

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for Vinyl acetate (CAS # 108-05-4)

FROM: Robert Sills, AQD Toxics Unit Supervisor

SUBJECT: Vinyl acetate ITSL justification

DATE: February 7, 2017

The current ITSL for Vinyl acetate is 200 ug/m³, with annual averaging time (AT).

This ITSL was established on August 23, 1990 at 200 ug/m³ with 24 hr AT. The basis for the ITSL was the EPA (1990) Reference Concentration (RfC) = 200 ug/m³, which was based on a chronic rat inhalation bioassay with the critical effect of nasal lesions. The NOAEL = 176 mg/m³, NOAEL(HEC) and point of departure (POD) = 5 mg/m³, and LOAEL (HEC) = 19 mg/m³. EPA (1990) applied a total uncertainty factor (UF_T) = 30, consisting of UF = 10 for intraspecies variability and UF = 3 for interspecies extrapolation (with dosimetric adjustment).

The averaging time (AT) assigned to the ITSL in 1990 was 24 hours, as per the default methodology at that time (Rule 232(2)(b)). The current file review concludes that the AT should be appropriately set at annual due to the nature of the critical effect and derivation of the ITSL, as allowed under Rule 229(2)(b).

The ITSL and RfC are calculated as follows:

$$\text{POD} = 5 \text{ mg/m}^3 = 5000 \text{ ug/m}^3$$

$$\text{ITSL} = \frac{5000 \text{ ug/m}^3}{\text{UF}_T = 30} = 166.7 \text{ ug/m}^3 \sim 200 \text{ ug/m}^3 \text{ (annual AT)}$$

Reference:

EPA. 1990. Integrated Risk Information System (IRIS database). Chemical file for Vinyl acetate. Last revised 10/1/90. Still current as of 2/7/17.