AL CRIT-00099 -00106 H/H CRIT-00133 -00134 BAF CRIT-00790

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:

SAV = lowest GMAV/SAF

Lowest GMAV = 14 mg/L
SAF = 7.0

SAV = 14/7.0 = 2 mg/L

SMC = SAV/2 = 2/2 = **1 mg/L**

Chronic Aquatic Life:

SCV = SAV/SACR

SACR = 18

SCV = 2 mg/18 = **0.11 mg/L**

Notes:

NONE

Table 1. GMAVs and SMAVs for ethylbenzene

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

References:

1. 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.

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.

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

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.

5. Pickering, O.H. and C.H. Henderson 1966. Acute toxicity of some important petrochemicals to fish. J. Water Pollut. Control Fed. 38(9): 1419-1429.

Last Modified:
January 17, 1997