

TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES FOR ETHYLBENZENE

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 ethylbenzene does not exceed 0.11 mg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 1.0 mg/L more than once every three (3) years on the average.

Calculations:

Acute Aquatic Life:

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

$$\text{Lowest GMAV} = 14 \text{ mg/L}$$

$$\text{SAF} = 7.0$$

$$\text{SAV} = 14/7.0 = 2 \text{ mg/L}$$

$$\text{SMC} = \text{SAV}/2 = 2/2 = \mathbf{1 \text{ mg/L}}$$

Chronic Aquatic Life:

$$\text{SCV} = \text{SAV}/\text{SACR}$$

$$\text{SACR} = 18$$

$$\text{SCV} = 2 \text{ mg}/18 = \mathbf{0.11 \text{ mg/L}}$$

Notes:

NONE

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Table 1. GMAVs and SMAVs for ethylbenzene

<u>Genus Mean Acute Value (mg/L)</u>	<u>Species</u>	<u>Species Mean Acute Value (mg/L)</u>	<u>Acute- Chronic Ratio</u>	<u>Reference Number</u>
114.9	Bluegill <u>Lepomis macrochirus</u>	114.9		1,4
24.22	Fathead Minnow <u>Pimephales promelas</u>	24.22		2,5
75	Cladoceran <u>Daphnia magna</u>	75		3
14	Rainbow Trout <u>Oncorhynchus mykiss</u>	14		4
210	Channel Catfish <u>Ictalurus punctatus</u>	210		4
94.4	Goldfish <u>Carassius auratus</u>	94.4		5
97.1	Guppy <u>Poecilia reticulata</u>	97.1		5

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References:

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2. Geiger, D.H., S.H. Poirer, L.T. Brooks 1986. Acute toxicities for Organic Chemicals to Fathead Minnows (Pimephales promelas). Vol III. Center for Lake Superior Environmental Studies, University of Wisconsin-Superior.
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4. Mayer, F.L. and M.R. Ellersieck 1986. Manual of acute toxicity: Interpretation and data base for 410 chemicals and 66 species of freshwater animals. Fish and Wildlife Service. Resource Publication 160.
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