

TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES FOR
DI-N-BUTYL PHTHALATE

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 di-butyl phthalate does not exceed 7.7 µg/L more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 34 µg/L more than once every three (3) years on the average.

Calculations:

Acute Aquatic Life:

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

$$\text{Lowest GMAV} = 350 \mu\text{g/L}$$

$$\text{SAF} = 5.2$$

$$\text{SAV} = 350/5.2 = 67.31 \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 67.31/2 = \mathbf{34 \mu\text{g/L}}$$

Chronic Aquatic Life:

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

$$\text{SACR} = 8.7 \text{ (geometric mean of 18, 18, and 2)}$$

$$\text{SCV} = 67.31/8.7 = \mathbf{7.7 \mu\text{g/L}}$$

Calculation of ACR's

Fathead Minnows

$$\text{NOEC} = 264 \mu\text{g/L}$$

$$\text{LOEC} = 625 \mu\text{g/L}$$

$$\text{CV} = \text{Geometric Mean of 264 and 625} = 406$$

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$$\text{ACR} = 775.6/406 = 2$$

Notes:

NONE

Table 1. GMAVs and SMAVs for di-n-butyl phthalate

<u>Genus Mean Acute Value (µg/L)</u>	<u>Species</u>	<u>Species Mean Acute Value (µg/L)</u>	<u>Acute- Chronic Ratio</u>	<u>Reference Number</u>
1,448	Bluegill <u>Lepomis macrochirus</u>	1,448		1,5
4,386	Cladoceran <u>Daphnia magna</u>	4,386		2,6
1,119	Fathead Minnow <u>Pimephales promelas</u>	1,119	19	3,4,5
2,348	Rainbow Trout <u>Onchorhynchus mykiss</u>	2,348		5
1,157	Channel Catfish <u>Ictalurus punctatus</u>	1,157		5
2,100	Scud <u>Gammarus pseudolimnaeus</u>	2,100		5
10,000	Crayfish <u>Orconectes nais</u>	10,000	5	
350	Yellow Perch <u>Yellowsis perchis</u>	350		5
760	Midge <u>Chironomous riparius</u>	760		7

References:

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