (RTECS), the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), National Institute of Occupational Safety and Health (NIOSH) Pocket Guide to Hazardous Chemicals, Environmental Protection Bureau Library, International Agency for Research on Cancer (IARC) Monographs, Chemical Abstract Service (CAS) Online (1967- June 2000), National Library of Medicine (NLM), Health Effects Assessment Summary Tables (HEAST), and National Toxicology Program (NTP) Status Report. EPA has not established a reference concentration (RfC) or reference dose (RfD) for C11-C14 isoalcohols, C14 rich, ethoxylated alcohol. There are no occupational exposure limits for C11-C14 isoalcohols, C14 rich, ethoxylated alcohol.

Animal Studies
In an acute study (EPA, 1991), albino rats in groups of 6 (3 male and 3 female), weighing 150-300 g, were dosed with a single oral dose of 0.5, 0.75, 0.84, 0.92, 1.0, 1.25, 1.4, 1.75, 2.52, 3.15, or 5.0 g/kg of Emulphogene BC-610 (also known as C11-C14 isoalcohols, C14 rich, ethoxylated alcohol; CAS No. 78330-21-9). The observation period was 14 days. The percent death occurring for each group was 0, 0, 16.7, 16.7, 0, 16.7, 16.7, 16.7, 33.3, 50, 100%. The highest 5 dose groups were used to calculate the LD50 of 2.85 g/kg (1.93 - 4.2) g/kg.

Screening Level Derivation
The ITSL was determined pursuant to Rule 232(1)g. The average body weight of 225 g was used. The default inhalation rate was determined according to EPA (1988).

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

$ITSL = (2850 \text{ mg/kg})/(2000000) \times 1/(0.167) \times (0.225 \text{ kg})/(0.0.235 \text{ m}^3)$

$ITSL = 0.00816 \text{ mg/m}^3$

$ITSL = 8 \text{ μg/m}^3$ (annual averaging time)

References

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

EPA. 1991. Initial submission: primary dermal irritation (rabbit): ocular irritation (rabbit); oral LD50 (rat) (Final Report) with cover letter dated 112691. US EPA OTS 88-920000331. Microfiche No. OTS0534782. Submitted by Rhone-Poulenc, Inc.

MD:LH