

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

OCTOBER 11, 1994

TO: File for Trimethyl Orthoformate (CAS# 149-73-5)

FROM: Michael Depa, Toxics Unit

SUBJECT: Screening Level Determination

The initial threshold screening level (ITSL) for trimethyl orthoformate is 800 $\mu\text{g}/\text{m}^3$ 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-April 20, 1994), 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 trimethyl orthoformate. Occupational exposure limits were not available. An LC50 study was available. This study is described below.

Groups of 6 male ChR-CH rats were exposed to trimethyl orthoformate at measured concentration levels of 16.5, 36.2, 38.0, 44.0, and 47.8 mg/l for four hours (EPA/OTS). Mortality was observed in 1 animal exposed to 36.2 mg/l in 2 animals exposed to 38.0 mg/l in 5 exposed to 44.0 mg/l and in all rats exposed to the highest concentration. The observation period was 14 days. Gross necropsy revealed no effects attributable to the compound. The LC50 was calculated to be 40 mg/l (40,000 mg/m^3) by the method of Litchfield and Wilcoxon. The ITSL was calculated according to Rule 232 (1)(f) as follows:

$$\text{ITSL} = \frac{\text{LC50}}{500 \times 100}$$

$$\text{ITSL} = \frac{40,000 \text{ mg} / \text{m}^3}{50,000}$$

$$\text{ITSL} = 0.8 \text{ mg} / \text{m}^3$$

$$\text{ITSL} = 800 \text{ } \mu\text{g} / \text{m}^3$$

The ITSL for trimethyl orthoformate is 800 $\mu\text{g}/\text{m}^3$ based on an annual averaging time.

EPA/OTS. Acute inhalation toxicity on trimethyl orthoformate. DOC #878220471
(NTIS/OTS 0215044)