<table>
<thead>
<tr>
<th>1</th>
<th>CAS No.: 1761-71-3</th>
<th>Substance: Bis (4-aminocyclohexyl) methane</th>
</tr>
</thead>
</table>

Chemical Substances Control Law Reference No.: 3-2272, 4-101 (Diaminodicyclohexylmethane)
PRTR Law Cabinet Order No.: Structural Formula: 
Molecular Formula: C₁₃H₂₆N₂
Molecular Weight: 210.36

1. General information

   The aqueous solubility of this substance is \(1.23 \times 10^{-4}\) mg/L (20°C, pH=11.6), the partition coefficient (1-octanol/water) (log \(K_{ow}\)) is 2.03 (25°C), and the vapor pressure is \(4.1 \times 10^{-4}\) mmHg (=0.055 Pa) (20°C). Biodegradability (aerobic degradation) is characterized by a BOD degradation rate of less than 10% (28 days). Furthermore, most aliphatic amines are stable towards hydrolysis.

   The major use of this substance is as a raw material for methylene bis (4,1-cyclohexylene) = diisocyanate. The production and import quantity in fiscal 2014 was less than 1,000 t.

2. Exposure assessment

   Because this substance is not classified as a Class 1 Designated Chemical Substance under the PRTR Law, release and transfer quantities could not be obtained.

   Predictions of proportions distributed to individual media by using a Mackay-type level III fugacity model indicate that if equal quantities are released to the atmosphere, water bodies, and soil, the proportion distributed to soil would be largest.

   The predicted environmental concentration (PEC), which indicates exposure to aquatic organisms, was less than around 0.014 µg/L for both public freshwater bodies and seawater.

3. Initial assessment of ecological risk

   With regard to acute toxicity, the following reliable data were obtained: a 72-h EC\(_{50}\) of 2,164,000 µg/L for growth inhibition in the green algae *Desmodesmus subspicatus*, a 48-h EC\(_{50}\) of 6,840 µg/L for immobilization in the crustacean *Daphnia magna*, and a 96-h LC\(_{50}\) of more than 100,000 µg/L for the fish species *Leuciscus idus* (golden orfe).

   Accordingly, based on these acute toxicity values and an assessment factor of 100, a predicted no effect concentration (PNEC) of 68 µg/L was obtained.

   Reliable data for chronic toxicity could not be obtained.

   The value of 68 µg/L obtained from the acute toxicity to the crustacean was used as the PNEC for this substance.

   The PEC/PNEC ratio is less than 0.0002 for both freshwater bodies and seawater; accordingly, further work is considered unnecessary at this time.
4. Conclusions

<table>
<thead>
<tr>
<th>Species</th>
<th>Acute/chronic</th>
<th>Endpoint</th>
<th>Assessment Coefficient</th>
<th>Predicted no effect concentration PNEC (µg/L)</th>
<th>Exposure Assessment</th>
<th>PEC/PNEC ratio</th>
<th>Judgment based on PEC/PNEC ratio</th>
<th>Assessment result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crustacean Daphnia magna</td>
<td>Acute</td>
<td>EC₅₀ immobilization</td>
<td>100</td>
<td>68</td>
<td>Freshwater</td>
<td>&lt;0.014</td>
<td>&lt;0.0002</td>
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<td>○</td>
</tr>
</tbody>
</table>

Hazard Assessment (Basis for PNEC)

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Exposure Assessment

- Analysis

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Judgment

- No need for further work at present.

- Risk judgments:
  - ○: No need for further work
  - ▲: Requiring information collection
  - ■: Candidates for further work
  - ×: Impossibility of risk characterization
  - (○): Although risk to human health could not be confirmed, collection of further information would not be required.
  - (▲): Further information collection would be required for risk characterization.

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- Ecological risk

- Conclusions

- Judgment

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