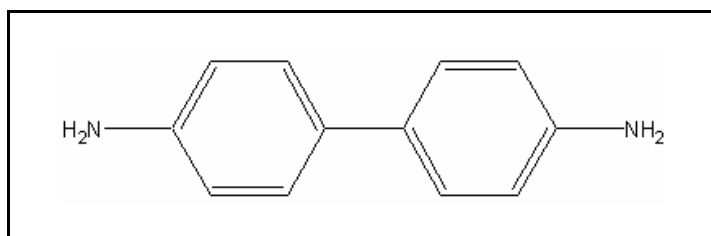




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

BENZIDINE

CAS RN: 92-87-5
Water Solubility: <0.1 g/100 mL



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 benzidine does not exceed 1.5 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 14 µg/L more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\begin{aligned}\text{Lowest GMAV} &= 600 \text{ } \mu\text{g/L} \\ \text{SAF} &= 21.9\end{aligned}$$

$$\text{SAV} = 600/21.9 = 27.40 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 27.40/2 = \mathbf{14 \text{ } \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCC = SAV/SACR$$

$$SACR = 18$$

$$SCC = 27.40/18 = \mathbf{1.5 \mu g/L}$$

Data

Table 1. GMAVs and SMAVs for benzidine

<u>Genus Mean Acute Value ($\mu\text{g/L}$)</u>	<u>Species</u>	<u>Species Mean Acute Value ($\mu\text{g/L}$)</u>	<u>Acute- Chronic Ratio</u>	<u>Reference Number</u>
600	Cladoceran <u>Daphnia magna</u>	600		1

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.

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 17, 1997 Values first developed
August 22, 2000 New search for data. No new studies added.

Contact Information

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