

MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND THE ENVIRONMENT

INTEROFFICE COMMUNICATION

TO: File for Vinylene Carbonate (CAS # 872-36-6)

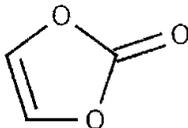
FROM: Doreen Lehner, Toxics Unit, Air Quality Division

SUBJECT: Screening Level for Vinylene carbonate (CAS # 872-36-6)

DATE: September 10, 2010

The initial threshold screening level (ITSL) for vinylene carbonate (CAS # 872-36-6) is 0.1 µg/m³ based on an annual averaging time.

Vinylene carbonate (MW 86.0462) is a highly polar compound that is a colorless liquid at room temperature. It is used as an electrolyte additive for improving electrode performance in lithium batteries, as a copolymer with acrylamide as a matrix support for enzyme immobilization, as a component of surface coatings, or as a monomer for the preparation of polyvinylene carbonate.



A literature review was conducted to determine an initial threshold screening level (ITSL) for vinylene carbonate. The following references and databases were searched to derive the above screening level: EPBCCD, United States Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS), National Institute for Occupational Safety and Health (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values and Biological Exposure Indices (TLV/BEI) 2008 guide, National Toxicology Program (NTP) Study Database, International Agency for Research on Cancer (IARC), Acute Database, Chemical Abstract Service (CAS) Online, National Library of Medicine (NLM)-online, EPA Aggregated Computational Toxicology Resource (ACTOR) Database, EPA Toxic Substance Control Act Test Submission Database (TSCATS), Hazardous Substances Data Bank (HSDB) and Patty's Industrial Hygiene & Toxicology.

RfC or RfD values were unavailable. There is no NIOSH recommended exposure limit data available or a threshold limit value from ACGIH. There are also no 7-day inhalation studies for vinylene carbonate, which could give a NOAEL or LOAEL and no acute inhalation studies, which would give an LC. There are no verifiable LD50 studies which could be used for risk assessment.

Based on Rule 232 (1)(i) the ITSL is set at the default of 0.1 $\mu\text{g}/\text{m}^3$. According to Rule 232 (2)(c), the averaging time is annual. Based on the above data, the ITSL for vinylene carbonate is 0.1 $\mu\text{g}/\text{m}^3$ based on an annual averaging time.

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

DL:lh