

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for polyethylene terephthalate [uncoated] (CAS # 35176-78-4)

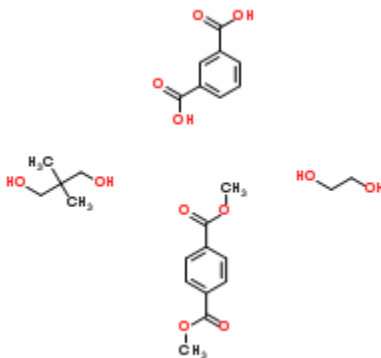
FROM: Doreen Lehner, Toxics Unit, Air Quality Division

DATE: March 31, 2011

SUBJECT: Screening Level for polyethylene terephthalate [uncoated] (CAS # 35176-78-4)

The initial threshold screening level (ITSL) for polyethylene terephthalate [uncoated] (CAS # 35176-78-4) is 0.1 $\mu\text{g}/\text{m}^3$ annual averaging time.

Polyethylene terephthalate [uncoated] (CAS # 35176-78-4) (is also known as 1,3-Benzenedicarboxylic acid polymer with 1,4-dimethyl-1,4-benzenedicarboxylate-2,2-dimethyl-1,3-propanediol and 1,2-ethanediol or dimethylbenzene-1,4-dicarboxylate;2,2-dimethylpropane-1,3-diol;ethylene glycol; isophthalic acid) is found in granular form or as a solid film and is clear to pale green in color with a very faint odor. It is insoluble in water, but can be hydrolyzed by strong acids and bases and by water at high temperatures. Incomplete combustion may produce carbon monoxide, acrolein, and aldehydes. This chemical is a thermoplastic, high molecular weight (MW = 526.5303), aromatic, linear saturated polyester resin that is used as a coating on metal substrates for packaging nonalcoholic food, in printing inks, label lacquers, thermoset coil coatings, and as a clear primer for oriented PET films.



A literature review was conducted to determine an initial threshold screening level (ITSL) for this chemical. The following references and databases were searched to derive the above screening level: EPBCCD, United States Environmental Protection Agency (US EPA) Integrated Risk Information System (IRIS), National Institute for Occupational Safety and Health (NIOSH), 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 (searched 3/29/11), National Library of Medicine (NLM)-online, EPA Aggregated Computational Toxicology Resource (ACToR) Database, US EPA TSCATS database, and Hazardous Substances Data Bank (HSDB).

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RfC or RfD values were unavailable. There is no NIOSH recommended exposure limit data available for this compound or a threshold limit value from ACGIH. No 7-day inhalation studies which would yield a LOAEL or NOAEL and no acute inhalation data where an LC₅₀ can be derived. Based on Rule 232(1)(i) the ITSL is set at the default of 0.1 µg/m³. According to Rule 232(2)(c), the averaging time is annual.

Based on the above data, the ITSL for polyethylene terephthalate [uncoated] (CAS # 35176-78-4) is 0.1 µg/m³ based on an annual averaging time.

References:

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

DL:lh