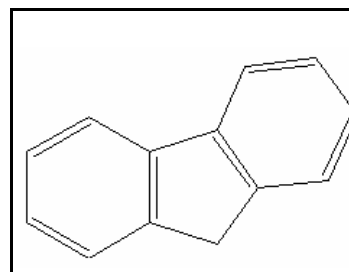




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

FLUORENE

CAS RN: 95-94-3
Water Solubility: 0.000019 g/100 mL
Log K_{ow}: 4.18



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 fluorene does not exceed 2.4 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 22 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\text{Lowest GMAV} = 301.9 \text{ } \mu\text{g/L}$$

$$\text{SAF} = 7.0$$

$$\text{SAV} = 301.9/7.0 = 43.13 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 43.13/2 = \mathbf{22 \text{ } \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCV = SAV/SACR$$

$$SACR = 18$$

$$SCV = 43.13/18.0 = 2.4 \mu\text{g/L}$$

Data

Table 1. GMAVs and SMAVs for fluorene

Genus Mean Acute Value ($\mu\text{g/L}$)	Species	Species Mean Acute Value ($\mu\text{g/L}$)	Acute- Chronic Ratio	Reference Number
910	Bluegill <u>Lepomis macrochirus</u>	910		1
100,000	Fathead Minnow <u>Pimephales promelas</u>	100,000		1
2350	Midge	2350		1
820	Rainbow Trout <u>Salmo gairdneri</u>	820		1
301.9	Cladoceran <u>Daphnia magna</u>	430		1
	Cladoceran <u>Daphnia pulex</u>	212		2

References

1. Finger, S.E., E.F. Little, M.G. Henry 1985. Comparison of laboratory and field assessment. Part I: Effects of fluorene on the survival, growth, reproduction and behavior. In: T.P. Boyle (ed). Validation and predictability of laboratory methods for assessing the fate and effects of conatminants in aquatic ecosystems. 1st Symposium, ASTM STP 865. Philidelphia, PA: 120-133.
2. Smith, S.B., J.F. Savino, and M.A. Blouin 1988. Acute toxicity to *Daphnia pulex* of six classes of chemical compounds potentially hazardous to Great Lakes Aquatic Biota. J. Great Lakes Res. 14(4): 394-404.

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

January 16, 1997 Values first developed
May 15, 2001 New search for data. No new studies added.

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