

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

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Chemical Name: Propylene glycol Developed by: Chris J. SkalskiCAS # 57-55-6 Data Retrieval Date: 10-19-00Internal Code # --- Fact Sheet Preparation Date: 3-01-06ACUTE DATA

<u>SPECIES</u>	<u>EC₅₀/LC₅₀</u> <u>(μg/l)</u>	<u>TEST TYPE^a</u>	<u>DURATION</u> <u>(HOURS)</u>	<u>SMAV^b</u> <u>(μg/l)</u>	<u>GMAV^b</u> <u>(μg/l)</u>	<u>REFERENCE</u> <u>NUMBER</u>
Cladoceran <i>Daphnia magna</i>	>10,000,000	S,U	48	>10,000,000	>10,000,000	1
Cladoceran <i>Ceriodaphnia dubia</i>	1,020,000 ^c	S,U	48	16,614,863	16,614,863	2
	18,340,000	S,U	48			2
	15,052,000	S,M	48			3
Fathead Minnow <i>Pimephales promelas</i>	710,000 ^c	S,U	96	43,583,554	43,583,554	2
	55,770,000	S,U	96			2
	34,060,000	R,M	96			3

^a S = static; R =renewal; U = unmeasured.^b SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.^c Formulation data; not used to determine the SMAV.CHRONIC DATA

<u>SPECIES</u>	<u>CHRONIC VALUE</u> <u>(μg/l)</u>	<u>METHOD</u>	<u>SMCV^a</u> <u>(μg/l)</u>	<u>GMCV^a</u> <u>(μg/l)</u>	<u>REFERENCE</u> <u>NUMBER</u>
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None Available

^a SMCV = Species Mean Chronic Value; GMCV = Genus Mean Chronic Value.REFERENCES

1. Kuhn, R., M. Pattard, K. Pernak and A. Winter. 1989. Results of the Harmful Effects of Selected Water Pollutants (Anilines, Phenols, Aliphatic Compounds) to *Daphnia magna*. Water Res. 23(4):495-499.
2. Pillard, D.A. 1995. Comparative Toxicity of Formulated Glycol Deicers and Pure Ethylene and Propylene Glycol to *Ceriodaphnia dubia* and *Pimephales promelas*. Environ. Toxicol. Chem. 14(2):311-315.
3. Cornell, J.S., D.A. Pillard and M.T. Hernandez. 2000. Comparative Measures of the Toxicity of Component Chemicals in Aircraft Deicing Fluid. Environ. Toxicol. Chem. 19(6):1465-1472.

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CALCULATION OF ACUTE AQUATIC VALUE (AAV)^a

<u>Data Requirement</u> <u>OAC 3745-1-36(A)(1)</u>	<u>SPECIES</u>	<u>GMAV</u> <u>(µg/l)</u>
(c)	Fathead Minnow	43,583,554
(d)	<i>Ceriodaphnia dubia</i>	16,614,863

Secondary Acute Factor (SAF) = 13.0

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
 = 16,614,863 ÷ 13.0
 = 1,278,066 = 1,300 mg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
 = 1,278,066 ÷ 2
 = 639,033 = 640 mg/l

CALCULATION OF CHRONIC AQUATIC VALUE (CAV)^a

Experimentally determined Acute-Chronic Ratios (ACRs):

<u>SPECIES</u>	<u>ACUTE VALUE</u> <u>(µg/l)</u>	<u>CHRONIC VALUE</u> <u>(µg/l)</u>	<u>ACUTE-CHRONIC</u> <u>RATIO</u>	<u>SPECIES MEAN</u> <u>ACR</u>
None Available				

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

Chronic Aquatic Value (CAV) = SAV ÷ SACR
 = 1,278,066 ÷ 18
 = 71,004 = 71 mg/l

^aSee Ohio Administrative Code 3745-1-36 effective February 22, 2002.