

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

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**INTEROFFICE COMMUNICATION**

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TO: File for Phosphoric acid (CAS# 7664-38-2)  
FROM: Keisha Williams, Air Quality Division, Toxics Unit  
DATE: December 1, 2016  
SUBJECT: Update of Screening Level

The initial threshold screening level (ITSL) for phosphoric acid is 10 µg/m<sup>3</sup> (annual averaging time) based on the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD) Rule 336.1229 (2) (b) and 336.1232 (1) (a). The ITSL was originally established with an averaging time set at 24 hours. It is being changed at this time to annual, as allowed per Rule 229 (2), because the original derivation accounted for chronic exposure. Attached is the August 2, 1995 memo describing the derivation of the ITSL value.

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES**

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**INTEROFFICE COMMUNICATION**

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August 2, 1995

TO: Phosphoric acid file (CAS# 7664-38-2)  
FROM: Gary Butterfield  
SUBJECT: Screening level for phosphoric acid

The ITSL for phosphoric acid is based on the EPA RfC. The RfC is based on the 13 week Sprague-Dawley rat inhalation study of Aranyi et al 1988. The critical effect observed in this study was bronchiolar fibrosis, an effect in the tracheobronchial region. EPA calculated the bench mark concentration associated with a 10% (BCM10) increased incidence in  $5.4 \text{ mg/m}^3$ , adjusting for 2.25 hr exposed per day for 4 days a week. The BCM (ADJ) is multiplied by the RDDR of 0.64 to obtain the BMC10 (HEC) of  $3.4 \text{ mg/m}^3$ . Applying an UF of 300 resulted in the RfC of  $10 \mu\text{g/m}^3$ .

For additional details, see the August 1, 1995 IRIS prinout for phosphoric acid.

References:

Aranyi et al. 1988. Effects of multiple intermittent inhalation exposures to red phosphorus/butyl rubber obscurant smokes in Sprague-Dawley rats. *Inhalation Toxicology* 1:65-78.

EPA. 1995. IRIS2 database, updated monthly.