OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Chemical Name: 2,4-Dinitrotoluene Developed by: Chris J. Skalski
CAS # 121-14-2 Data Retrieval Date: 10-10-01
Internal Code # 68 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	35,000	S,U	48	31,779	31,779	1
Daphnia magna	35,000	S,M	48			2
	26,200	S,U	48			3
Fathead Minnow	24,300	F,M	96	24,300	24,300	4
Pimephales promelas	31,000	S,M	96			2
	32,500	S,U				1
	32,800	S,U				5
Stickleback	6,300	R,M	96	6,300	6,300	6
Gasterosteus aculeatus						
Flagfish	22,000	R,U	96	22,000	22,000	7
Jordanella floridae						
Guppy	>16,000	R,U	96	>16,000	>16,000	7
Poecilia reticulata						

[a] S = static; F= flow through; U = unmeasured; M = measured; R = renewal.
[b] SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.

CHRONIC DATA

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

None Available

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

REFERENCES

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5. Bailey, H.C. and R.J. Spanggord. 1983. The Relationship Between the Toxicity and Structure of Nitroaromatic Chemicals. In: W.E. Bishop, R.D. Cardwell and B.B. Heidolph (Eds.), Aquatic Toxicology and Hazard Assessment, 6th Symposium, ASTM STP 802, Philadelphia, PA:98-107.

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CALCULATION OF ACUTE AQUATIC VALUE (AAV)[a]

Data Requirement OAC 3745-1-36(A)(1)	SPECIES	GMAV (μg/l)
(b)	Stickleback	6,300
(c)	Fathead Minnow	24,300
(d)	*Daphnia magna*	31,779

Secondary Acute Factor (SAF) = 8.0

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= 6,300 ÷ 8.0
= 787.5 = 790 μg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= 787.5 ÷ 2
= 394 = 390 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
= 787.5 ÷ 18
= 44 μg/l

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