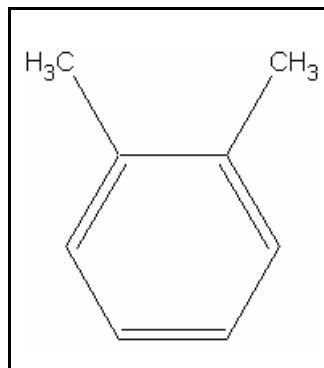




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

XYLENE

CAS RN: 1330-20-7
Water Solubility: 0.0175 g/100 mL
Log K_{ow}: 3.17



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 xylene does not exceed 35 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 310 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\text{Lowest GMAV} = 3820 \text{ } \mu\text{g/L}$$

$$\text{SAF} = 6.1$$

$$\text{SAV} = 3820/6.1 = 626.2 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 626.2/2 = \mathbf{310\ \mu\text{g/L}}$$

Chronic Aquatic Life:

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

$$\text{SACR} = 18$$

$$\text{SCV} = 626.2/18 = \mathbf{35\ \mu\text{g/L}}$$

Data

Table 1. GMAVs for xylene

<u>Genus Mean Acute Value ($\mu\text{g/L}$)</u>	<u>Species</u>	<u>Species Acute Value ($\mu\text{g/L}$)</u>	<u>Reference Number</u>
22,400	Snail <u>Aplexa hypnorum</u>	22,400	1
24,344	Goldfish <u>Carassius auratus</u>	16,100	1
	Goldfish <u>Carassius auratus</u>	36,810	2
16,100	White Sucker <u>Pimephales promelas</u>	16,100	1
3,820	Cladoceran <u>Daphnia magna</u>	3,820	1
17,408	Bluegill <u>Lepomis macrochirus</u>	15,700	3
	Bluegill <u>Lepomis macrochirus</u>	16,100	1

	Bluegill <u>Lepomis macrochirus</u>	20,870	2
8,050	Rainbow trout <u>Oncorhynchus mykiss</u>	8,050	1
18,417	Fathead minnow <u>Pimephales promelas</u>	28,770	2
	Fathead minnow <u>Pimephales promelas</u>	42,000	4
	Fathead minnow <u>Pimephales promelas</u>	16,100	1
	Fathead minnow <u>Pimephales promelas</u>	8,870	5
	Fathead minnow <u>Pimephales promelas</u>	16,400	6
	Fathead minnow <u>Pimephales promelas</u>	26,700	2
	Fathead minnow <u>Pimephales promelas</u>	14,800	6
	Fathead minnow <u>Pimephales promelas</u>	16,000	6
	Fathead minnow <u>Pimephales promelas</u>	16,400	6
	Fathead minnow <u>Pimephales promelas</u>	15,300	6
34,730	Guppy <u>Poecilia reticulata</u>	34,730	2

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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

June 19, 1998 Values first developed
September 21, 2001 New search for data. No studies added.

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