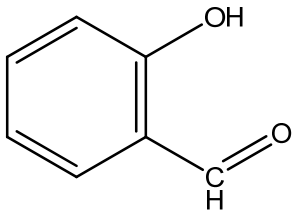
2	CAS No.: 90-02-8	Substance: Salicylaldehyde

Chemical Substances Control Law Reference No.: 3-1183 (Hydroxybenzaldehyde), 3-2660 (Hydroxybenzaldehyde)

PRTR Law Cabinet Order No.: 1-136

Molecular Formula: $C_7H_6O_2$ Structural formula:

Molecular Weight: 122.13



1. General information

The aqueous solubility of this substance is 4.9 g/L (25°C), the partition coefficient (1-octanol/water) (log K_{ow}) is 1.81 (pH 5.4), and the vapor pressure is 0.593 mmHg (79 Pa) (25°C). Biodegradability (aerobic degradation) is judged to be good. Furthermore, the substance is stable towards hydrolysis (5 d, 50°C, pH 4, 7, 9).

This substance 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 use of this substance is as a raw material for agricultural chemicals and pharmaceuticals. The production and import quantity in fiscal 2013 was less than 1,000 t. The production and import category under the PRTR Law is more than 100 t.

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2. Exposure assessment

Total release to the environment in fiscal 2013 under the PRTR Law was approximately 0.001 t, and all releases were reported. All reported releases were to the atmosphere. The sole source of reported releases was the plastic product manufacturing industry. A multi-media model used to predict the proportions distributed to individual media in the environment indicated that in regions where the largest quantities were estimated to have been released to the environment overall or the atmosphere in particular, the predicted proportion distributed to the atmosphere was 91.4%.

The predicted environmental concentration (PEC), which indicates exposure to aquatic organisms, was reported to be less than 0.013 µg/L for public freshwater bodies and generally less than 0.013 µg/L for seawater.

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3. Initial assessment of ecological risk

With regard to acute toxicity, the following reliable data were obtained: a 72-h EC_{50} of 4,760 µg/L for growth inhibition in the green algae *Pseudokirchneriella subcapitata*, a 48-h EC_{50} of 2,600 µg/L for swimming inhibition in the crustacean *Daphnia magna*, a 96-h LC_{50} of 1,620 µg/L for the fish species *Oryzias latipes* (medaka), and a 96-h EC_{50} of 5,500 µg/L for teratogenicity in embryos of the African clawed frog *Xenopus laevis*. Accordingly, based on these acute toxicity values and an assessment factor of 100, a predicted no effect concentration (PNEC) of 16 µg/L was obtained.

With regard to chronic toxicity, the following reliable data were obtained: a 72-h NOEC of 550 µg/L for growth inhibition in the green algae *P. subcapitata* and a 21-d NOEC of 126 µg/L for reproductive inhibition in the crustacean *D. magna*. Accordingly, based on these chronic toxicity values and an assessment factor of 100, a PNEC of 1.2 µg/L was obtained.

The value of 1.2 µg/L obtained from the chronic toxicity to the crustacean was used as the PNEC for this substance.

The PEC/PNEC ratio is less than 0.01 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)			
Crustacean *Daphnia magna*	Chronic	NOEC reproductive inhibition	100	1.2	Freshwater	<0.013	<0.01	○	○
					Seawater	<0.013	<0.01		

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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.