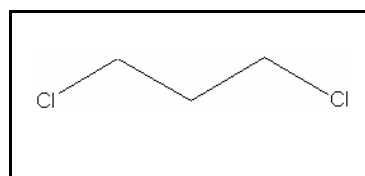




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

1,3-DICHLOROPROPENE

CAS RN: 542-75-6
Water Solubility: <0.01 g/100 mL at 16.5 C
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 1,3-dichloropropene does not exceed 1.9 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 17 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\begin{aligned}\text{Lowest GMAV} &= 240 \text{ } \mu\text{g/L} \\ \text{SAF} &= 7.0\end{aligned}$$

$$\text{SAV} = 240/7.0 = 34.29 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 34.29/2 = 17 \text{ } \mu\text{g/L}$$

Chronic Aquatic Life:

$$SCV = SAV/SACR$$

$$SACR = 18$$

$$SCV = 34.29/18 = \mathbf{1.9 \mu g/L}$$

Data

Table 1. GMAVs and SMAVs for 1,3-dichloropropene

<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>
6,100	Bluegill <u>Lepomis macrochirus</u>	6,100		1
240	Fathead Minnow <u>Pimephales promelas</u>	240		2
6,200	Cladoceran <u>Daphnia magna</u>	6,200		3
5,900	Rainbow Trout <u>Oncorhynchus mykiss</u>	5,900		4

References

1. Buccafusco, R.J., S.J. Ells, and G.A. LeBlanc 1981. Acute toxicity of priority pollutants to bluegill (*Lepomis macrochirus*). Bull. Environ. Contam. Toxicol. 24(5): 446-452.
2. Geiger, D.L., S.H. Poirier, L.T. Brook et al. 1990. Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 5. Center for Lake Superior Environmental Studies, University of Wisconsin, Superior, WI. 332 pp.

3. LeBlanc, G.A. 1980. Acute toxicity of priority pollutants to water flea (Daphnia magna). Bull. Environ. Contam. Toxicol. 24: 684-691.
4. Schneider, B. (ed.) 1979. Toxicological Handbook of Mammalian and Aquatic Data. U.S. EPA PB80-19876. Beltsville, MD.

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

December 1, 1998	Values first developed
April 25, 2001	New search for data. No new studies added.

Contact Information

David B. Kallander
Water Quality Standards Section
Indiana Department of Environmental Management
100 North Senate Ave., P.O. Box 6015
Indianapolis, IN 46206-6015
(317) 233-2472
Email: dkalland@dem.state.in.us