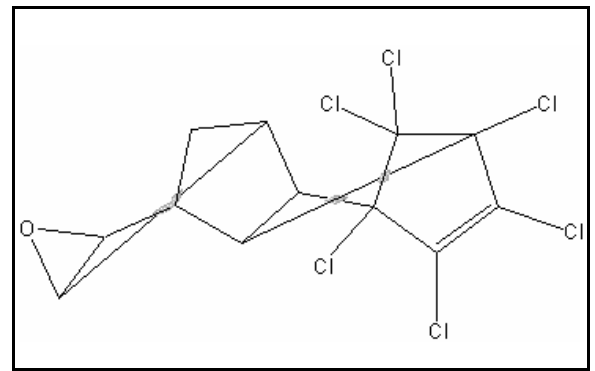




TIER II HUMAN HEALTH NONCANCER VALUES

ENDRIN

CAS RN:	72-20-8
Water Solubility:	0.26 mg/L
Log K_{ow} :	4.56
Reference Dose:	0.1 mg/kg/day
Carcinogenicity Weight-of-Evidence Classification:	Class D; Not classifiable



Standard

The human health noncancer endrin value for drinking water sources is 0.187 $\mu\text{g/L}$. The human health noncancer value for nondrinking water sources is 0.193 $\mu\text{g/L}$.

Calculations

Bioaccumulation Factor:

BAF predicted based on Log K_{ow} and measured BCF (from Stephan 1993)

Log K_{ow} = 4.56 (RPLC), K_{ow} = 36,308, BCF = 4,214, Percent lipid = 3.73

Trophic level 3 FCM = 1.95; trophic level 4 FCM = 1.459

$$f_{fd} = 1/(1+(0.00000024 \text{ kg/L})(K_{ow})) = 0.9914$$

$$\text{Baseline BAF}_{T3} = (1.950)[(4214/0.9914)-1](1/0.0373) = 222,170$$

$$\text{Baseline BAF}_{T4} = (1.007)[(4214/0.9914)-1](1/0.0373) = 166,229$$

$$\text{Human health BAF}_{T3} = [(222,170)(0.0182)+1](0.9914) = 4,010$$

$$\text{Human health BAF}_{T4} = [(166,229)(0.0310)+1](0.9914) = 5,110$$

Acceptable Daily Exposure:

From the IRIS database:

$$\text{ADE} = \frac{\text{NOAEL}}{\text{UF}} = \frac{0.025 \text{ mg/kg-day}}{100} = 0.00025 \text{ mg/kg/d}$$

Calculation of Criteria:

$$\begin{aligned} \text{Non Drinking Water HNV} &= [(0.00025)(70)(0.8)]/0.01 + [(0.0036)(4,010) + (0.0114)(5,110)] \\ &= \mathbf{0.193 \mu\text{g/L}} \end{aligned}$$

$$\begin{aligned} \text{Drinking Water HNV} &= [(0.00025)(70)(0.8)]/2 + [(0.0036)(4,010) + (0.0114)(5,110)] \\ &= \mathbf{0.187 \mu\text{g/L}} \end{aligned}$$

References

1. USEPA 1991. Integrated Risk Information System (IRIS database) chemical file endrin (72-20-8).
2. Veith, G.D., N.M. Austin, and R.T. Morris 1979. A rapid method for estimating Log P for organic chemicals. Water Res. 13: 43-47.

Acronyms/Abbreviations

ADE	Acceptable Daily Exposure
BAF	Bioaccumulation Factor
CAS RN	Chemical Abstract Service Registry Number
FCM	Food Chain Multiplier
IRIS	Integrated Risk Information System
K _{ow}	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 18, 2000 – Values first developed

Contact Information

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