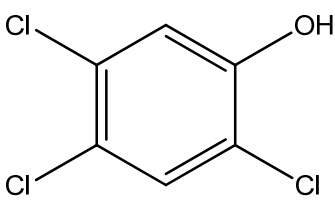


7	CAS No.: 95-95-4	Substance: 2,4,5-Trichlorophenol
<p>Chemical Substances Control Law Reference No.: 3-931 (Trichlorophenol (and its sodium salts))</p> <p>PRTR Law Cabinet Order No.:</p> <p>Molecular Formula: C₆H₃Cl₃O</p> <p>Molecular Weight: 197.45</p>		
		<p>Structural Formula:</p> 

1. General information

The aqueous solubility of this substance is 1×10^3 mg/1,000g (25°C), the partition coefficient (1-octanol/water) (log K_{ow}) is 3.72, and the vapor pressure is 0.02 mmHg (2.7 Pa) (25°C). Biodegradability (aerobic degradation) is characterized by a BOD degradation rate of 0%. Furthermore, its half-life for hydrolysis is more than 8×10^6 years.

The main use of this substance is as an intermediate for pharmaceuticals, agricultural chemicals, dyestuffs, pigments, photographic chemicals, and liquid crystal materials. The production and import quantity was not disclosed between fiscal 2010 and fiscal 2013 because the number of reporting businesses was not more than two.

2. Exposure assessment

Because this substance is not classified as a Class 1 Designated Chemical Substance under the Chemical Substances Control 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 indicated that if equal quantities were 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 reported to be less than around 0.007 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 1,200 µg/L for growth inhibition in the green algae *Desmodesmus subspicatus*, a 48-h LC_{50} of 390 µg/L for the amphipod crustacean *Gammarus pulex*, a 96-h LC_{50} of 260 µg/L for the fish species *Oncorhynchus mykiss* (rainbow trout), and a 7-d EC_{50} of 415 µg/L for growth inhibition in the inflated duckweed *Lemna gibba*. Accordingly, based on these acute toxicity values and an assessment factor of 100, a predicted no effect concentration (PNEC) of 2.6 µg/L was obtained.

With regard to chronic toxicity, the following reliable data were obtained: a 72-h NOEC of 530 µg/L for growth inhibition in the green algae *Pseudokirchneriella subcapitata*, a 21-d of NOEC 110 µg/L for reproductive inhibition in the crustacean *Daphnia magna*, and a 90-d NOEC of 108 µg/L for mortality in the fish species *Oncorhynchus mykiss* (rainbow trout). Accordingly, based on these chronic toxicity values and an assessment factor of 10, a PNEC of 10 µg/L was obtained.

The value of 2.6 µg/L obtained from the acute toxicity to the fish species was used as the PNEC for this substance.

The PEC/PNEC ratio is less than 0.003 for both freshwater bodies and seawater; accordingly, further work is 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)			
Fish (rainbow trout)	Acute	LC ₅₀ mortality	100	2.6	Freshwater	<0.007	<0.003	○	○
					Seawater	<0.007	<0.003		

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.