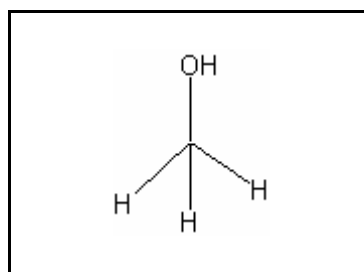




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

METHANOL

CAS RN: 67-56-1
Water Solubility: miscible
Log K_{ow}: -0.764^P



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 methanol does not exceed 330 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 3,000 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\begin{aligned}\text{Lowest GMAV} &= 37,020 \text{ } \mu\text{g/L} \\ \text{SAF} &= 6.1\end{aligned}$$

$$\text{SAV} = 37,020/6.1 = 6,069 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 6,069/2 = \mathbf{3,000 \text{ } \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCV = SAV/SACR$$

$$SACR = 18$$

$$SCV = 6,069/18 = \mathbf{330 \mu g/L}$$

Data

Table 1. GMAVs and SMAVs for methanol

<u>Genus Mean Acute Value ($\mu\text{g/L}$)</u>	<u>Species</u>	<u>Species Mean Acute Value ($\mu\text{g/L}$)</u>	<u>Acute- Chronic Ratio</u>	<u>Reference Number</u>
24,500,000	Cladoceran <u>Daphnia magna</u>	24,500,000		1
13,000,000	Rainbow Trout <u>Oncorhynchus mykiss</u>	13,000,000		2
28,900,000	Fathead Minnow <u>Pimephales promelas</u>	28,900,000		2
12,700,000	Bluegill <u>Lepomis macrochirus</u>	12,700,000		2
37,020	Mussel <u>Anodonta imbecilis</u>	37,020		3

References

1. Pickering, Q.H. and C.Henderson 1966. Acute Toxicity of Some Important Petrochemicals to Fish. J. Water Pollut. Control Fed. 38(9):1419-1429
2. Degraeve, G.M., D.L.Geiger, J.S.Meyer, and H.L.Bergman 1980. Acute and Embryo-Larval Toxicity of Phenolic Compounds to Aquatic Biota. Arch. Environ. Contam. Toxicol. 9(5):557-568.
3. Geiger, D.L., S.H.Poirier, L.T.Brooke, and D.J.Call 1986. Acute Toxicities of Organic

4. Canton, J.H., and D.M.M. Adema 1978. Reproducibility of short-term and reproduction toxicity experiments with *Daphnia magna* and comparison of the sensitivity of *Daphnia magna* with *Daphnia pulex* and *Daphnia cucullata* in short-term experiments. *Hydrobiologia* 59: 135-140.

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

February 16, 1999 Values first developed

July 17, 2001 New search for data. No new studies added.

Contact Information

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