



## TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

### ANTIMONY

CAS RN: 7440-36-0

#### Standard

The procedures described in the Tier II methodology indicate that, except possibly where a locally important species is very sensitive, aquatic organisms should not be affected unacceptably if the four (4) day average concentration of antimony does not exceed 80 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 720 µg/L more than once every three (3) years on the average.

#### Calculations

##### Acute Aquatic Life:

$$\text{SAV} = \text{lowest GMAV}/\text{SAF}$$

$$\begin{aligned}\text{Lowest GMAV} &= 18,800 \text{ } \mu\text{g/L} \\ \text{SAF} &= 13.0\end{aligned}$$

$$\text{SAV} = 18,800/13.0 = 1446 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 1446/2 = \mathbf{720 \text{ } \mu\text{g/L}}$$

### Chronic Aquatic Life:

$$SCC = SAV/SACR$$

$$SACR = 18$$

$$SCC = 1446/18 = \mathbf{80 \mu g/L}$$

## Data

Table 1. GMAVs and SMAVs for antimony

<u>Genus Mean Acute Value (<math>\mu\text{g/L}</math>)</u>	<u>Species</u>	<u>Species Mean Acute Value (<math>\mu\text{g/L}</math>)</u>	<u>Acute- Chronic Ratio</u>	<u>Reference Number</u>
18,800	Cladoceran <u>Daphnia magna</u>	18,800		1
678,000	Tubificid Worm <u>Tubifex tubifex</u>	678,000		2

## References

1. Kimball, G. 1985. The effects of lesser known metals and one organic on fathead minnows (Pimephales promelas) and Daphnia magna. Manuscript, Dept. of Entomology, Fisheries and Wildlife, University of Minnesota, Minnesota, MN: 88 p.
2. Khangarot, B.S. 1991. Toxicity of metals to a freshwater tubificid worm, Tubifex tubifex (Muller). Bull. Environ. Contam. Toxicol. 46: 906-912.

## Acronyms/Abbreviations

CAS RN	Chemical Abstract Service Registry Number
--------	--

K <sub>ow</sub>	Octanol-Water Partition Coefficient
P (superscript)	Predicted value
SAV	Secondary Acute Value
GMAV	Genus Mean Acute Value
SAF	Secondary Acute Factor
SMC	Secondary Maximum Concentration
SCC	Secondary Continuous Concentration
SACR	Secondary Acute-Chronic Ratio
FT	Flow-through
S	Static
U	Unmeasured
M	Measured
EVISTRA	Evaluation and Interpretation of Suitable Test Results in AQUIRE (EPA quality checking method/database)

## Revision History

March 12, 1999      Values first developed  
August 22, 2000      New search for data. No new studies added.

## Contact Information

David B. Kallander  
Water Quality Standards Section  
Indiana Department of Environmental Management  
100 North Senate Ave., P.O. Box 6015  
Indianapolis, IN 46206-6015  
(317) 233-2472  
Email: [dkalland@dem.state.in.us](mailto:dkalland@dem.state.in.us)