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	18,000[c]	S,U	--	41,331	41,331	1
Daphnia magna	18,000	S,U	48			2
	43,000	S,M	48			3
	43,000	S,M	48			3
	43,000	S,M	48			3
	43,000	S,M	48			3
	77,800[c]	S,M	48			4
	78,000[e]	S,M	48			5
	80,600[c]	S,M	48			4
	81,000	S,M	48			5
	170,000[d]	S,M	48			5
	174,000[c]	S,M	48			4
	186,000[c]	S,M	48			4
	190,000[d]	S,M	48			5
Bluegill	40,000	S,U	--	40,000	40,000	9
Lepomis macrochirus	40,200[c]	S,U	96			1
Fathead Minnow	81,600	F,M	96	81,633	81,633	6
Pimephales promelas	81,600	F,M	96			7
	81,700[c]	F,M	96			1
	81,700	F,M	96			8
American Flagfish	89,100	R,M	96	63,403	63,403	11
Jordanella floridae	45,117	R,M	96			11
Snail	170,000	F,M	--	170,000	170,000	10
Lymnaea staginalis						
Midge	147,000	F,M	48	147,000	147,000	12
Chironomus riparius						

[a] S = static; F = flow through; R = Renewal; M = measured; U = unmeasured.
[b] SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.
[c] Indicates duplicate data not used in calculating SMAV.
[d] The values of 170,000 and 190,000 are LC_{50}s. These authors also reported EC_{50} values of 78,000 and 81,000. As recommended in Stephan, C.E. et al., 1985, Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their Uses, the EC_{50} values were chosen over the LC_{50} values in the calculation of the SMAV.
[e] Data not used to calculate the SMAV since the test organisms were fed during the toxicity test.

CHRONIC DATA

SPECIES	CHRONIC VALUE (µg/l)	METHOD	SMCV[a] (µg/l)	GMCV[a] (µg/l)	REFERENCE NUMBER
Cladoceran *Daphnia magna*	(13,000-26,000) 18,385	Life Cycle	18,385	18,385	5
Fathead Minnow *Pimephales promelas*	(6,000-14,800) 9,423	Early Life Stage	9,423	9,423	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)
(b)	Bluegill	40,000
(c)	Flagfish	63,403
(d)	*Daphnia magna*	41,331
(f)	Midge	147,000
(g)	Snail	170,000

Secondary Acute Factor (SAF) = 6.1

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= 40,000 ÷ 6.1
= 6,557 = 6,600 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= 6,557 ÷ 2
= 3,279 =3,300 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*	81,000	18,385	4.41	4.41
Fathead Minnow *Pimephales promelas*	81,700	9,423	8.67	8.67

Secondary Acute-Chronic Ratio (SACR) = $\sqrt[3]{(4.41)(8.67)(18)} = 8.83$

Chronic Aquatic Value (CAV) = SAV ÷ SACR
= 6,557 ÷ 8.83
= 742.7 = 740 µg/l

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