OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Chemical Name: 1,4-Dioxane Developed by: Chris J. Skalski
CAS # 123-91-1 Data Retrieval Date: 3-10-03
Internal Code # --- Fact Sheet Preparation Date: 3-11-03
Reviewed by: Bob Heitzman

ACUTE DATA

SPECIES	EC_{50}/LC_{50} (µg/l)	TEST TYPE[a]	DURATION (HOURS)	SMAV[b] (µg/l)	GMAV[b] (µg/l)	REFERENCE NUMBER
Bluegill *Lepomis macrochirus*	>10,000,000	S,U	96	>10,000,000	>10,000,000	1
Fathead Minnow	9,340,000	F,M	96	9,340,000	9,340,000	2
Pimephales promelas	9,550,000[c]	F,M	96			2

[a] S = static; F = flow through; M = measured; U = unmeasured.
[b] SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.
[c] Data not used to calculate the SMAV since cloudiness associated with a reaction between the test chemical and the test aparatus was reported and may have affected the toxicity results.

CHRONIC DATA

SPECIES	CHRONIC VALUE (µg/l)	SMCV[a] METHOD	GMCV[a] (µg/l)	REFERENCE (µg/l)	NUMBER

No Chronic Data

[a] SMCV = Species Mean Chronic Value; GMCV = Genus Mean Chronic Value.

REFERENCES

1. Dawson, G.W., A.L. Jennings, D. Drozdowski and E. Rider. 1977. The Acute Toxicity of 47 Industrial Chemicals to Fresh and Saltwater Fishes. J. Hazard. Mater. 1(4):303-318.

2. Geiger, D.L., L.T. Brooke and D.J. Call. 1990. Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 5. Center for Lake Superior Environmental Studies, Univ. of Wisconsin, Superior, WI: 332 p.

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CALCULATION OF ACUTE AQUATIC VALUE (AAV)[a]

Data Requirement OAC 3745-1-36(A)(1)	SPECIES	GMAV (µg/l)
(b)	Bluegill	>10,000,000
(c)	Fathead minnow	9,340,000

Secondary Acute Factor (SAF) =

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= ÷
= µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= ÷ 2
= 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

No Acute - to - Chronic Ratios Available

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

Chronic Aquatic Value (CAV) = SAV ÷ SACR
= ÷ 18
= µg/l

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