

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for Propionaldehyde [CAS# 123-38-6]

FROM: Doreen Lehner, Toxics Unit, Air Quality Division

DATE: February 7, 2017

SUBJECT: Propionaldehyde [CAS# 123-38-6] ITSL change in the averaging time from 24 hours to annual

The initial threshold screening level (ITSL) for propionaldehyde is $8 \mu\text{g}/\text{m}^3$ based on an annual averaging time. The ITSL was originally established on 10/1/2008 and was based on a reproductive study in male and female rats (NTIS, 1993). The critical effect was the incidence of atrophy of the olfactory epithelium in male rats. There were no significant developmental or reproductive effects observed in this study. As the key study used to derive the ITSL is a reproductive study where male and female rats were exposed to propionaldehyde vapor for 6 hours/day, 7 days/week via whole body exposure 2 weeks prior to mating (for females through gestation day 20; for males for a total of 52 exposures until sacrifice at week 7). As the length of the study is subchronic, the averaging time is appropriately set at annual. Therefore, the averaging time is being changed from 24 hours to annual.

References:

Act 451 of 1994, Natural Resources and Environmental Protection Act and Air Pollution Control Rules, Michigan Department of Environmental Quality.

NTIS. 1993. OTS0538178. EPA Document No. 86-930000198. Union Carbide. Propionaldehyde: combined repeated-exposure and reproductive/developmental toxicity study in rats with cover letter dated 041493. Submitted under TSCA Section 8D.

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TO: Propionaldehyde file (CAS # 123-38-6)
FROM: Gary Butterfield
SUBJECT: Screening level for Propionaldehyde
DATE: October 1, 2008

EPA IRIS established a new RfC of 8 ug/m³ for propionaldehyde on September 30, 2008. This RfC is based on the rat inhalation study reported by Union Carbide (1993) available by OTS 0538178. The rats were exposed to 0, 150, 750, or 1500 ppm propionaldehyde for 6 hour per day 7 day per week. Atrophy of olfactory epithelium was the critical effect. Higher doses had reduced body weight. The RfC was determined by using BMDS methodology. See the IRIS summary or the toxicological review for further details. Note that this RfC of 8 is twice the old AQD ITSL of 4 ug/m³ with annual averaging however.