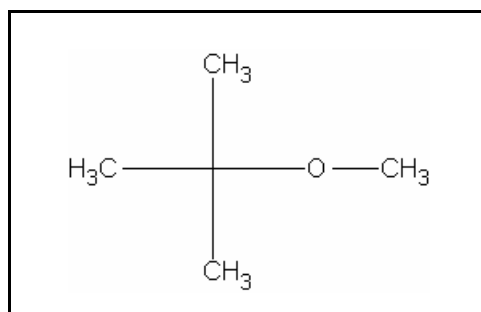




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

METHYL TERT-BUTYL ETHER

CAS RN: 1634-04-4
Water Solubility: 4.8 g/100 mL
Log K_{ow} : 1.24



Standard

The procedures described in the Tier II methodology indicate that, except possibly where a locally important species is very sensitive, aquatic organisms should not be affected unacceptably if the four (4) day average concentration of methyl *tert*-butyl ether does not exceed 730 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 6,500 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

$$SAV = \text{lowest GMAV}/SAF$$

$$\begin{aligned}\text{Lowest GMAV} &= 170,000 \text{ } \mu\text{g/L} \\ SAF &= 13\end{aligned}$$

$$SAV = 170,000/13 = 13,077 \text{ } \mu\text{g/L}$$

$$SMC = SAV/2 = 13,077/2 = \mathbf{6,500 \text{ } \mu\text{g/L}}$$

Chronic Aquatic Life:

$$\text{SCV} = \text{SAV}/\text{SACR}$$

$$\text{SACR} = 18$$

$$\text{SCV} = 13,077/18 = \mathbf{730 \mu\text{g/L}}$$

Data

Table 1. GMAVs and SMAVs for methyl *tert*-butyl ether

Genus Mean Acute Value <u>($\mu\text{g/L}$)</u>	<u>Species</u>	Species Mean Acute Value <u>($\mu\text{g/L}$)</u>	<u>Reference Number</u>
170,000	Cladoceran <u><i>Daphnia magna</i></u>	170,000	1
689,000	Fathead Minnow <u><i>Pimephales promelas</i></u>	706,000	2
	Fathead Minnow <u><i>Pimephales promelas</i></u>	672,000	3

References

1. A.S.I. Analytical 1990. Toxicity tests conducted for the Amoco Oil Corporation.
2. Veith, G.D., D.J. Call and L.T. Brooke 1983. Estimating the acute toxicity of narcotic industrial chemicals to fathead minnows. In: Aquatic Toxicology and Hazard Assessment: Sixth Symposium. ASTM STP 802, W.E. Bishop, R.D. Cardwell and B.B. Heidolph (Eds.). American Society of Testing and Materials. Philadelphia, PA.
3. Geiger, D.L., D.J. Call, and L.T. Brooke 1988. Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol 4. Center for Lake Superior Environmental Studies, University of Wisconsin, Superior, WI: 335 pp.

Acronyms/Abbreviations

CAS RN	Chemical Abstract Service Registry Number
K _{ow}	Octanol-Water Partition Coefficient
P (superscript)	Predicted value
SAV	Secondary Acute Value
GMAV	Genus Mean Acute Value
SAF	Secondary Acute Factor
SMC	Secondary Maximum Concentration
SCC	Secondary Continuous Concentration
SACR	Secondary Acute-Chronic Ratio
FT	Flow-through
S	Static
U	Unmeasured
M	Measured
EVISTRA	Evaluation and Interpretation of Suitable Test Results in AQUIRE (EPA quality checking method/database)

Revision History

October 1, 1998 Values first developed
September 18, 2001 New search for data. No studies added.

Contact Information

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