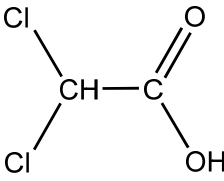


1	CAS No.: 79-43-6	Substance: Dichloroacetic acid
<p>Chemical Substances Control Law Reference No.: 2-1161 PRTR Law Cabinet Order No.: 2-25 Molecular Formula: C₂H₂Cl₂O₂ Molecular Weight: 128.94</p> <p style="text-align: center;">Structural Formula:</p> <div style="text-align: center;">  </div>		
<p>1. General information</p> <p>The aqueous solubility of this substance is 1.00×10⁶ mg/L (20°C), the partition coefficient (1-octanol/water) (log K_{ow}) is 0.92, and the vapor pressure is 0.23 mmHg (=30 Pa) (25°C). The biodegradability (aerobic degradation) is characterized by a BOD degradation rate of 97%.</p> <p>This substance is classified as a Class 2 Designated Chemical Substance under the PRTR Law. The main uses of this substance are as an intermediate for organic synthesis raw materials and for pharmaceutical manufacture. Further, the production and import quantity in fiscal 2016 has not been reported. However, the production and import quantity for fiscal 2015 was not disclosed because the number of reporting businesses was not more than two. The production and import category under the PRTR Law is more than 1 t and less than 100 t.</p> <hr/> <p>2. Exposure assessment</p> <p>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 use of a Mackay-type level III fugacity model indicates that if equal quantities were released to the atmosphere, water bodies, and soil, the proportion distributed to soil and water bodies would be largest.</p> <p>Data for setting the predicted environmental concentration (PEC), which indicates exposure to aquatic organisms, could not be obtained. However, using measurements of drinking water sourced from surface water, lake water and dam reservoir water for the PEC gives a value of around 4 µg/L for freshwater. Further, past data indicated maximum values of around 0.2 µg/L for public freshwater bodies and around 1.6 µg/L for seawater. In addition, past data, albeit obtained from a survey of a limited area, indicate maximum values of 3.4 µg/L for public freshwater bodies and 0.33 µg/L for seawater.</p> <hr/> <p>3. Initial assessment of ecological risk</p> <p>With regard to acute toxicity, the following reliable data were obtained: a 72-h EC₅₀ of 17,000 µg/L for growth inhibition in the green alga <i>Pseudokirchneriella subcapitata</i> and a 7-d EC₅₀ of 555,200 µg/L for growth inhibition in the duckweed <i>Lemna gibba</i>. Accordingly, based on these acute toxicity values and an assessment factor of 1,000, a predicted no effect concentration (PNEC) of 17 µg/L is obtained.</p> <p>With regard to chronic toxicity, the following reliable data were obtained: a 72-h NOEC of 93.2 µg/L for growth inhibition in the green alga <i>P. subcapitata</i> and a 7-d NOEC of 50,000 µg/L for growth inhibition in the duckweed <i>L. gibba</i>. Accordingly, based on these chronic toxicity values and an assessment factor of 100, a PNEC of 0.93 µg/L is obtained.</p> <p>The value of 0.93 µg/L obtained from the chronic toxicity to the crustacean was used as the PNEC for this substance. Data for setting the predicted environmental concentration (PEC) could not be obtained for this substance.</p>		

Accordingly, an assessment of ecological risk could not be made. However, albeit data for a limited area, a maximum concentration of around 1.6 µg/L was detected for public seawater and the ratio of this concentration to the PNEC is 1.7. In addition, past data, albeit obtained from a survey of a limited area, indicate maximum values of 3.4 µg/L for public freshwater bodies and 0.33 µg/L for seawater. The ratios to the PNEC are 4 for freshwater and 0.4 for seawater. Furthermore, use of measurements of drinking water sourced from surface water, lake water and dam reservoir water for the PEC gives a value of around 4 µg/L for freshwater and the resulting PEC/PNEC ratio is 4; accordingly, efforts to collect data are needed, and environmental concentration data needs to be augmented taking into consideration emission sources.

Hazard assessment (basis for PNEC)			Assessment coefficient	Predicted no effect concentration PNEC (µg/L)	Exposure assessment		PEC/PNEC ratio	Assessment result
Species	Acute/chronic	Endpoint			Water body	Predicted environmental concentration PEC (µg/L)		
Green algae	Chronic	NOEC Growth inhibition	100	0.93	Freshwater	—	—	(▲)
					Seawater	—	—	

4. Conclusions

	Conclusions	Judgment
Ecological risk	Further efforts to collect data required based on comprehensive review of existing relevant data.	(▲)

- [Risk judgments] ○: No need for further work ▲: Requiring information collection
 ■: Candidates for further work ×: Impossibility of risk characterization
 (▲) : Further efforts to collect data required based on comprehensive review of existing relevant data
 (■) : Candidate for further work based on comprehensive review of existing data