



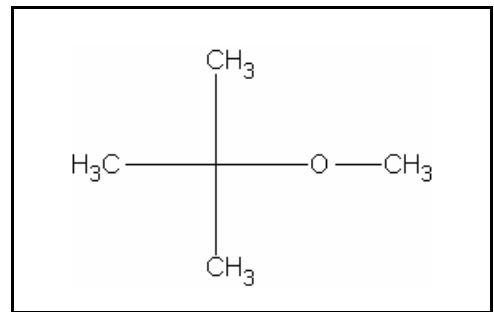
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## TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

### 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  $\mu\text{g/L}$  more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 6,500  $\mu\text{g/L}$  more than once every three (3) years on the average.

#### Calculations

##### Acute Aquatic Life:

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

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

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

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

##### Chronic Aquatic Life:

$$SCV = SAV/SACR$$

$$SACR = 18$$

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

## Data

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

| <u>Genus Mean<br/>Acute Value<br/>(<math>\mu\text{g/L}</math>)</u> | <u>Species</u>                               | <u>Species Mean<br/>Acute Value<br/>(<math>\mu\text{g/L}</math>)</u> | <u>Reference<br/>Number</u> |
|--|--|--|-----------------------------|
| 170,000  | Cladoceran<br><u>Daphnia magna</u>           | 170,000  | 1                           |
| 689,000  | Fathead Minnow<br><u>Pimephales promelas</u> | 706,000  | 2                           |
|  | Fathead Minnow<br><u>Pimephales promelas</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 <sub>ow</sub> | 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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