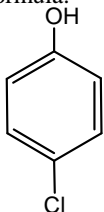


4	CAS No.: 106-48-9	Substance: <i>p</i> -Chlorophenol
<p>Chemical Substances Control Law Reference No.: 3-895 (Monochlorophenol) PRTR Law Cabinet Order No.: 2-22</p> <p>Structural Formula:</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> Molecular Formula: C₆H₅ClO Molecular Weight: 128.56 </div> <div style="text-align: center;">  </div> </div>		
<p>1. General information</p> <p>The aqueous solubility of this substance is 2.40 x 10⁴ mg/L (25°C) and the partition coefficient (1-octanol/water) (log Kow) is 2.39. The vapor pressure is 0.089 mmHg (= 11.9 Pa) (25°C). Degradability (aerobic degradation) in terms of BOD-based degradation percentage is estimated to be 2.0%. This substance is determined to be non or not highly bioaccumulative. The substance is not considered to contain hydrolytic groups.</p> <p>This substance is a Type 2 and Type 3 Monitoring Chemical Substance under the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances and a Class 2 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). It is mainly used for dye intermediates, disinfectants, and cosmetic materials. The total of production and imports in FY2006 was 594 tons/yr, which was categorized as within the 1-ton class of production and imports under the PRTR Law.</p> <hr/> <p>2. Exposure assessment</p> <p>As this substance is not 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), release and transfer quantities could not be obtained. When predictions of distribution ratios by medium were made using the Mackay-Type Level III Fugacity Model, in the event of equal release to the atmosphere, water, and soil, the distribution ratio was highest for soil and water.</p> <p>The predicted environmental concentration (PEC), which indicates exposure to aquatic organisms, was estimated to be less than 0.05 µg/L for both freshwater and seawater public water bodies.</p> <hr/> <p>3. Initial assessment of ecological risk</p> <p>With regard to acute toxicity, reliable information of a 72-hour median effective concentration (EC₅₀) growth inhibition value of 6,850 µg/L was found for the algae <i>Pseudokirchneriella subcapitata</i>, a 48-hour EC₅₀ immobilization value of 2,500 µg/L was found for the crustacean <i>Daphnia magna</i> (water flea), a 96-hour median lethal concentration (LC₅₀) value of 1,900 µg/L was found for the fish <i>Oncorhynchus mykiss</i> (rainbow trout), and a 96-hour LC₅₀ value of 32,000 µg/L was found for another organism, the hydra <i>Hydra vulgaris</i>. Accordingly, an assessment factor of 100 was used, and a predicted no effect concentration (PNEC) of 19 µg/L was obtained based on the acute toxicity values. With regard to chronic toxicity, a 72-hour no observed effect concentration (NOEC) for growth inhibition of the green algae <i>P. subcapitata</i> was 1,000 µg/L, a 21-day NOEC for reproduction of the crustacea <i>D. magna</i> was 189 µg/L, a 85-day NOEC for growth inhibition and mortality of the rainbow trout <i>O. mykiss</i> was 249 µg/L, and a 6-day NOEC for growth inhibition of the hydra <i>H. vulgaris</i> was less than 1,100 µg/L. These were reliable values, and therefore with an assessment factor of 10 a PNEC of 19 µg/L was calculated based on chronic toxicity. As the PNEC for the substance, a value of 19 µg/L obtained from the acute toxicity for the fish and the chronic toxicity for the crustacea was used.</p>		

The PEC/PNEC ratio was less than 0.003 for both freshwater bodies and seawater bodies. Accordingly, further work is thought to be unnecessary at this time.

Hazard assessment (basis for PNEC)			Assessment factor	Predicted no effect concentration PNEC (µg/L)	Exposure assessment		PEC/PNEC ratio	Result of assessment
Species	Acute / chronic	Endpoint			Water body	Predicted environmental concentration PEC (µg/L)		
Fish (rainbow trout) / crustacea (water flea)	Acute / chronic	LC ₅₀ mortality / NOEC reproduction	100 / 10	19	Freshwater	<0.05	<0.003	○
					Seawater	<0.05	<0.003	

4. Conclusions

	Conclusions	Judgment
Ecological risk	No need for further work.	○

[Risk judgments] ○: No need for further work ▲: Requiring information collection
 ■: Candidates for further work ×: Impossibility of risk characterization
 () : Though a risk characterization cannot be determined, there would be little necessity of collecting information.
 () : Further information collection would be required for risk characterization.