

OHIO EPA SURFACE WATER QUALITY SCREENING VALUE FACT SHEET

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Chemical Name: Benzo(a)pyrene Developed by: Chris J. SkalskiCAS # 50-32-8 Data Retrieval Date: 4-17-01Internal Code # 16 Fact Sheet Preparation Date: 3-01-06Reviewed by: Bob HeitzmanACUTE 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>	40	S,U	24	40	14	1
Cladoceran <i>Daphnia pulex</i>	5	S,M	96	5		2
Midge <i>Chironomus thummi</i>	>5	S,U	24	>5	>5	3

^a S = static; U = unmeasured; M = measured; R = renewal.^b SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.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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No Chronic Data Available

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

1. Wernersson, A.S. and G. Dave. 1997. Phototoxicity Identification by Solid Phase Extraction and Photoinduced Toxicity to *Daphnia magna*. Arch. Environ. Contam. Toxicol. 32(3):268-273.
2. Trucco, R.G., F.R. Engelhardt and B. Stacey. 1983. Toxicity, Accumulation, and Clearance of Aromatic Hydrocarbons in *Daphnia pulex*. Environ. Pollut. Ser. A. Ecol. Biol. 31(3):191-202.
3. Lydy, M.J., K.A. Bruner, D.M. Fry and S.W. Fisher. 1990. Effects of Sediment and the Route of Exposure on the Toxicity and Accumulation of Neutral Lipophilic and Moderately Water-Soluble Metabolizable. In: W.G. Landis and W.H. Van der Schalie (Eds), Aquatic Toxicology and Risk

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CALCULATION OF SCREENING ACUTE AQUATIC VALUE (AAV)^a

<u>Data Requirement</u> OAC 3745-1-36(A)(1)	<u>SPECIES</u>	<u>GMAV</u> ($\mu\text{g/l}$)
(d)	<i>Daphnia sp.</i>	14
(f)	Midge	>5

Secondary Acute Factor (SAF) = 13.0

Secondary Acute Value (SAV) = Lowest GMAV \div SAF
 = 14 \div 13.0
 = 1.0769 = 1.1 $\mu\text{g/l}$

Tier II Acute Aquatic Value (AAV) = SAV \div 2
 = 1.0769 \div 2
 = 0.54 $\mu\text{g/l}$

CALCULATION OF SCREENING CHRONIC AQUATIC VALUE (CAV)^a

Experimentally determined Acute-Chronic Ratios (ACRs):

<u>SPECIES</u>	<u>ACUTE VALUE</u> ($\mu\text{g/l}$)	<u>CHRONIC VALUE</u> ($\mu\text{g/l}$)	<u>ACUTE-CHRONIC</u> <u>RATIO</u>	<u>SPECIES MEAN</u> <u>ACR</u>
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No Experimentally-Derived ACRs Available

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

Chronic Aquatic Value (CAV) = SAV \div SACR
 = 1.0769 \div 18
 = 0.060 $\mu\text{g/l}$

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^aSee Ohio Administrative Code 3745-2-04(C) and 3745-1-36 effective February 22, 2002.