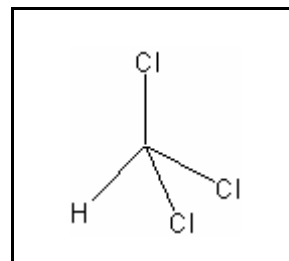




## TIER I HUMAN HEALTH NONCANCER CRITERIA

### CHLOROFORM

CAS RN:	67-66-3
Water Solubility:	7,950 mg/L
Log K <sub>ow</sub> :	1.952 <sup>P</sup>
Risk Associated Dose:	1.639 x 10 <sup>-3</sup> mg/kg/day
Carcinogenicity Weight-of-Evidence Classification:	Class B2; Probable human Carcinogen



### Standard

The human health noncancer chloroform criterion for drinking water sources is 350 µg/L. The human health noncancer criterion for nondrinking water sources is 11,000 µg/L.

### Calculations

#### Bioaccumulation Factor:

BAF predicted based on Log K<sub>ow</sub> and measured BCF (from Stephan 1993)

Log K<sub>ow</sub> = 1.952 (CLOGP program), K<sub>ow</sub> = 89.54, BCF = 6, Percent lipid = 4.8

Trophic level 3 FCM = 1.005; trophic level 4 FCM = 1.000

$$f_{fd} = 1/(1+(0.00000024 \text{ kg/L})(K_{ow})) = 1.0$$

$$\text{Baseline BAF}_{T3} = (1.005)[(6/1.0)-1](1/0.048) = 104.7$$

$$\text{Baseline BAF}_{T4} = (1.000)[(6/1.0)-1](1/0.048) = 104.2$$

$$\text{Human health BAF}_{T3} = [(104.7)(0.0182)+1](1.0) = 2.906$$

$$\text{Human health BAF}_{T4} = [(104.2)(0.0310)+1](1.0) = 4.230$$

### Acceptable Daily Exposure:

From the IRIS database:

Critical Effect: decreased growth rate, food consumption, and organ weights

$$\text{ADE} = \frac{\text{LOAEL}}{\text{UF}} = \frac{12.9 \text{ mg/kg-day}}{1000} = 0.0129 \text{ mg/kg/d}$$

### Calculation of Criteria:

$$\begin{aligned} \text{Non Drinking Water HNC} &= [(0.0129)(70)(0.8)]/0.01+[(0.0036)(2.906)+(0.0114)(4.230)] \\ &= \mathbf{11,000 \mu\text{g/L}} \end{aligned}$$

$$\begin{aligned} \text{Drinking Water HNC} &= [(0.0129)(70)(0.8)]/2+[(0.0036)(2.906)+(0.0114)(4.230)] \\ &= \mathbf{350 \mu\text{g/L}} \end{aligned}$$

## **References**

1. Stephen, C.E. 1993. Derivation of Proposed Human Health and Wildlife Bioaccumulation Factors for the Great Lakes Initiative. Environmental Research Laboratory, Office of Research and Development, U.S. EPA, Duluth, MN.
2. USEPA 1991. Integrated Risk Information System (IRIS database) chemical file for chloroform (67-66-3).

## **Acronyms**

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ADE	Acceptable Daily Exposure
BAF	Bioaccumulation Factor
CAS RN	Chemical Abstract Service Registry Number
FCM	Food Chain Multiplier
IRIS	Integrated Risk Information System
K <sub>ow</sub>	Octanol-Water Partition Coefficient
LOAEL	Lowest observed adverse effect level
NOAEL	No observed adverse effect level
P (superscript)	Predicted value
UF	Uncertainty factor

## Revision History

April 11, 2000 - Criteria first developed

## Contact Information

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