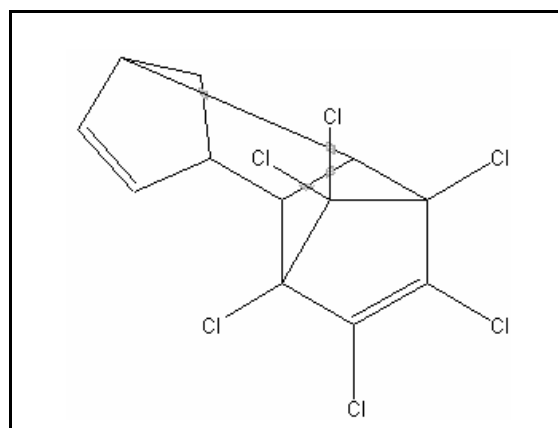




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

ALDRIN

CAS RN: 309-00-2
Water Solubility: 0.000018 g/100 mL
Log K_{ow}: 6.496



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 aldrin does not exceed 0.035 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 0.15 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\begin{aligned}\text{Lowest GMAV} &= 1.3 \text{ } \mu\text{g/L} \\ \text{SAF} &= 4.3\end{aligned}$$

$$\text{SAV} = 1.3/4.3 = 0.30 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 0.30/2 = \mathbf{0.15 \text{ } \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCC = SAV/SACR$$

$$SACR = 8.5 \quad (\text{Geometric mean of 11, 9.1, 6.2})$$

$$SCC = 0.30/8.5 = \mathbf{0.035 \mu g/L}$$

Notes:

The data used to calculate these criteria came primarily from EPA's 1980 criteria document for aldrin/dieldrin.

Data

Table 1. GMAVs and SMAVs for aldrin

<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>
28	Cladoceran <u>Daphnia pulex</u>	28		1
27	Cladoceran <u>Simocephalus serrulatus</u>	27		1
8	Isopod <u>Asellus brevicaudus</u>	8		2
6930	Scud <u>Gammarus fasciatus</u>	4,900		3
	Scud <u>Gammarus lacustris</u>	9,800		2
50	Glass shrimp <u>Palaemonetes kadiakensis</u>	50		2
1.3	Stonefly <u>Pteronarcys californica</u>	1.3		4
16	American eel	16		5

	<u>Anguilla rostra</u>			
7.0	Rainbow Trout <u>Oncorhynchus mykiss</u>	4.5	11	6, 7
	Coho Salmon <u>Oncorhynchus kisutch</u>	45.9		6
	Chinook Salmon <u>Oncorhynchus tshawytscha</u>	6.1		6
32	Goldfish <u>Crassius auratus</u>	32		8
4	Carp <u>Cyprinus carpio</u>	4		5
34	Fathead Minnow <u>Pimephales promelas</u>	34		8
21	Banded Killifish <u>Fundulus diaphanus</u>	21		5
27	Guppy <u>Poecilia reticulata</u>	27	9.1	5, 8
42	White Perch <u>Roccus americanus</u>	42		5
10	Striped Bass <u>Morone saxatilis</u>	10		5
7.4	Bluegill <u>Lepomis macrochirus</u>	7.4		7, 8
150	Fowler's Toad <u>Bufo woodhousii fowleri</u>	150		9
	Mysid Shrimp <u>Mysidopsis bahia</u>		6.2	

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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

July 7, 1996 Values first developed
August 21, 2000 New search for data. No new studies added.

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