Chemical Name: cis-1,2-Dichloroethene  
CAS: 156-59-2  
Synonyms: cis-1,2-Dichloroethylene

Acute Non-Cancer Health Risk Limit (nHRL_{acute}) = Not Derived (Insufficient data)

Short-Term Non-Cancer Health Risk Limit (nHRL_{short-term}) = 70 ug/L

\[
= (\text{Reference Dose, mg/kg/d}) \times (\text{Relative Source Contribution}) \times (\text{Conversion Factor}) \\
= (0.097 \text{ mg/kg/d}) \times (0.2) \times (1000 \text{ ug/mg}) \\
= 0.289 \text{ L/kg-d})
\]

= 67 rounded to 70 ug/L

Reference Dose: 0.097 mg/kg/d (laboratory animal)  
Source of toxicity value: MDH, 2007  
Point of Departure: 97 mg/kg/d (NOAEL) (McCauley et al., 1995)  
Human Equivalent Dose Adjustment: None (inadequate information)  
Total uncertainty factor: 1000  
UF allocation: 10 interspecies, 10 intraspecies, 10 database deficiencies  
Critical effect(s): Decreased hematocrit levels  
Co-critical effect(s): Taste aversion, increased relative liver weight (however, histopathology was negative at all dose levels therefore this effect was not considered adverse)  
Additivity endpoint(s): Hematologic (blood) system  
Secondary effect(s): Increased relative kidney weight

Subchronic Non-Cancer Health Risk Limit (nHRL_{subchronic}) = nHRL_{short-term} = 70 ug/L

\[
= (\text{Reference Dose, mg/kg/d}) \times (\text{Relative Source Contribution}) \times (\text{Conversion Factor}) \\
= (0.032 \text{ mg/kg/d}) \times (0.2) \times (1000 \text{ ug/mg}) \\
= 0.077 \text{ L/kg-d})
\]

= 83 rounded to 80 ug/L
Reference Dose: 0.032 (laboratory animal)
Source of toxicity value: MDH, 2007
Point of Departure: 32 (NOAEL) (McCauley et al., 1995)
Human Equivalent Dose Adjustment: None (inadequate information)
Total uncertainty factor: 1000
UF allocation: 10 interspecies, 10 intraspecies, 10 database deficiencies
Critical effect(s): Decreased hematocrit levels
Co-critical effect(s): Decreased body weight, increased relative liver weight (however, histopathology was negative at all dose levels therefore this effect was not considered adverse)
Additivity endpoint(s): Hematologic (blood) system
Secondary effect(s): Significantly decreased body weight

The Subchronic nHRL must be protective of the short-term exposures that occur within the subchronic period and therefore, the Subchronic nHRL is set equal to the Short-term nHRL of 70 ug/L. Additivity Endpoints: Hematological (Blood) system.

Chronic Non-Cancer Health Risk Limit (nHRL\textsubscript{chronic}) = 50 ug/L

\[
= (\text{Reference Dose, mg/kg/d}) \times (\text{Relative Source Contribution}) \times (\text{Conversion Factor})
\]
\[
= (0.011 \text{ mg/kg/d}) \times (0.2) \times (1000 \text{ ug/mg})
\]
\[
= 51 \text{ rounded to 50 ug/L}
\]

Reference Dose: 0.011 (laboratory animal)
Source of toxicity value: MDH, 2007
Point of Departure: 32 (NOAEL) (McCauley et al., 1995)
Human Equivalent Dose Adjustment: None (inadequate information)
Total uncertainty factor: 3000
UF allocation: 10 interspecies, 10 intraspecies, 10 database deficiencies, 3 subchronic-to-chronic
Critical effect(s): Decreased hematocrit levels
Co-critical effect(s): Decreased body weight, increased relative liver weight (however, histopathology was negative at all dose levels therefore this effect was not considered adverse)
Additivity endpoint(s): Hematologic (blood) system
Secondary effect(s): Significantly decreased body weight
Cancer Health Risk Limit (cHRL) = Not Applicable

Cancer classification: D; not classifiable as to human carcinogenicity
Slope factor: NA (EPA 1995)
Source of slope factor: NA
Tumor site(s): NA

Volatile: Yes (highly volatile)

Summary of changes since 1993/1994 HRL promulgation:
The chronic nHRL is 1.4-fold lower than the 1993/94 nHRL (70 ug/L) as the result of: 1) utilizing more recent intake rates which incorporate higher intake rates during early life and 2) rounding to one significant digit. Short-term and subchronic nHRLs (70 ug/L) are new values.

Summary of toxicity testing for health effects identified in the Health Standards Statute:

<table>
<thead>
<tr>
<th>Tested?</th>
<th>Endocrine</th>
<th>Immunotoxicity</th>
<th>Development</th>
<th>Reproductive</th>
<th>Neurotoxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: Even if testing for a specific health effect was not conducted for this chemical, information about that effect might be available from studies conducted for other purposes. Most chemicals have been subject to multiple studies in which researchers identify a dose where no effects were observed, and the lowest dose that caused one or more effects. A toxicity value based on the effect observed at the lowest dose across all available studies is considered protective of all other effects that occur at higher doses.

-- indicates that no specific tests for that effect were conducted, and that effect was not observed as a secondary effect in any other study used in the HRL evaluation.

Comments on extent of testing or effects:
1 CNS depression was observed at the upper range of the doses tested in the critical study, and the HRL was developed to be protective against these effects.

References:

