

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: File for Isoamyl Acetate (CAS No. 123-92-2)
FROM: Cathy Simon, Air Quality Division
DATE: January 17, 2013
SUBJECT: Screening Level Update

The initial threshold screening level (ITSL) for isoamyl acetate has been changed from 5250 $\mu\text{g}/\text{m}^3$ (8-hour averaging time) to 2700 $\mu\text{g}/\text{m}^3$ (8-hour averaging time). In addition, a second ITSL of 5300 $\mu\text{g}/\text{m}^3$ (1-hour averaging time) has also been established for isoamyl acetate. These changes are being made as part of a project to update ITSLs that are derived from outdated occupational exposure limits. The evaluation of data being done as part of this project is limited to identifying the most recent occupational exposure limit, and does not include a review of all the available scientific literature.

The original ITSL for isoamyl acetate was set in 1997 and was derived from the National Institute of Occupational Safety and Health (NIOSH) recommended exposure level (REL) of 525 mg/m^3 for this compound (MDEQ, 1997). The new ITSLs are based upon the most recent American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for isoamyl acetate, and include a time weighted average (TWA) TLV of 50 ppm (266 mg/m^3) and a short-term exposure limit (STEL) TLV of 100 ppm (532 mg/m^3) (ACGIH, 2001). These TLVs were adopted by the ACGIH in 2001, and represent the most up to date and scientifically based TLVs available from the ACGIH. The new ITSLs were derived as follows:

$$ITSL_{(8\text{-hour averaging time})} = \frac{TLV_{(TWA)}}{100} = \frac{266 \text{ mg}/\text{m}^3}{100} = 2.66 \text{ mg}/\text{m}^3 = 2660 \text{ }\mu\text{g}/\text{m}^3$$

$$ITSL_{(one\ hour\ averaging\ time)} = \frac{TLV_{(STEL)}}{100} = \frac{532 \text{ mg}/\text{m}^3}{100} = 5.32 \text{ mg}/\text{m}^3 = 5320 \text{ }\mu\text{g}/\text{m}^3$$

Rounding to two significant figures results in final ITSLs of 2700 $\mu\text{g}/\text{m}^3$ (8-hour averaging time) and 5300 $\mu\text{g}/\text{m}^3$ (one hour averaging time). These ITSLs were derived pursuant to Rule 229(2)(b) of the Michigan Air Pollution Control Rules, and are consistent with the methodologies of Rules 232(1)(c) and 232(2)(a).

References

ACGIH. 2001. *Pentyl Acetate, All Isomers. Documentation of the Threshold Limit Values and Biological Exposure Indices*. 7th Edition. American Conference of Governmental Industrial Hygienists, Cincinnati, OH.

MDEQ. 1997. *Memo from Michael Depa to File for Isoamyl Acetate (CAS # 123-92-9). Subject: Screening Level Determination*. March 13, 1997. Michigan Department of Environmental Quality, Air Quality Division.

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