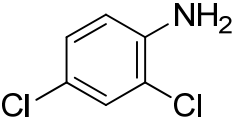


3	CAS No.: 554-00-7	Substance: 2,4-Dichloroaniline
<p>Chemical Substances Control Law Reference No.: 3-261 (Dichloroaniline) PRTR Law Cabinet Order No.: 1-156 (Dichloroaniline) Molecular Formula: C₆H₅Cl₂N Structural Formula: Molecular Weight: 162.02</p> <div style="text-align: center;">  </div>		
<p>1. General information</p> <p>The aqueous solubility of this substance is 450 mg/L (20°C), the partition coefficient (1-octanol/water) (log K_{ow}) is 2.91, and the vapor pressure is 0.011 mmHg (=1.5 Pa) (20°C). Biodegradability (aerobic degradation) is characterized by a BOD degradation rate of 0% (average value), and bioaccumulation is judged to be non-existent or low. The substance does not have any hydrolyzable groups.</p> <p>Dichloroaniline is designated as a Class 1 Designated Chemical Substance under the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law). The main uses of this substance are as a dyestuff and pigment intermediate. The production and import quantity of dichloroaniline in fiscal 2013 was less than 1,000 t. The production and import category under the PRTR Law is 1 to < 100 t.</p> <hr/> <p>2. Exposure assessment</p> <p>Total release to the environment of dichloroaniline in fiscal 2013 under the PRTR Law was approximately 0 t. In addition, approximately 0.52 t was transferred to waste materials and 0.021 t was transferred to sewage. The sole source of reported releases was the chemical industry. Predictions of proportions distributed to individual media by using a Mackay-type level III fugacity model indicated that if equal quantities were released to the atmosphere, water bodies, and soil, the proportion distributed to soil would be largest.</p> <p>The predicted environmental concentration (PEC), which indicates exposure to aquatic organisms, was reported to be less than around 0.05 µg/L for both public freshwater bodies and seawater.</p> <hr/> <p>3. Initial assessment of ecological risk</p> <p>With regard to acute toxicity, the following reliable data were obtained: a 48-h EC₅₀ of 3,380 µg/L for growth inhibition in the green algae <i>Pseudokirchneriella subcapitata</i>, a 48-h LC₅₀ of 500 µg/L for the crustacean <i>Daphnia magna</i>, a 96-h LC₅₀ of 5,670 µg/L for the fish species <i>Danio rerio</i> (zebrafish), and a 48-h IGC₅₀ of 44,900 µg/L for reproductive inhibition in the ciliate protozoan <i>Tetrahymena pyriformis</i>. Accordingly, based on these acute toxicity values and an assessment factor of 100, a predicted no effect concentration (PNEC) of 5 µg/L was obtained.</p> <p>With regard to chronic toxicity, the following reliable data were obtained: a 72-h NOEC of 2,040 µg/L for growth inhibition in the green algae <i>P. subcapitata</i>, a 21-d NOEC of 5 µg/L for reproductive inhibition in the crustacean <i>D. magna</i>, and an approximately 35-d NOEC of 320 µg/L for growth inhibition in the fish species <i>Gasterosteus aculeatus</i> (three-spined stickleback).</p> <p>Accordingly, based on these chronic toxicity values and an assessment factor of 10, a PNEC of 0.5 µg/L was obtained.</p> <p>The value of 0.5 µg/L obtained from the chronic toxicity to the crustacean was used as the PNEC for this substance.</p> <p>The PEC/PNEC ratio is less than 0.1 for both freshwater bodies and seawater; accordingly, further work is</p>		

considered unnecessary at this time.

Hazard Assessment (Basis for PNEC)			Assessment Coefficient	Predicted no effect concentration PNEC (µg/L)	Exposure Assessment		PEC/PNEC ratio	Judgment based on PEC/PNEC ratio	Assessment result
Species	Acute/ chronic	Endpoint			Water body	Predicted environmental concentration PEC (µg/L)			
Crustacean <i>Daphnia magna</i>	Chronic	NOEC reproductive inhibition	10	0.5	Freshwater	<0.05	<0.1	○	○
					Seawater	<0.05	<0.1		

4. Conclusions

	Conclusions	Judgment
Ecological risk	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.