TIER II HUMAN HEALTH NONCANCER VALUES

ALUMINUM

CAS RN: 7429-90-5
Water Solubility:
Log $K_{ow}$:
Reference Dose: 0.1 mg/kg/day
Carcinogenicity Weight-of-Evidence Classification: None

Standard

The human health noncancer aluminum value for drinking water sources is 970 µg/L. The human health noncancer value for nondrinking water sources is 4500 µg/L.

Calculations

Bioaccumulation Factor:
BAF for inorganics is equal to the BCF (BCF from Cleveland, et al. 1991)

$$BAF = 36; FCM = 1.0$$

Human health $BAF_{T3} = 36$

Human health $BAF_{T4} = 36$

Acceptable Daily Exposure:
From Domingo et al. 1987, and Katz et al. 1984:

\[
\text{ADE} = \frac{\text{LOAEL}}{\text{UF}} = \frac{44 \text{ mg/kg-day}}{1000} = 0.044 \text{ mg/kg/d}
\]

Calculation of Criteria:

**Non Drinking Water HNV**

\[
\frac{(0.044)(70)(0.8)}{0.01} + \left[\frac{(0.0036)(36) + (0.0114)(36)}{2}\right] = 4500 \mu g/L
\]

**Drinking Water HNV**

\[
\frac{(0.044)(70)(0.8)}{2} + \left[\frac{(0.0036)(36) + (0.0114)(36)}{2}\right] = 970 \mu g/L
\]

**References**


**Acronyms/Abbreviations**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADE</td>
<td>Acceptable Daily Exposure</td>
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<tr>
<td>BAF</td>
<td>Bioaccumulation Factor</td>
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<tr>
<td>CAS RN</td>
<td>Chemical Abstract Service Registry Number</td>
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<tr>
<td>FCM</td>
<td>Food Chain Multiplier</td>
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<td>IRIS</td>
<td>Integrated Risk</td>
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<tr>
<td>Symbol</td>
<td>Description</td>
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<tr>
<td>$K_{ow}$</td>
<td>Octanol-Water Partition Coefficient</td>
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<tr>
<td>LOAEL</td>
<td>Lowest observed adverse effect level</td>
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<tr>
<td>NOAEL</td>
<td>No observed adverse effect level</td>
</tr>
<tr>
<td>P (superscript)</td>
<td>Predicted value</td>
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<tr>
<td>UF</td>
<td>Uncertainty factor</td>
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</tbody>
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**Revision History**

February 4, 1997 - Values first developed  

**Contact Information**

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