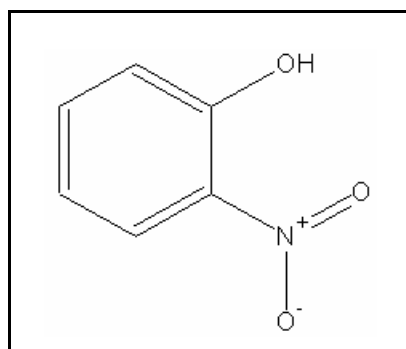




## TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

### 2-NITROPHENOL

CAS RN: 88-75-5  
Water Solubility: 0.21 g/100 mL  
Log  $K_{ow}$ :



#### 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-nitrophenol does not exceed 73  $\mu\text{g/L}$  more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 650  $\mu\text{g/L}$  more than once every three (3) years on the average.

#### Calculations

##### Acute Aquatic Life:

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

$$\text{Lowest GMAV} = 17,000 \mu\text{g/L}$$

$$\text{SAF} = 13$$

$$\text{SAV} = 17,000/13 = 1,308 \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 1,308/2 = \mathbf{650 \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCV = SAV/SACR$$

$$SACR = 18$$

$$SCV = 1,308/18 = 73 \mu\text{g/L}$$

**Data**

Table 1. GMAVs and SMAVs for 2-nitrophenol

<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>
17,000	Cladoceran <u>Daphnia magna</u>	17,000		1
160,000	Fathead Minnow <u>Pimephales promelas</u>	160,000		2

**References**

1. Kuhn,R., M.Pattard, K.Pernak, and A.Winter 1989. Results of the Harmful Effects of Selected Water Pollutants (Anilines, Phenols, Aliphatic Compounds) to Daphnia magna Water Res. 23(4):495-499
2. Geiger,D.L., D.J.Call, and L.T.Brooke 1988. Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas), Vol. 4. Center for Lake Superior Environmental Studies, University of Wisconsin, Superior, WI:355 p.

## 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

April 13, 1999      Values first developed  
May 15, 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)