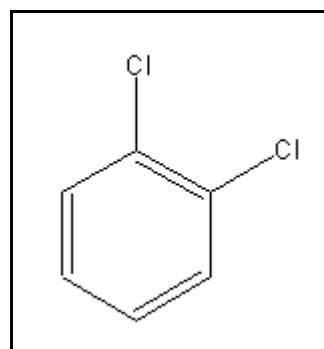




## TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

### 1,2-DICHLOROBENZENE

CAS RN: 95-50-1  
Water Solubility: 0.008396 g/100 mL  
Log  $K_{ow}$ : 3.433



#### 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 1,2-dichlorobenzene does not exceed 14  $\mu\text{g/L}$  more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 130  $\mu\text{g/L}$  more than once every three (3) years on the average.

#### Calculations

Acute Aquatic Life:

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

$$\begin{aligned}\text{Lowest GMAV} &= 1580 \mu\text{g/L} \\ \text{SAF} &= 6.1\end{aligned}$$

$$\text{SAV} = 1580/6.1 = 259 \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 259/2 = \mathbf{130 \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCV = SAV/SACR$$

$$SACR = 18$$

$$SCV = 259/18 = \mathbf{14 \mu g/L}$$

Notes:

Canton et al. (1985) was not used since the Daphnid data point from this study varied from LeBlanc (1980) by a factor greater than 10.

**Data**

Table 1. GMAVs and SMAVs for 1,2-dichlorobenzene

<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>
12,296	Bluegill <u>Lepomis macrochirus</u>	5,600		1
	Bluegill <u>Lepomis macrochirus</u>	27,000		4
1,580	Rainbow Trout <u>Oncorhynchus mykiss</u>	1,580		2
12,000	Midge <u>Tanytarsus dissimilis</u>	12,000		2
2,400	Cladoceran <u>Daphnia magna</u>	2,400		6
23,233	Fathead Minnow <u>Pimephales promelas</u>	57,000		3
	Fathead Minnow <u>Pimephales promelas</u>	9,470		5

## References

1. Buccafusco, R.J., S.J. Ells, and G.A. LeBlanc 1981. Acute toxicity of priority pollutants to bluegill (*Lepomis macrochirus*). *Bull. Environ. Contam. Toxicol.* 24(5): 446-452.
2. Call, D.T., L.J. Brooke, N. Ahmad, et al. 1983. Toxicity and metabolism studies with EPA priority pollutants and related chemicals in freshwater organisms. U.S. EPA 600/383-095.
3. Curtis, M.W., T.L. Copeland, and C.H. Ward 1979. The acute toxicity of 47 industrial chemicals to fresh and saltwater fishes. *J. Haz. Mat.* 1(4): 303-318.
4. Dawson, G.W., A.L. Jennings, D. Drozdowski, et al. 1977. The acute toxicity of 47 chemicals to fresh and saltwater fishes. *J. Haz. Mat.* 1: 303-318.
5. Geiger, D.L., S.H. Poirier, L.T. Brook et al. 1986. Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 3. Center for Lake Superior Environmental Studies, University of Wisconsin, Superior, WI. 328 pp.
6. LeBlanc, G.A. 1980. Acute toxicity of priority pollutants to *Daphnia magna*. *Bull. Environ. Contam. Toxicol.* 24(5): 684-691.

## 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

December 30, 1998 Values first developed  
 April 24, 2001 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)