OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Chemical Name: 3,5-Dinitroaniline Developed by: Chris J. Skalski
CAS # 618-87-1 Data Retrieval Date: 12-06-01
Internal Code # --- 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	14,700	S,U	48	8,957	8,957	1
Daphnia magna	3,760	S,M	48			2
	13,000	S,M	48			2
Channel Catfish	13,900	S,M	96	13,900	13,900	2
Ictalurus punctatus						
Bluegill	7,010	S,M	96	7,010	7,010	2
Lepomis macrochirus						
Rainbow Trout	2,990	S,M	96	2,990	2,990	2
Oncorhynchus mykiss						
Fathead Minnow	21,400	S,U	96	21,300	21,300	1
Pimephales promelas	21,200	S,M	96			2

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

CHRONIC DATA

SPECIES	CHRONIC VALUE (µg/l)	SMCV[a] METHOD	GMCV[a] (µg/l)	REFERENCE (µg/l)	NUMBER
Cladoceran	2,410-4,560	Life Cycle	3,315	3,315	2
Daphnia magna	3,315				
Rainbow Trout	370-650	Early Life Stage	490	490	2
Oncorhynchus mykiss	490				

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

REFERENCES

1. Pearson, J.G., J.P. Glennon, J.J. Barkley and J.W. Highfill. 1979. An Approach to the Toxicological Evaluation of a Complex Industrial Wastewater. In: L.L. Marking and R.A. Kimerle (Eds.), Aquatic Toxicology and Hazard Assessment, 2nd Symposium, ASTM STP 667, Philadelphia, PA:284-301.

2. Van der Schalie, W.H. 1983. The Acute and Chronic Toxicity of 3,5-Dinitroaniline, 1,3-Dinitrobenzene, and 1,3,5-Trinitrobenzene to Freshwater Aquatic Organisms. Technical Report 8305, U.S. Army Medical Bioengineering Research and Development Laboratory, Frederick, MD: 53 p.

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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	2,990
(b)	Bluegill	7,010
(c)	Channel Catfish	13,900
(d)	*Daphnia magna*	8,957

Secondary Acute Factor (SAF) = 7.0

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= 2,990 ÷ 7.0
= 427 = 430 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= 427 ÷ 2
= 214 = 210 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*	6,991	3,315	2.11	2.11
Rainbow Trout *Oncorhynchus mykiss*	2,990	490	6.10	6.10

Secondary Acute-Chronic Ratio (SACR) = $\sqrt[3]{(2.11)(6.10)(18)} = 6.14$

Chronic Aquatic Value (CAV) = SAV ÷ SACR
= 427 ÷ 6.14
= 70 µg/l

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