OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Chemical Name: 2-Butanone (methyl ethyl ketone) Developed by: Chris J. Skalski
CAS # 78-93-3 Data Retrieval Date: 9-05-97
Internal Code # None 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	5,091,000	S,U	48	5,091,000	5,091,000	1
Daphnia magna	>520,000[c]	S,U	48			2
Mosquitofish *Gambusia affinis*	5,600,000	S,U	96	5,600,000	5,600,000	3
Fathead Minnow *Pimephales promelas*	3,220,000	F,M	96	3,220,000	3,220,000	4

[a] S = static; R = renewal; U = unmeasured.
[b] SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.
[c] Data not used because definitive toxicity data exists for this species which is comparable to data for other species.

CHRONIC DATA

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

No Chronic Data

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

REFERENCES

1. Randall, T.L. and P.V. Knopp. 1980. Detoxification of Specific Organic Substances by Wet Oxidation. J. Water Pollut. Control Fed. 52(8):2117-2130.

2. LeBlanc, G.A. 1980. Acute Toxicity of Priority Pollutants to Water Flea (*Daphnia magna*). Bull. Environ. Contam. Toxicol. 24(5):684-691.

3. Wallen, I.E., W.C. Greer and R. Lasater. 1957. Toxicity to *Gambusia affinis* of Certain Pure Chemicals in Turbid Waters. Sewage Ind. Wastes 29(6):695-711.

4. Brooke, L.T., D.J. Call, D.L. Geiger and C.,E. Northcott. 1984. Acute Toxicities of Organic

Chemicals to Fathead Minnows (*Pimephales promelas*), Vol 1. Center for Lake Superior Environmental Studies, Univ. of Wisconsin, Superior, WI:414 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)	Mosquitofish	5,600,000
(c)	Fathead Minnow	3,220,000
(d)	*Daphnia magna*	5,091,000

Secondary Acute Factor (SAF) = 8.0

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= 3,220,000 ÷ 8.0
= 402,500 = 400,000 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= 402,500 ÷ 2
= 201,250 = 200,000 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
None Available				

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

Chronic Aquatic Value (CAV) = SAV ÷ SACR

= 402,500 ÷ 18
= 22,361 = 22,000 μg/l

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