

## OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

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Chemical Name: Fluoranthene      Developed by: Chris J. SkalskiCAS # 206-44-0      Data Retrieval Date: 4-17-01Internal Code # 78      Fact Sheet Preparation Date: 3-01-06Reviewed by: Bob HeitzmanACUTE DATA

<u>SPECIES</u>	<u>EC<sub>50</sub>/LC<sub>50</sub></u> <u>(µg/l)</u>	<u>TEST TYPE<sup>a</sup></u>	<u>DURATION</u> <u>(HOURS)</u>	<u>SMAV<sup>b</sup></u> <u>(µg/l)</u>	<u>GMAV<sup>b</sup></u> <u>(µg/l)</u>	<u>REFERENCE</u> <u>NUMBER</u>
Cladoceran <i>Daphnia magna</i>	321,000 <sup>c</sup> 105.7	S,U S,U	48 48	105.7	105.7	1 6
Cladoceran <i>Ceriodaphnia dubia</i>	45	S,M	48	45	45	2
Channel Catfish <i>Ictalurus punctatus</i>	36	S,M	96	36	36	3
Bluegill <i>Lepomis macrochirus</i>	4,000 <sup>e</sup>	S,U	96			4
Rainbow Trout <i>Oncorhynchus mykiss</i>	187	S,U	96	187	187	7
Fathead Minnow <i>Pimephales promelas</i>	95	S,U	96	95	95	7
Midge <i>Chironomus thummi</i>	44	S,U	48	44	44	7
Midge <i>Chironomus tentans</i>	>250	S,U	48	>250		6
Amphipod <i>Gammarus minus</i>	32	S,U	96	32	32	7
Snail <i>Physa heterostropha</i>	137	S,U	96	137	137	7
Opossum Shrimp <sup>d</sup> <i>Mysidopsis bahia</i>	40	S,U	96			5

<sup>a</sup> S = static; U = unmeasured; M = measured.<sup>b</sup> SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.<sup>c</sup> Data not used because it varies by over a factor of 10 from the other data for this species.<sup>d</sup> Data for this saltwater species is used in the determination of the secondary acute-chronic ratio but not in the determination of the secondary acute value or the acute aquatic value.<sup>e</sup> Data not used to calculate an SMAV because the author indicated the presence of a precipitate during testing.

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<u>SPECIES</u>	<u>CHRONIC VALUE</u> ( $\mu\text{g/l}$ )	<u>SMCV<sup>b</sup></u> <u>METHOD</u>	<u>GMCV<sup>b</sup></u> ( $\mu\text{g/l}$ )	<u>REFERENCE</u> ( $\mu\text{g/l}$ )	<u>NUMBER</u>
Opossum Shrimp <i>Mysidopsis bahia</i>	12-22 16.25	Life Cycle	16.25	16.25	5

<sup>a</sup> SMCV = Species Mean Chronic Value; GMCV = Genus Mean Chronic Value.

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CALCULATION OF ACUTE AQUATIC VALUE (AAV)<sup>a</sup>

<u>Data Requirement</u> <u>OAC 3745-1-36(A)(1)</u>	<u>SPECIES</u>	<u>GMAV</u> <u>(µg/l)</u>
(a)	Rainbow Trout	187
(b)	Channel Catfish	36
(c)	Fathead Minnow	95
(d)	<i>Ceriodaphnia dubia</i>	45
(e)	Amphipod	32
(f)	Midge	44
(g)	Snail	137

Secondary Acute Factor (SAF) = 4.3  
 Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF  
 = 32 ÷ 4.3  
 = 7.4 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2  
 = 7.4 ÷ 2  
 = 3.7 µg/l

CALCULATION OF CHRONIC AQUATIC VALUE (CAV)<sup>a</sup>

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>
Opossum Shrimp <i>Mysidopsis bahia</i>	40	16.25	2.46	2.46

Secondary Acute Chronic Ratio (SACR) =  $\sqrt[3]{(2.46)(18)(18)} = 9.27$

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$$\begin{aligned}\text{Chronic Aquatic Value (CAV)} &= \text{SAV} \div \text{SACR} \\ &= 7.4 \div 9.27 \\ &= 0.80 \mu\text{g/l}\end{aligned}$$

<sup>a</sup>See Ohio Administrative Code 3745-1-36 effective February 22, 2002.