TERRESTRIAL TOXICITY AND AESTHETICS VALUES

Chemical Name: lead
CAS No. 7439-92-1
Literature Review Date: 8/3/07
Derived By: S. Briggs
Reviewed By: D. Bush DB
Verification Date: 9/30/2007

HNV Tier Status: 1
WV Tier Status:
HCV Tier Status:

		Drinking Water	Non-Drinking Water
HUMAN HEALTH	HNV SCREENING LEVEL	14 ug/L	190 ug/L
	HCV		
	POTENCY		
	HH-BAF-TL.3	10 L/kg	
	HH-BAF-TL.4	10 L/kg	
	RfD (ADE)	0.000428571 mg/kg/d	
WILDLIFE HEALTH	WV		
	WV-BAF-TL.3		
	WV-BAF-TL.4		
	RfD		
AESTHETICS	TASTE THRESHOLD		
	ODOR THRESHOLD		

Comments:

HUMAN NONCANCER VALUE WORKSHEET

Chemical Name: lead CAS No. 7439-92-1

Developed By: S. Briggs

Reviewed By: D. Bush DB Verification Date: 9/30/2007

Key Study:

The lead action level of 0.015 mg/l was promulgated by EPA (1991) and is used because certain effects occur at low lead concentrations such that there is essentially no lower threshold for lead related adverse effects. No additional relative source contribution was used because the action level is considered protective of children and considers other sources of exposure.

ADE = (0.015 mg/L) (2.0 l/d) (1/70 kg) = 4.28571×10^{-4} mg/kg/d

$$HNV_{dw} = \frac{(4.28571 \times 10^{-4} \text{ mg/kg/d})\ (70 \text{ kg})}{2.0 \text{ l/d} + [(.0036 \text{ kg/d} \times 10 \text{ l/kg}) + (.0114 \text{ kg/d} \times 10 \text{ l/kg})]} = \mathbf{0.013953474\ mg/L}$$

14 ug/L

$$HNV_{non\text{-}dw} = \frac{(4.28571 \times 10^{-4} \text{ mg/kg/d})\ (70 \text{ kg})}{0.01 \text{ l/d} + [(.0036 \text{ kg/d} \times 10 \text{ l/kg}) + (.0114 \text{ kg/d} \times 10 \text{ l/kg})]} = \mathbf{0.187499812\ mg/L}$$

190 ug/L

BIOACCUMULATION FACTOR WORKSHEET

Chemical Name: lead CAS No. 7439-92-1
BAF Derived By: S. Briggs Literature Review Date: 08/03/07
BAF Reviewed By: D. Bush DB Verification Date: 9/30/07

HH-BAF-TL.3: 10 L/kg **WL-BAF-TL.3:**
HH-BAF-TL.4: 10 L/kg **WL-BAF-TL.4:**

I. FIELD BAFs, BSAFs, or LABORATORY BCFs

Ref #	BAF, BSAF, or BCF	Value	Species	Exposure Duration (Days)	Tissue Type	Tissue Lipid (%)	Steady State Tissue Conc.	Water or Sed. (BSAF) Conc.
1.)	BAF	10.07*	Bluegill	lifetime	muscle	na	6.1 ug/g	20.1 ug/l

10.07* = (6.1 ug/g whole body dry wt x 0.2 x 0.166 x 1000g/kg)/20.1 ug/l
see notes below in Justification for more information about this calculation

Final BAF: 10.07
Justification: BAF was converted from whole body BAF to muscle BAF by multiplying by a conversion factor of 0.166 per Stephan (1993). whole body Pb concentration = Dry Weight Basis, therefore use dry:wet tissue weight conversion factor of 0.2 per Stephan et al.(1985)

II. LOG Kow VALUES

Ref #	Meas./Calc. Log Kow	Method	Value	Ref #	Meas./Calc. Log Kow	Method	Value

Final Log Kow: na
Justification:

Food Chain Multipliers
FCM-TL.3:
FCM-TL.4: