OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Chemical Name: Butylbenzylphthalate Developed by: Chris J. Skalski
CAS # 85-68-7 Data Retrieval Date: 9-05-97
Internal Code # 28 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	3,700	S,U	48	2,197	2,197	1
Daphnia magna	1,000	S,U	48			5
	1,600	S,U	48			5
	1,600	S,U	48			5
	1,600	S,U	48			5
	1,800	S,U	48			5
	2,200	S,U	48			5
	2,900	S,U	48			5
	4,700	S,U	48			5
	2,100	S,U	48			5
	4,100	S,U	48			5
	1,800	S,U	48			6
	92,000[c]	S,U	48			2
Midge	1,600	S,U	48	1,600	1,600	6
Chironomus tentans						
Bluegill	43,000[c]	S,U	96	1,700	1,700	3
Lepomis macrochirus	1,700	S,U	96			1
Fathead Minnow	2,320	F,M	96	2,320	2,320	1
Pimephales promelas	5,300	S,U	96			1
	2,100	S,U	96			1
	1,500	F,U	96			4
Rainbow Trout	820	F,U	96	1,645	1,645	4
Oncorhynchus mykiss	3,300	S,U	96			1

[a] S = static; F= flow through; U = unmeasured; M = measured.
[b] SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.
[c] This value was not used in the calculation of the SMAV since it is not within an order of magnitude of the geometric mean of the other acute toxicity data for this species.

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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*	260-760 445	Life Cycle	445	445	1
Fathead Minnow *Pimephales promelas*	140-360 224	Early Life Stage	224	224	1

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

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CALCULATION OF ACUTE AQUATIC VALUE (AAV)[a]

Data Requirement OAC 3745-1-36(A)(1)	SPECIES	GMAV (µg/l)
(a)	Rainbow Trout	1,645
(b)	Bluegill	1,700
(c)	Fathead Minnow	2,320
(d)	*Daphnia magna*	2,197
(f)	Midge	1,600

Secondary Acute Factor (SAF) = 6.1

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= 1,600 ÷ 6.1
= 262 = 260 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= 262 ÷ 2
= 131 = 130 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
Cladoceran Daphnia magna	3,700	445	8.31	8.31
Fathead Minnow Pimephales promelas	2,320	224	10.36	10.36

Secondary Acute-Chronic Ratio (SACR) = $\sqrt[3]{(8.31)(10.36)(18)} = 11.6$

Chronic Aquatic Value (CAV) = SAV ÷ SACR
= 262 ÷ 11.6
= 22.6 = 23 µg/l

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