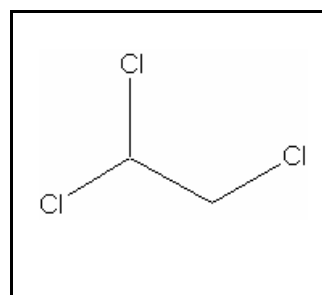




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

1,1,2-TRICHLOROETHANE

CAS RN: 79-00-5
Water Solubility: 0.442 g/100 mL
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 1,1,2-trichloroethane does not exceed 87 $\mu\text{g/L}$ more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 490 $\mu\text{g/L}$ more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\begin{aligned}\text{Lowest GMAV} &= 7,800 \mu\text{g/L} \\ \text{SAF} &= 8.0\end{aligned}$$

$$\text{SAV} = 7,800/8.0 = 975 \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 975/2 = 490 \text{ } \mu\text{g/L}$$

Chronic Aquatic Life:

$$\text{SCV} = \text{SAV}/\text{SACR}$$

$$\text{SACR} = 11.25 \text{ (Geometric mean of 18, 18, 4.4)}$$

$$\text{SCV} = 975/11.25 = 87 \text{ } \mu\text{g/L}$$

Calculation of ACR's

Fathead Minnows

$$\text{NOEC} = 13,000 \text{ } \mu\text{g/L}$$

$$\text{LOEC} = 26,000 \text{ } \mu\text{g/L}$$

$$\text{CV} = \text{Geometric Mean of 13,000 and 26,000} = 18,385$$

$$\text{ACR} = 81,000/18,385 = 4.4$$

Data

Table 1. GMAVs and SMAVs for 1,1,2-trichloroethane

<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>
39,726	Cladoceran <u>Daphnia magna</u>	43,000		1
	Cladoceran <u>Daphnia magna</u>	18,000		4
	Cladoceran <u>Daphnia magna</u>	81,000	4.4	5
16,799	Fathead Minnow <u>Pimephales promelas</u>	81,800		2
	Fathead Minnow <u>Pimephales promelas</u>	81,700		6

	Fathead Minnow <u>Pimephales promelas</u>	81,600	7
7,800	Bluegill <u>Lepomis macrochirus</u>	40,000	3

References

References:

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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

October 26, 1998 Values first developed
July 17, 2001 New search for data. No new studies added.

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