Chemical Name: Hexachlorocyclohexane (technical grade) Developed by: Bob Heitzman, John Estenik
CAS # 608-73-1 IRIS Data Retrieval Date: 2-12-98
Internal Code # ___ Fact Sheet Preparation Date: 2-12-98

# CRITERIA SUMMARY

| Lake Erie Basin | | | |
|---|---|---|---|
| Tier I HNC (μg/l) | | Tier I HCC (μg/l) | |
| Drinking | Nondrinking | Drinking | Nondrinking |
| ID | ID | 0.013 | 0.014 |

# EXPOSURE AND TOXICITY DATA

Human health trophic level 3 bioaccumulation factor ($BAFHH_{TL3}$) = 1,412 l/kg (USEPA 1995)
Human health trophic level 4 bioaccumulation factor ($BAFHH_{TL4}$) = 2,000 l/kg (USEPA 1995)
Acceptable daily exposure (ADE) = Not available (IRIS)
Carcinogen assessment: Class B2; probable human carcinogen (IRIS, last revised 07/01/93)
Cancer slope factor ($q_1$*) = 1.8 per mg/kg/day (IRIS, last revised 07/01/93)
Body weight of average human (BW) = 70 kg (OAC 3745-1-38)
Relative source contribution factor (RSC) = 0.8 (OAC 3745-1-38)
Per capita water consumption (WC) = 2.0 l/day for drinking water criteria (OAC 3745-1-38)
= 0.01 l/day for nondrinking water criteria (OAC 3745-1-38)
Mean consumption of trophic level three fish ($FC_{TL3}$) = 0.0036 kg/day (OAC 3745-1-38)
Mean consumption of trophic level four fish ($FC_{TL4}$) = 0.0114 kg/day (OAC 3745-1-38)

Risk associated dose (RAD) = Risk level ÷ $q_1$*
= 1E-5 ÷ 1.8 per mg/kg/day
= 5.556E-6 mg/kg/day

# REFERENCES

Integrated Risk Information System. USEPA Office of Research and Development, National Center for Environmental Assessment.

Ohio Administrative Code rule 3745-1-38: Methodologies for Development of Human Health Criteria and Values for the Lake Erie Drainage Basin. Effective 10/31/97.

USEPA. 1995. Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors. EPA-820-B-95-005. March 1995. p. H-3.

# CALCULATION OF HUMAN NONCARCINOGENIC CRITERION (HNC) [a]

$$HNC = \frac{ADE \times BW \times RSC}{WC + [(FC_{TL3} \times BAFHH_{TL3}) + (FC_{TL4} \times BAFHH_{TL4})]}$$

Insufficient data (no ADE).

# CALCULATION OF HUMAN CARCINOGENIC CRITERION (HCC) [a]

$$HCC = \frac{RAD \times BW}{WC + [(FC_{TL3} \times BAFHH_{TL3}) + (FC_{TL4} \times BAFHH_{TL4})]}$$

$$\text{Drinking Water HCC} = \frac{5.556E\text{-}6 \text{ mg/kg/day} \times 70 \text{ kg}}{2.0 \text{ l/day} + [(0.0036 \text{ kg/day} \times 1{,}412 \text{ l/kg}) + (0.0114 \text{ kg/day} \times 2{,}000 \text{ l/kg})]}$$

$$= 1.3E\text{-}5 \text{ mg/l} = 0.013 \text{ } \mu\text{g/l}$$

$$\text{Nondrinking Water HCC} = \frac{5.556E\text{-}6 \text{ mg/kg/day} \times 70 \text{ kg}}{0.01 \text{ l/day} + [(0.0036 \text{ kg/day} \times 1{,}412 \text{ l/kg}) + (0.0114 \text{ kg/day} \times 2{,}000 \text{ l/kg})]}$$

$$= 1.4E\text{-}5 \text{ mg/l} = 0.014 \text{ } \mu\text{g/l}$$

[a]See Ohio Administrative Code 3745-1-38 effective October 31, 1997.