

1	CAS No.: 381-73-7	Substance: Difluoroacetic acid
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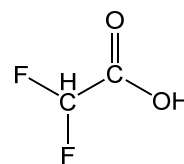
Chemical Substances Control Law Reference No.:

PRTR Law Cabinet Order No.:

Molecular Formula: C<sub>2</sub>H<sub>2</sub>F<sub>2</sub>O<sub>2</sub>

Structural Formula:

Molecular Weight: 96.03



### 1. General information

The aqueous solubility of this substance is  $1 \times 10^6$  mg/L (37°C), the partition coefficient (1-octanol/water) ( $\log K_{ow}$ ) is 0.60097 (37°C) (pH=2.03), and the vapor pressure is  $1.17 \times 10^3$  Pa (25°C) (calculated value). Neither information regarding biodegradability (aerobic degradation), nor data related to hydrolyzability could be obtained.

The main use of this substance is as a reagent. Further, the production and import quantity for this substance could not be obtained.

### 2. Exposure assessment

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 indicate that if equal quantities were released to the atmosphere, water bodies, and soil, the proportion distributed to water would be largest.

The predicted environmental concentration (PEC), which indicates exposure to aquatic organisms, was reported to be less than 0.00032 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<sub>50</sub> exceeding 101,000 µg/L for growth inhibition in the green alga species *Raphidocelis subcapitata*, a 48-h EC<sub>50</sub> exceeding 100,000 µg/L for swimming inhibition in the crustacean species *Daphnia magna*, and a 96-h LC<sub>50</sub> exceeding 100,000 µg/L for the fish species *Oryzias latipes*. Accordingly, based on these acute toxicity values and an assessment factor of 100, a predicted no effect concentration (PNEC) of 1,000 µg/L was obtained.

With regard to chronic toxicity, the following reliable datum was obtained: a 72-h NOEC of 18.9 µg/L for growth inhibition in the green alga species *R. subcapitata*. Accordingly, based on this chronic toxicity value and an assessment factor of 100, a predicted no effect concentration (PNEC) of 0.18 µg/L was obtained.

The value of 0.18 µg/L obtained from the chronic toxicity to the alga was used as the PNEC for this substance.

The PEC/PNEC ratio is less than 0.002 for both freshwater bodies and seawater; accordingly, further work to assess the ecological risk of this substance is considered unnecessary at this time. A comprehensive review of the above findings draws the same conclusion.

Hazard assessment (basis for PNEC)			Assessment coefficient	Predicted no effect concentration PNEC (µg/L)	Exposure assessment		PEC/PNEC ratio	Comprehensive judgment
Species	Acute/ chronic	Endpoint			Water body	Predicted environmental concentration PEC (µg/L)		
Green algae	Chronic	NOEC Growth inhibition	100	0.18	Freshwater	<0.00032	<0.002	○
					Seawater	<0.00032		

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**4. Conclusions**

	Conclusions	Judgment
Ecological risk	Requiring information collection	○

[Risk judgments] ○: No need for further work      ▲: Requiring information collection  
                         ■: Candidates for further work      ×: Impossibility of risk characterization