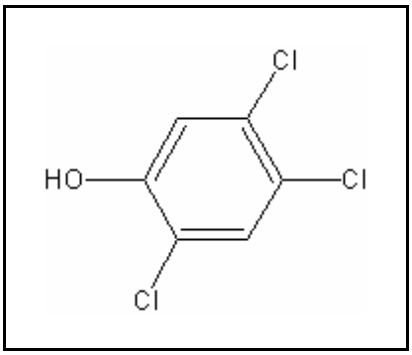
Indiana Department of Environmental Management
Office of Water Quality - Water Quality Standards Section

TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

2,4,5-TRICHLOROPHENOL

CAS RN: 95-94-3
Water Solubility: 0.12 g/100 mL
Log K_{ow}: 3.70^{P}



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 2,4,5-trichlorophenol does not exceed 1.9 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 17 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

SAV = lowest GMAV/SAF

Lowest GMAV = 450 µg/L

SAF = 13.0

SAV = 450/13.0 = 34.62 µg/L

SMC = SAV/2 = 34.62/2 = **17 µg/L**

Chronic Aquatic Life:

SCV = SAV/SACR

SACR = 18

SCV = 34.62/18 = 1.9 **µg/L**

Data

Table 1. GMAVs and SMAVs for 2,4,5-trichlorophenol

Genus Mean Acute Value (µg/L)	Species	Species Mean Acute Value (µg/L)	Acute-Chronic Ratio	Reference Number
1,470	Cladoceran Daphnia magna	900		1
	Cladoceran Daphnia cucullata	2,400		2
450	Bluegill Lepomis macrochirus	450		3

References

1. Kuhn, R.M., Pattard, K.D. Pernak, et al. 1989. Results of the harmful effects of selected water pollutants (anilines, phenols, aliphatic compounds) to Daphnia magna. Water Res. 23(4): 495-499.

2. LeBlanc, G.A. 1980. Acute toxicity of priority pollutants to water flea (Daphnia magna). Bull. Environ. Contam. Toxicol. 24(5): 684-691.

3. Buccafusco, R.J., S.J. Ells and G.A. Blanc 1981. Acute toxicity of priority pollutants to bluegill (Lepomis macrochirus). Bull. Environ. Contam. Toxicol. 26(4): 446-452.

Acronyms/Abbreviations

CAS RN	Chemical Abstract Service Registry Number
K_{ow}	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

September 25, 2001 Values first developed

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