

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for Pentachlorophenol [CAS # 87-86-5]

FROM: Doreen Lehner, Toxics Unit, Air Quality Division

DATE: January 13, 2017

SUBJECT: Pentachlorophenol [CAS # 87-86-5] ITSL change in the averaging time from 24 hours to annual

The current initial threshold screening level (ITSL) for pentachlorophenol (PCP) is 20 µg/m<sup>3</sup> based on an annual averaging time. The ITSL was established on 10/4/2010 based on the EPA's oral reference dose (RfD) of 0.005 mg/kg-day (5 µg/kg). The EPA's RfD was derived from the liver effects from the Mecler (1996) study where four beagle dogs/sex/dose were fed either 0, 1.5, 3.5, or 6.5 mg/kg/day technical grade PCP (90.9% purity) by gelatin capsules for 52 weeks. The lowest observed adverse effect level (LOAEL) from the study was 1.5 mg/kg/day with an uncertainty factor of 300 (UF of 10 for variability in susceptibility in the human population; UF of 10 to account for extrapolation between dogs and humans; and an UF of 3 for extrapolation from a LOAEL to a NOAEL). In 2010, the ITSL averaging time was set at 24 hours. The ITSL may be appropriately set to an annual averaging time to reflect the duration of the Mecler (1996) 1-year oral study on beagles.

**References:**

APCR. 2016. 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).

EPA. 2010. Integrated Risk Information System. Pentachlorophenol (CASRN 87-86-5). Available online at: [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance\\_nمبر=86](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nمبر=86)

Mecler, F. 1996. Fifty-two week repeated dose chronic oral study of pentachlorophenol administered via capsule to dogs. Study conducted by TSI Mason Laboratories, Worcester, MA; TSI Report #ML-PTF-J31-95-94. Submitted to the Pentachlorophenol Task Force, c/o SRA International, Inc., Washington, D.C. U.S. Environmental Protection Agency, Washington, DC; MRID 439827-01. Unpublished report<sup>1</sup>.

DL:lh

<sup>1</sup> "This study was submitted to the Agency as part of the process for the development of the RED document by the U.S. EPA's OPP. Mecler (1996) satisfied the guideline requirements (OPPTS 870.4100) for a chronic toxicity study in non-rodents and is classified as an "acceptable" GLP study."

MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

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TO: Pentachlorophenol File (CAS # 87-86-5)  
FROM: Gary Butterfield  
SUBJECT: Screening level for Pentachlorophenol  
DATE: October 4, 2010

September 30, 2010 the EPA established a new IRIS entry for pentachlorophenol with an RfD (5 ug/kg) and an oral cancer potency of  $4e-1$  (ug/m<sup>3</sup>)-1. The new RfD was converted to an ITSL of 20 ug/m<sup>3</sup> 24 hour average. The new oral potency value was converted to set a new inhalation potency ( $1.1e-4$  (ug/m<sup>3</sup>)-1). The new values were placed in the EPBCCD AQD Access database with the 9-30-10 date. No new literature search, or extra calculations were conducted by AQD at this time.

See the IRIS documentation (summary and Toxicological Review) for additional details.