

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

July 28, 1993

TO: File for 2-chloropropane (CAS# 75-29-6)

FROM: Mary Lee Hultin, Toxics Unit

SUBJECT: Screening level for 2-chloropropane (CAS# 75-29-6)

The following sources were searched for toxicity data:

RTECS
EPA IRIS
DNR EPB and NUTSHELL
NIOSH
ACGIH TLV
CAS Online
HEAST
IARC Monographs
NTP Management Status Report

EPA provides a chronic inhalation RfC in HEAST of 0.1 mg/m³ based on a NOAEL from Gage, 1970 as listed in the Health and Environmental Effects Document for 2-Chloropropane, 1987. The Gage study involved dosing 4 male and 4 female rats to 1000 ppm or 250 ppm for 20 6 hour exposures. The 1000 ppm dose group exhibited extensive liver vacuolation and necrosis. However, neither toxic signs nor adverse pathology were found at the 250 ppm dose level. In 1981, Torkelson and Rowe discussed a Dow Chemical study which reported histopathological lesions in the kidneys and livers at 1000 ppm in several species exposed for 127, 7 hour exposures administered 5 days per week. The same authors also reported that Dow Chemical exposed several species to 500 ppm 2-chloropropane, resulting in a NOAEL at this level. However, Dow Chemical no longer has a record of this experiment.

No data on carcinogenicity, reproductive effects or teratogenicity were available. No chronic studies were found. One reference cited by EPA reported that 2-chloropropane was mutagenic in *S.typhimurium* strain TA100 both with and without S-9 activation.

Although the 500 ppm from Dow Chemical could represent a NOAEL, lack of documentation led the EPA to use the more conservative NOAEL of 250 ppm for derivation of the RfC. Therefore, the RfC from HEAST will be used for screening level derivation.

ITSL = 0.1 mg/m³ or 100 ug/m³ based on 24 hour averaging

July 28, 1993

REFERENCES:

1. Gage, J.C., 1970, "The subacute inhalation toxicity of 109 industrial chemicals", Brit. J. Indust. Med., v. 27, p. 1-18/
2. Torkelson, T.R. and V.K. Rowe. 1981, "Halogenated aliphatic hydrocarbons containing chlorine bromine and iodine" (sic), In: Patty's Industrial Hygiene and Toxicology, 3rd Ed., v. IIB, Clayton, G.D. and F.E. Clayton, Ed., as cited in 3.
3. USEPA, November 1987, Health and Environmental Effects Document for 2-Chloropropane, Prepared by the Environmental Criteria and Assessment Office, Office of Health and Environmental Assessment, ECAO-CIN-G019.