



TIER I HUMAN HEALTH NONCANCER CRITERIA

CHROMIUM VI

CAS RN:	18540-29-9
Water Solubility:	
Log K _{ow} :	
Reference Dose:	0.008 mg/kg/day
Carcinogenicity Weight-of-Evidence Classification:	Class D; Not Classifiable (Class A; Known human carcinogen via inhalation)

Standard

The human health noncancer chromium VI criterion for drinking water sources is 230 µg/L. The human health noncancer criterion for nondrinking water sources is 25,000 µg/L.

Calculations

BAF for inorganics is equal to the BCF (from Stephan 1993)

$$\text{BCF} = 0.60; \text{FCM} = 1.0$$

$$\text{Human health BAF}_{T3} = 0.60$$

$$\text{Human health BAF}_{T4} = 0.60$$

Acceptable Daily Exposure:

From the IRIS database:

$$\text{ADE} = \frac{\text{NOAEL}}{\text{UF}} = \frac{2.5 \text{ mg/kg-day}}{300} = 0.008333 \text{ mg/kg/d}$$

Calculation of Criteria:

$$\text{Non Drinking Water HNC} = [(0.008333)(70)(0.8)]/0.01 + [(0.0036)(0.60) + (0.0114)(0.60)]$$
$$= 25,000 \mu\text{g/L}$$

$$\text{Drinking Water HNC} = [(0.008333)(70)(0.8)]/2 + [(0.0036)(0.60) + (0.0114)(0.60)]$$
$$= 230 \mu\text{g/L}$$

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 1998. Integrated Risk Information System (IRIS database) chemical file for chromium VI (18540-29-9).

Acronyms

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
RPLC	Reverse-phase Liquid Chromatography
UF	Uncertainty factor

Revision History

August 19, 1997 - Criteria first developed

April 11, 2000 – Fact sheet updated. ADE corrected to 1998 IRIS value.

Contact Information

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