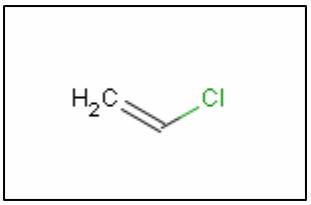
Illinois Environmental Protection Agency
Bureau of Water – Water Quality Standards Section

Lake Michigan Basin Water Quality Standards

VINYL CHLORIDE

CAS:	75-01-4
Water Solubility:	0.11 g/100 mL at 25°C
Log K_{ow}:	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:

LMAATV = lowest GMAV / SAF

LMAATV = 218 / 26 = **8,380 µg/L**

Chronic Aquatic Life:

LMCATV = SAV * 2 / SACR

LMCATV = 8.38 * 2 / 18 = **931 µg/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 Daphnia magna	521	521	-	521[1]
Fathead minnow Pimephales promelas	218	218	-	218[2]

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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