OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Chemical Name: 4-Nitrotoluene Developed by: Chris J. Skalski
CAS # 99-99-0 Data Retrieval Date: 10-11-01
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	12,100	S,U	48	10,664	10,664	1
Daphnia magna	7,500	S,U	48			2
	19,000	S,U	48			3
	7,500	S,U	48			1
Fathead Minnow	49,900	S,U	96	49,800	49,800	1
Pimephales promelas	49,700	S,U	96			4

[a] S = static; U = unmeasured.
[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

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. Canton, J.H., W. Slooff, H.J. Koll, J. Struys, T.J.M. Gouw, R.C.C. Wegman and G.J. Piet. 1985. Toxicity, Biodegradability and Accumulation of a Number of Cl/N-Containing Compounds for Classification and Establishing Water Quality Criteria. Regul. Toxicol. Pharmacol. 5:123-131.

3. Maas-Diepeveen, J.L and C.J. Van Leeuwen. 1986. Aquatic Toxicity of Aromatic Nitro Compounds and Anilines to Several Freshwater Species. Laboratory for Ecotoxicology, Institute for Inland Water Management and Waste Water Treatment, Report No. 86-42: 10 p.

4. 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)
(c)	Fathead Minnow	49,800
(d)	*Daphnia magna*	10,664

Secondary Acute Factor (SAF) = 13.0

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
= 10,664 ÷ 13.0
= 820 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
= 820 ÷ 2
= 410 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
= 820 ÷ 18
= 46 µg/l

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