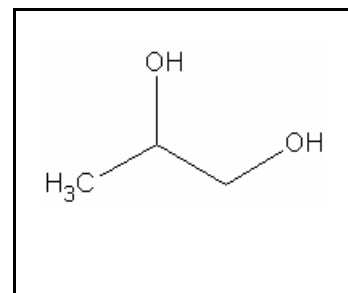




TIER II ACUTE AND CHRONIC AQUATIC LIFE VALUES

PROPYLENE GLYCOL

CAS RN: 57-55-6
Water Solubility: ≥ 10 g/100 mL at 21 C
Log K_{ow} : -1.060^P



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 propylene glycol does not exceed 78,000 $\mu\text{g/L}$ more than once every three (3) years on the average and if the one (1) hour average concentration does not exceed 700,000 $\mu\text{g/L}$ more than once every three (3) years on the average.

Calculations

Acute Aquatic Life:

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

$$\text{Lowest GMAV} = 18,340,000 \mu\text{g/L}$$

$$\text{SAF} = 13.0$$

$$\text{SAV} = 18,340,000/13.0 = 1,410,769 \mu\text{g/L}$$

$$\text{SMC} = \text{SAV}/2 = 1,410,769/2 = \mathbf{700,000 \mu\text{g/L}}$$

Chronic Aquatic Life:

$$SCV = SAV/SACR$$

$$SACR = 18$$

$$SCV = 1,410,769/18 = \mathbf{78,000 \mu g/L}$$

Data

Table 1. GMAVs and SMAVs for propylene glycol

<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>
18,340,000	Cladoceran <u>Ceriodaphnia dubia</u>	18,340,000		1
55,770,000	Fathead Minnow <u>Pimephales promelas</u>	55,770,000		1

References

1. Pillard, D.A. 1995. Comparative toxicity of formulated glycol deicers and pure ethylene and propylene glycol to Ceriodaphnia dubia and Pimephales promelas. Environ. Toxicol. Chem. 14(2): 311-315.

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

December 23, 1998 Values first developed
September 19, 2001 New search for data. No studies added.

Contact Information

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