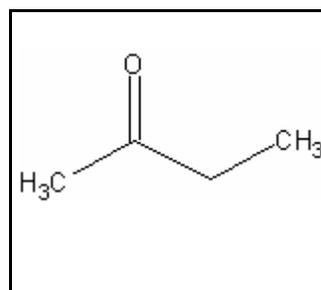




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

2-BUTANONE

CAS RN: 78-93-3
Water Solubility: 256,000 mg/L
Log K_{ow} : 0.32^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 2-butanone does not exceed 14,000 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 120,000 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\begin{aligned} \text{Lowest GMAV} &= 3,220,000 \text{ } \mu\text{g/L} \\ \text{SAF} &= 13.0 \end{aligned}$$

$$SAV = 3,220,000/13.0 = 247,700 \text{ } \mu\text{g/L}$$

$$SMC = SAV/2 = 247,700/2 = \mathbf{120,000 \text{ } \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCC = SAV/SACR$$

$$SACR = 18$$

$$SCC = 247,700/18 = \mathbf{14,000 \mu g/L}$$

Notes:

Since the daphnid LC₅₀ was unmeasured (greater than value), the fathead minnow data were used to calculate the aquatic life values.

Data

Table 1. GMAVs and SMAVs for 2-butanone

<u>Genus Mean Acute Value (mg/L)</u>	<u>Species</u>	<u>Species Mean Acute Value (mg/L)</u>	<u>Acute- Chronic Ratio</u>	<u>Reference Number</u>
>520,000	Cladoceran <u>Daphnia magna</u>	>520,000		1
3,220,000	Fathead Minnow <u>Pimephales promelas</u>	3,220,000		2

References

1. LeBlanc, G.A. 1980. Acute toxicity of priority pollutants to water flea (Daphnia magna). Bull Environ. Contam. Toxicol. 24(5): 684-691.
2. L.T. Brooke, 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 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

April 15, 1998 Values first developed
August 23, 2000 New search for data. No new studies added.

Contact Information

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