

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for Ortho-phenylphenol (CAS # 90-43-7) and Sodium ortho-phenol (CAS # 132-27-4)

FROM: Doreen Lehner

SUBJECT: Screening level for Ortho-phenylphenol (CAS # 90-43-7) and Sodium ortho-phenol (CAS # 132-27-4)

DATE: April 8, 2014

The Initial Risk Screening Level (IRSL) for Ortho-phenylphenol (CAS# 90-43-7) is $1.1 \mu\text{g}/\text{m}^3$ based on an annual averaging time. The IRSL was established on 7/23/1990 and is based on a U.S. EPA Health and Environmental Effects Profile for 2-Phenylphenol (EPA, 1984) which derived a human inhalation unit risk (q_1^*) of $5.5 \times 10^{-7} (\mu\text{g}/\text{m}^3)^{-1}$. The EPA based their calculations on an increased incidence of urinary bladder tumors observed in a 91 week study by Hiraga et al. (1981) in which male Fischer 344 rats were exposed via oral route to the sodium salt of orthophenylphenol. When the data from the Hiraga et al. (1981) study was calculated by staff using Global 82 statistical software, the human inhalation unit risk (q_1^*) = $8.7 \times 10^{-7} (\mu\text{g}/\text{m}^3)^{-1}$. Rule 231(1) was used to develop an IRSL for ortho-phenylphenol. The equation is below:

$$IRSL = \frac{1 \times 10^{-6}}{\text{Unit Risk}}$$

Using the human inhalation risk (q_1^*) of $8.7 \times 10^{-7} (\mu\text{g}/\text{m}^3)^{-1}$ for the unit risk gives:

$$IRSL = \frac{1 \times 10^{-6}}{8.7 \times 10^{-7}} = 1.1494 \mu\text{g}/\text{m}^3 = 1.1 \mu\text{g}/\text{m}^3$$

The IRSL for ortho-phenylphenol is $1.1 \mu\text{g}/\text{m}^3$ based on an annual averaging time and the SRSL is $11 \mu\text{g}/\text{m}^3$ based on an annual averaging time.

References

APCR, 1994. Air Pollution Control Rules, Promulgated pursuant to Part 55, Air Pollution Control of the Natural Resources and Environmental Protection Act, Michigan Department of Environmental Quality. 1994. Act 451, as amended (NREPA).

Hiraga, K. and Fujii, T. 1981. Induction of Tumors of the Urinary System in 344 Rats by Dietary Administration of Sodium O-phenylphenate. *Feed Cosmet. Toxicol.* 19(3):303-310.

U.S. EPA. 1984. Health and Environmental Effects Profile for 2-Phenylphenol. EPA/600/X-84/334. PB88-161989.

DL:lh