

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

December 4, 2000

TO: File for Exxate 1000 (oxo-decyl acetate) (108419-34-7)
FROM: Marco Bianchi, Toxic Unit, Air Quality Division
SUBJECT: Initial Threshold Screening Level

The initial threshold screening level (ITSL) for Exxate 1000 (oxo-decyl acetate) is 17 $\mu\text{g}/\text{m}^3$ based on an annual averaging time. Air Quality Division (AQD) staff initially evaluated this compound in 1999, but due to a paucity of data, the screening level was set at trace (0.1 $\mu\text{g}/\text{m}^3$ annual averaging). Since that time, an oral rat LD₅₀ toxicity study submitted by Exxon Corporation has provided adequate information to establish an ITSL for this compound.

In the Exxon study, groups of five male and five female Sprague-Dawley rats were given a single dose of Exxate 1000 at 5.727 ml/kg by oral gavage. Following dosing, the test animals were observed frequently at 1,2,4, and 6 hours post dosing and once daily for 14 days thereafter for pharmacotoxic signs and mortality. At the end of the observation period, survivors were terminated and underwent gross necropsy.

There were no deaths during the study and all animals exhibited body weight gain during the testing period. All animals showed ano-genital (urine and fecal) staining, soft stool, dry rales and hypoactivity up to Day 3. There were no observable abnormalities noted after Day 3. Postmortem gross examination revealed lung discoloration (scattered dark red foci) in one male and no observable abnormalities in the other 9 animals. The study investigators concluded that the acute oral LD₅₀ for Exxate 1000 in male Sprague-Dawley rats is >5.0 g/kg.

The ITSL was derived as follows:

$$\text{LD}_{50} = 5000 \text{ mg/kg}$$

$$\text{ITSL} = \frac{1}{500} \times \frac{1}{40} \times \frac{1}{100} \times \frac{5000}{0.167 \times 0.899} = 0.0167 \text{ mg/m}^3$$

$$0.0167 \text{ mg/m}^3 \times 1000 = 16.7 \text{ } \mu\text{g/m}^3 \text{ based on annual averaging.}$$

The ITSL for Exxate 1000 (oxo-decyl acetate) = 17 $\mu\text{g}/\text{m}^3$ based on annual averaging.

References:

1. Exxon Corporation. Robust Summary Acute Oral Toxicity Study in the Rat: Exxate 1000. Project #330501. Exxon Corporation.

MB:ST

cc: Cathy Simon
Mary Lee Hultin
Sheila Blais