

CRIT-00959  
-00960

## TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES FOR TRICHLOROETHYLENE

### 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 trichloroethylene does not exceed 260 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 2,300 µg/L more than once every three (3) years on the average.

### Calculations:

#### Acute Aquatic Life:

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

$$\text{Lowest GMAV} = 24,000 \text{ } \mu\text{g/L}$$

$$\text{SAF} = 5.2$$

$$\text{SAV} = 24,000/5.2 = 4,615 \text{ } \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 4,615/2 = \mathbf{2,300 \text{ } \mu\text{g/L}}$$

#### Chronic Aquatic Life:

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

$$\text{SACR} = 18$$

$$\text{SCV} = 4,615/18 = \mathbf{260 \text{ } \mu\text{g/L}}$$

### Notes:

NONE

Table 1. GMAVs and SMAVs for trichloroethylene

<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>
42,365	Fathead Minnow <u>Pimephales promelas</u>	40,700		1
	Fathead Minnow <u>Pimephales promelas</u>	44,100		7
45,000	Bluegill <u>Lepomis macrochirus</u>	45,000		2
56,684	Cladoceran <u>Daphnia magna</u>	97,000		3
46,820	Cladoceran <u>Daphnia magna</u>	42,000		3
	Cladoceran <u>Daphnia magna</u>	56,000		3
	Cladoceran <u>Daphnia magna</u>	18,000		4
	Cladoceran <u>Daphnia pulex</u>	45,000		3
	Cladoceran <u>Daphnia cucullata</u>	57,000		3
132,000	Oligochaete <u>Tubifex sp.</u>	132,000		5
56,000	Snail <u>Lymnaea stagnalis</u>	56,000		5
24,000	Amphipod <u>Gammarus</u>	24,000		5
3,100,000	American Flagfish <u>Jordanella floridae</u>	3,100,000		6

## References:

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6. Smith, A.D., A. Bharath, C. Mallard 1991. The acute and chronic toxicity of ten chlorinated organic compounds to the American Flagfish (*Jordanella floridae*). Arch. Environ. Toxicol. 20: 94-102.
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