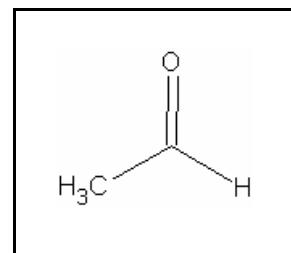




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

ACETALDEHYDE

CAS RN: 75-07-0
Water Solubility: water soluble
Log K_{ow}:



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 acetaldehyde does not exceed 130 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 1200 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\begin{aligned}\text{Lowest GMAV} &= 30,800 \text{ } \mu\text{g/L} \\ SAF &= 13.0\end{aligned}$$

$$SAV = 30,800/13.0 = 2,369 \text{ } \mu\text{g/L}$$

$$SMC = SAV/2 = 2,369/2 = \mathbf{1200 \text{ } \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCC = SAV/SACR$$

$$SACR = 18$$

$$SCC = 2,369/18 = \mathbf{130 \mu g/L}$$

Data

Table 1. GMAVs and SMAVs for acetaldehyde

<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>
48,250	Cladoceran <u>Daphnia magna</u>	48,250		1
30,800	Fathead Minnow <u>Pimephales promelas</u>	30,800		2

References

1. Randall, T.L. and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation J. Water Pollut. Control Fed. 52(8):2117-2130
2. Brooke, L.T., D.J. Call, D.L. Geiger, and C.E. Northcott 1984. Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 1. Center for Lake Superior Environmental Studies, University of Wisconsin, Superior, WI:414 p.

Acronyms/Abbreviations

CAS RN	Chemical Abstract Service
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	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

March 18, 1999 Values first developed
August 18, 2000 New search for data. No new studies added.

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