

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

September 29, 1998

TO: Manganese 2-ethylhexanoate file (CAS # 15956-58-8)

FROM: Gary Butterfield, Toxics Unit, Air Quality Division

SUBJECT: Initial Threshold Screening Level (ITSL) for manganese 2-ethylhexanoate

A September 16, 1998, CAS on-line and NLM literature search was not able to find any information on this compound. A search of secondary references also did not find any toxicity information.

The manufacturer, OMG Americas Inc., was able to provide some information on LC50 and LD50 studies that were conducted with their product, a mixture containing 37% manganese 2-ethylhexanoate, 58% mineral spirits and 5% other materials. Among the information provided by OMG Americas was a 1 hour LC50 study which did not actually determine a LC50 as too few animals died at the highest achievable exposure level of 14 g/m³. It would be possible to base a screening level on this pseudo-LC50 by assuming it to be an LC50, and calculate the ITSL from the equation in R232(g). A rat oral LD50 study was also provided. The Sherman-Wistar rat oral LD50 study was actually able to determine the oral LD50 as being 4.7 g/kg for female rats and 4.8 g/kg for male rats. The LD50 was calculated by the method of Finney (1971). Unfortunately it is difficult to use this information, either the LC50 or LD50, to calculate a screening level for one component of a complex mixture.

Assuming that the toxicity of this manganese carboxylic acid salt was due to the manganese rather than the 2-ethylhexanoic acid. It is possible to calculate a screening level by adjusting the manganese ITSL of 0.05 ug/m³ with 24 hour averaging, by the ratio of molecular weights for manganese 2-ethylhexanoate to manganese. The resultant ITSL for manganese 2-ethylhexanoate is $0.05 \text{ ug/m}^3 \times (341/55) = 0.3 \text{ ug/m}^3$ with 24 hour averaging.

GB:SLB
cc: Mary Lee Hultin, AQD