

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

December 4, 2018

TO: File for Sodium Xylene Sulfonate (CAS# 1300-72-7)

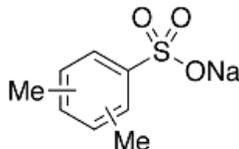
FROM: Michael Depa, Toxics Unit, Air Quality Division

SUBJECT: Screening Level Determination

The initial threshold screening level (ITSL) for sodium xylene sulfonate is being rescinded. Previously, the ITSL was established at 0.1 $\mu\text{g}/\text{m}^3$ in the year 2000 (annual averaging time). This was based on the default value as per Rule 232(h) given that useful toxicity data were not discovered.

The following references or databases were searched to identify data to determine the screening level: U.S. EPA Integrated Risk Information System (IRIS), Registry for Toxic Effects of Chemical Substances, American Conference of Governmental and Industrial Hygienists Threshold Limit Values, National Institute for Occupational Safety and Health Recommended Exposure Levels, International Agency for Research on Cancer (IARC) Monographs, Chemical Abstract Service SciFinder, and the National Toxicology Program. The EPA has not established a reference dose (RfD) or a reference concentration (RfC) for sodium xylene sulfonate. There are no occupational exposure limits for sodium xylene sulfonate. The molecular weight of sodium xylene sulfonate is 208.2 g, and the molecular formula is $\text{C}_8\text{H}_9\text{NaO}_3\text{S}$. The melting and boiling points are 27 and 157 $^\circ\text{C}$, respectively. The molecular structure is shown in Figure 1. The physical state of sodium xylene sulfonate is expected to be a white, crystalline powder.

Figure 1.



The Organization for Economic Co-operation and Development (OECD) summarized the available toxicological studies on several salts of xylene sulfonate (OECD SIDS, 2005). OECD assists countries in developing and harmonizing methods for assessing risk to human health and the environment, including methodologies for hazard and

exposure assessment. OECD concluded that xylene sulfonate salts, including sodium xylene sulfonate are “low toxicity.”

Sodium xylene sulfonate is expected to be a solid at standard temperature and pressure, and emitted as a particulate or liquid aerosol. In lieu of establishing an ITSL, it is appropriate for the following footnote is to be applied to this toxic air contaminant:

This toxic air contaminant (TAC) is reasonably anticipated to exist as a particle in the ambient air. A toxicological review has determined that, in lieu of setting a screening level, the primary NAAQS for particulate matter (PM_{2.5}, PM₁₀) are reasonable and appropriate health protective levels for the particulate. The combined ambient impact of all particulate TAC emissions from the process must be below the applicable PM primary NAAQS (PM_{2.5}, PM₁₀). The PM primary NAAQS for particulate matter may be used in permit to install exemption determinations for this TAC under Rule 290(a)(iii)(C).

Reference

Organisation for Economic Co-operation and Development (OECD) Screening Information DataSet (SIDS), 2005. HYDROTROPES. SIDS Initial Assessment Report for SIDS Initial Assessment Meeting; SIAM 21, 18-20 October 2005, Washington DC, USA. Category Name: Hydrotropes. CAS Numbers: 1300-72-7, 12068-03-0, 26447-10-9, 28348-53-0, 32073-22-6, 37475-88-0. United Nations Environment Programme Publications. SIDS Initial Assessment Report (SIAR). Accessed on-line 12-4-2018. <http://www.inchem.org/documents/sids/sids/hydrotropes.pdf>