

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Page 1 of 2

Chemical Name: Bromomethane (Methyl bromide)Developed by: Chris J. SkalskiCAS # 74-83-9 Data Retrieval Date: 9-05-97Internal Code # 90 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	2,000	S,M	48	2,000	2,000	1
<i>Daphnia magna</i>	2,200 ^d	S,M	48			1
Bluegill	11,000	S,U	96	11,000	11,000	2
<i>Lepomis macrochirus</i>						
Guppy	600	R,M	96	600	600	1
<i>Poecilia reticulata</i>	800 ^d	R,M	96			1
Medaka	700 ^c	R,M	96			1
<i>Oryzias latipes</i>						

^a S = static; R = renewal; U = unmeasured; M = measured.^b SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.^c Data for this nonresident 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.^d Data not used to calculate the SMAV since there was a corresponding EC₅₀ from the same test which was calculated.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>
Guppy	100 - 320	Early Life Stage	179	179	3
<i>Poecilia reticulata</i>	179				
Medaka	320 - 560	Early Life Stage	423	423	3
<i>Oryzias latipes</i>	423				

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

1. Canton, J.H., R.C.C. Wegman, E.A.M. Mathijssen-Spiekman and J.Y. Wammes. 1980. Hydrobiological Toxicological Research with Methylbromide. Rep. No. 105/80, Natl. Inst. Public Health Environ. Hyg.:4 p.
2. Dawson, G.W., A.L. Jennings, D. Drozdowski and E. Rider. 1977. The Acute Toxicity of 47 Industrial Chemicals to Fresh and Saltwater Fishes. J. Hazard. Mater. 1(4):303-318.
3. Wester, P.W., J.H. Canton and J.A.M.A. Dormans. 1988. Pathological Effects in Freshwater Fish *Poecilia reticulata* (Guppy) and *Oryzias latipes* (Medaka) Following Methyl Bromide and Sodium Bromide Exposure.

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Page 2 of 2

Chemical Name: Bromomethane (Methyl bromide) Developed by: Chris J. Skalski

CAS # 74-83-9 Data Retrieval Date: 9-05-97

Internal Code # 90 Fact Sheet Preparation Date: 3-01-06

Aquat. Toxicol. 12(4):323-344.

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Page 3 of 2

Chemical Name: Bromomethane (Methyl bromide)Developed by: Chris J. SkalskiCAS # 74-83-9 Data Retrieval Date: 9-05-97Internal Code # 90 Fact Sheet Preparation Date: 3-01-06CALCULATION 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>
(b)	Bluegill	11,000
(c)	Guppy	600
(d)	<i>Daphnia magna</i>	2,000

Secondary Acute Factor (SAF) = 8.0

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
 = 600 ÷ 8.0
 = 75 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
 = 75 ÷ 2
 = 38 µg/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>
Guppy <i>Poecilia reticulata</i>	600	179	3.35	3.35
Medaka <i>Oryzias latipes</i>	700	423	1.65	1.65

Secondary Acute-Chronic Ratio (SACR) = $\sqrt[3]{(3.35)(1.65)(18)} = 4.63$

Chronic Aquatic Value (CAV) = SAV ÷ SACR
 = 75 ÷ 4.63
 = 16 µg/l

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