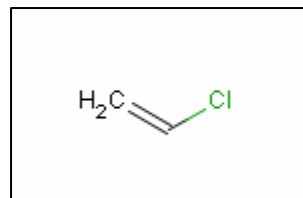




## Lake Michigan Basin Water Quality Standards

### VINYL CHLORIDE

CAS: 75-01-4  
Water Solubility: 0.11 g/100 mL at 25°C  
Log K<sub>ow</sub>: 1.36



#### Derived Criteria

Aquatic Life: Where no standard is applicable for a chemical substance within waters of the Lake Michigan Basin, acute and chronic numeric values may be calculated pursuant to 35 IAC 302.540. Tier II methodology (35 IAC 302.563-565) indicate that, except possibly where a locally important species is very sensitive, aquatic organisms should not be adversely affected providing the four (4) day average concentration of vinyl chloride does not exceed 931 µg/L, and if 8,380 µg/L is not exceeded at any time.

#### Aquatic Life Calculations

##### Acute Aquatic Life:

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

$$\text{LMAATV} = 218 / 26 = \mathbf{8,380 \mu\text{g/L}}$$

##### Chronic Aquatic Life:

$$\text{LMCATV} = \text{SAV} * 2 / \text{SACR}$$

$$\text{LMCATV} = 8.38 * 2 / 18 = \mathbf{931 \mu\text{g/L}}$$

Table 1. GMAVs and SMAVs for vinyl chloride, referenced toxicity values are denoted in superscript

Species	GMAV (mg/L)	SMAV (mg/L)	ACR	Concentration (mg/L)
Water flea <u>Daphnia magna</u>	521	521	-	521 <sup>1</sup>
Fathead minnow <u>Pimephales promelas</u>	218	218	-	218 <sup>2</sup>

## References

1. RMT, Inc. 2000. Findings of the toxicity testing for vinyl chloride as part of the situation specific response plan for ACL exceedences in groundwater. Report to Michigan DEQ
  - Species Name: Daphnia magna, water flea
  - Data Value: 521,000 ug/L  
Dose metric: LC50
2. RMT, Inc. 2000. Findings of the toxicity testing for vinyl chloride as part of the situation specific response plan for ACL exceedences in groundwater. Report to Michigan DEQ
  - Species Name: Pimephales promelas, fathead minnow
  - Data Value: 218,000 ug/L  
Dose metric: LC50

## Derivation History

Derived June 20, 2006

## Contact Information

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