OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Chemical Name: 1,3-Dichlorobenzene Developed by: Chris J. Skalski
CAS # 541-73-1 Data Retrieval Date: 9-05-97
Internal Code # 50 Fact Sheet Preparation Date: 3-01-06

ACUTE DATA

SPECIES	EC_{50}/LC_{50} (µg/l)	TEST TYPE[a]	DURATION (HOURS)	SMAV[b] (µg/l)	GMAV[b] (µg/l)	REFERENCE NUMBER
Cladoceran	28,000[f]	S,U	48	2,046	2,046	1
Daphnia magna	7,400[g]	S,M	48			2
	7,200[e]	S,M	48			2
	6,000[e]	S,M	48			2
	4,200	S,M	48			2
	4,230[c]	S,M	48			10
	5,980[e]	S,M	48			10
	7,430[c]	S,M	48			10
	7,230[e]	S,M	48			10
	1,700	S,M	48			3
	1,200	S,U	48			4
Bluegill	5,000[d]	S,U	96			5
Lepomis macrochirus						
Fathead Minnow	9,120	F,M	96	8,170	8,170	6
Pimephales promelas	8,030	F,M	96			7
	7,800	F,M	96			8
	7,800	F,M	96			9

[a] S = static; F= flow through; U = unmeasured; M = measured.
[b] SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.
[c] Duplicate data not used to calculate the SMAV.
[d] Not used in the calculation of an SMAV because the presence of a precipitate was indicated.
[e] Data not used to calculate the SMAV because the test organisms were fed during the test period.
[f] Data not used to calculate the SMAV since it varied by more than a factor of 10 from the remaining data for this species.
[g] Data not used to calculate the SMAV because the endpoint tested was an LC_{50} and an EC_{50} was also available from the same test.

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CHRONIC DATA

SPECIES	CHRONIC VALUE (µg/l)	METHOD	SMCV[a] (µg/l)	GMCV[a] (µg/l)	REFERENCE NUMBER
Cladoceran *Daphnia magna*	689-1,450 1,000	Life Cycle	1,000	1,000	10
Cladoceran *Daphnia magna*	690-1,450 1,000[b]	Life Cycle	1,000	1,000	2
Fathead Minnow *Pimephales promelas*	1,000-2,270 1,507[b]	Early Life Stage	1,507	1,507	11
Fathead Minnow *Pimephales promelas*	1,000-2,300 1,517	Early Life Stage	1,517	1,517	9

[a] SMCV = Species Mean Chronic Value; GMCV = Genus Mean Chronic Value.
[b] Duplicate data not used to calculate the final acute-chronic ratio.

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CALCULATION OF ACUTE AQUATIC VALUE (AAV)[a]

Data Requirement OAC 3745-1-36(A)(1)	SPECIES	GMAV (µg/l)
(c)	Fathead Minnow	8,170
(d)	*Daphnia magna*	2,046

Secondary Acute Factor (SAF) = 13.0

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= 2,046 ÷ 13.0
= 157 = 160 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= 157 ÷ 2
= 79 µg/l

CALCULATION OF CHRONIC AQUATIC VALUE (CAV)[a]

Experimentally determined Acute-Chronic Ratios (ACRs):

SPECIES	ACUTE VALUE (µg/l)	CHRONIC VALUE (µg/l)	ACUTE-CHRONIC RATIO	SPECIES MEAN ACR
Fathead Minnow *Pimephales promelas*	7,800	1,517	5.14	5.14
Cladoceran *Daphnia magna*	4,230	1,000	4.23	4.23

Secondary Acute-Chronic Ratio (SACR) = $\sqrt[3]{(5.14)(4.23)(18)} = 7.31$

Chronic Aquatic Value (CAV) = SAV ÷ SACR
= 158 ÷ 7.31
= 22 µg/l

[a]See Ohio Administrative Code 3745-1-36 effective February 22, 2002.