

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

October 16, 1992

TO: File for Deoderized Kerosene (CAS # 8020-83-5)
FROM: Mary Lee Hultin, Toxics Unit
SUBJECT: ITSL for Deoderized Kerosene

The screening level for this compound results jointly from inhouse staff efforts and the work of a toxicologist from the consulting firm of Dames & Moore. The consultant searched the following databases: TOXLINE, TOXLINE65, HSDB, CCRIS, RTECS, TOMES, as well as the CAS Online and Nutshell searches we provided. Toxics Unit staff conducted searches of additional references in-house and those references provided by the James River Company for use on their permit.

The initial threshold screening level for deoderized kerosene is based on a subchronic inhalation study in rats by Carpenter, C.P., et al., 1976. Rats were exposed for 6 hrs/day, 5 days/week for 13 weeks to measured concentrations of 14, 6.9 or 2.9 ppm. The 14 ppm dose was determined by the authors to be a No Adverse Effect Level. One rat died of pneumonitis at this level and one rat died of bronchopneumonia at the 6.9 ppm level. However, the authors did not feel these deaths were dose related. In the context of the other acute and subchronic studies conducted in rats, cats and dogs by these authors, the 14 ppm dose NOAEL does seem appropriate.

Conversion factor provided by Carpenter, et al: $1 \text{ ppm} = 6.99 \text{ mg/m}^3$
 $(14 \text{ ppm} \times 6.99) = 97.86 \text{ mg/m}^3$

$\text{ITSL} = (97.86 \text{ mg/m}^3) / (10 \times 100) \times (6/24) = 0.024 \text{ mg/m}^3$
or $24 \text{ } \mu\text{g/m}^3$ based on annual averaging

Note: Rule 232 (d) describes the equation for use of subchronic studies of 7-day duration. Due to the extended length of this subchronic study, the uncertainty factor of 35 for length of study was reduced to an uncertainty factor of 10.

References

Carpenter, C.P., et al., 1976. "Petroleum Hydrocarbon Toxicity Studies, XI. Animal and Human Response to Vapors of Deodorized Kerosene," Toxicology and Applied Pharmacology. v. 36, p. 433-456.