

# Phosalone -MATERIAL SAFETY DATA SHEET

## Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO.,LTD

ADD: NO.113 PUXING ROAD, PUZHOU INDUSTRIAL PARK, LONGWAN DISTRICT,  
WENZHOU ZHEJIANG P.R. CHINA

Tel: +86-577-88905587

Fax: +86-577-88905567

Email: info@rayfull.com

sales@rayfull.com

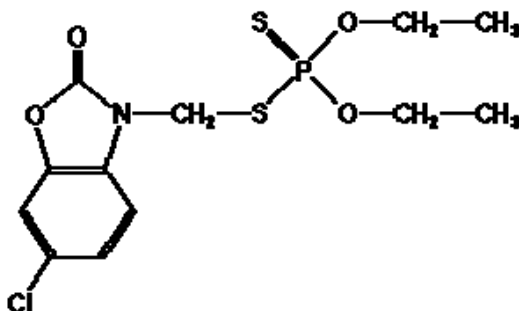
## 1. Chemical Product Identification

Product Name: Phosalone

Molecular Formula: C<sub>12</sub>H<sub>15</sub>ClNO<sub>4</sub>PS<sub>2</sub>

Molecular Weight: 367.8

Structural Formula:



Chemical Name:

S-6-chloro-2,3-dihydro-2-oxobenzoxazol-3-ylmethyl O,O-diethyl phosphorodithioate  
(IUPAC);

Form: crystals;

Color: white;

Odor: with a garlic-like odor;

CAS No.: 2310-17-0

## 2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Phosalone	2310-17-0	95.0
Other ingredients		5.0

### 3. Hazards Identification

Component	Symbol	R phrases
Phosalone	T;N	R21-25-50/53

More important danger for the man: The substance irritates the eyes, the skin and the respiratory tract. Weak cholinesterase inhibitor. Medical observation is indicated.

Dangers for the environment: The substance is very toxic to aquatic organisms. Avoid release to the environment in circumstances different to normal use.

Physical-chemical dangers: The substance decomposes on heating producing toxic fumes of hydrogen chloride, nitrogen oxides, phosphorous oxides and sulfur oxides.

### 4. First Aid Measures

Skin: Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.

Eyes: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

Inhalation: Move affect person to fresh air and keep at rest until recovered. If not breathing, give artificial respiration and get to a doctor.

Ingestion: Do not induce vomiting if the person is conscious. Give glass of water. Get to a doctor.

Notes to physician: No specific antidote if ingested. Treat symptomatically.

### 5. Fire-Fighting Measures

Extinguishing media

To be used: Water spray, powder.

Don't use: Not applicable

Particular risk: None

Measures of personal protection: Safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.

Environmental cautions

EX: Prevent the contamination of the floor and the beds of water.

### 6. Accidental Release Measures

Personal cautions: Safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.

Cleaning methods

EX: The empty container may be decontaminated by rinsing two or three times with water and detergent and scrubbing the sides.

Environmental cautions

EX: Prevent the contamination of the floor and the beds of water.

## **7. Handling And Storage**

Handling: Do not apply to humans, their clothing, or bedding. Do not contaminate food or use on household tanks.

Storage: Store at normal temperatures, away from children, domestic animals, food and feed products, seed and fertilizer. Do not contaminate other stored products or the storage area by handling or storage of this product. Keep in a well-ventilated room.

## **8. Exposure Controls / Personal Protection**

Personal protective equipment

Respiratory protection: Approved respirator

Protective gloves: Rubber gloves

Eye protection: Safety goggles or face shield.

Industrial hygiene: adequate ventilation.

## **9. Physical And Chemical Properties**

Melting point: 45-48°C.

Density: 1.39g/ml@20°C.

Water solubility: 1.7 mg/l at room temperature

Other solubility: Soluble (ca. 1000 g/l) in ethyl acetate, acetone, acetonitrile, benzene, chloroform, methylene chloride, cyclohexane, dioxane, methyl ethyl ketone, toluene, xylene (all at 20 degrees C). In methanol and ethanol, ca. 200 g/l at 20 degrees C.

PH value:  $\leq 0.5\%$ (m/m) (calculated as H<sub>2</sub>SO<sub>4</sub>)

Flash point: flammable;

Ignition temperature: not applicable

## **10. Stability And Reactivity**

Conditions to avoid: fire and flame, high temperature;

Products to avoid: none.

Thermal decomposition: none

Hazardous decomposition products: hydrogen chloride, nitrogen oxides, phosphorous oxides and sulfur oxides.

Hazardous reaction: The substance decomposes on heating producing toxic fumes of hydrogen chloride, nitrogen oxides, phosphorous oxides and sulfur oxides.

## 11. Toxicological Information

Contact with the skin: moderately irritant to skin

Contact with the eyes: moderately irritant to eye.

Inhalation: cough.

Ingestion: not applicable;

Effects for chronic toxicity:

Reproductive: Oral administration of a 30% phosalone formulation to rats at doses up to 50 mg/kg/day on days 6 through 15 of gestation did not produce maternal toxicity. Phosalone was found to have no effect on reproduction in rats at doses of 0, 25 and 50 ppm.

Carcinogenicity: A 104-week feeding study was conducted on mice. Fifty animals per sex were used. The dietary doses given were 0, 5, 50, and 100 ppm. Female mice demonstrated an increased incidence of leiomyomas and leiomyosarcomas of the uterus and of the Harderian gland adenomas.

Teratogenicity: Oral administration of a 30% phosalone formulation to rats at doses up to 50 mg/kg/day on days 6 through 15 of gestation did not produce teratogenic effects. Phosalone was not found to be teratogenic in chickens, rats or rabbits.

Mutagenicity: No information currently available.

Sensitisation: not a skin sensitiser (guinea pigs);

## 12. Ecological And Ecotoxicological Information

Aquatic organisms:

The 96-hour freshwater fish acute toxicity found phosalone to be very highly toxic to warmwater fish and highly toxic to coldwater fish. The acute LC<sub>50</sub> for bluegill sunfish was 0.05 ppm; 0.63 ppm for rainbow trout; and 3.4 ppm for harlequin fish. Other LC<sub>50</sub> values for phosalone indicated the toxicity for goldfish was 2 mg/l; 0.11 mg/l for bluegill sunfish; and 0.3-0.63 mg/l for rainbow trout. One-fifth of the 24-hour LC<sub>50</sub> values caused hemorrhage in bluegills. The 48-hour freshwater invertebrate toxicity indicated phosalone to be very highly toxic to aquatic invertebrates. The acute value for *Daphnia magna* was 0.0012 ppm. Immediate toxicity to crustaceans is considered very high.

Bird: Delayed neurotoxicity was negative in hens. Acute subcutaneous LD<sub>50</sub> for chickens is 350 mg/kg. The avian oral toxicity indicated phosalone was slightly toxic to waterfowl; the acute oral LD<sub>50</sub> for mallards was greater than 2,150 mg/kg. The oral toxicity for pheasants was 290 mg/kg. The 8-day avian dietary toxicity indicated phosalone was slightly toxic to waterfowl and upland game birds. Subacute toxicity for mallard ducks was 1,659 ppm and 2,033 ppm for bobwhite quail.

#### Other Animals (Non-target species)

Phosalone rates of 700 g/ha were not found to be hazardous to honeybees, provided they were not actively foraging at the time of spraying (111). Insecticides, one of which was phosalone, applied to host eggs at field rates in the laboratory were highly toxic to *Trichogramma brasiliensis* released on the eggs, causing 84-100% mortality in 24 hours. However, percentage parasitism after 4 days was higher with phosalone (36 - 73%) than with other insecticides studied, and emergence from treated host eggs did not appear to be affected. Phosalone had little or no effect on adults or cocoons of *Apanteles plutellae*

### **13. Disposal Considerations**

Material which can not be used at the site should be disposed of in an approved waste disposal facility following all applicable Local regulations. If burned, stay out of smoke. Do not contaminate water supplies by disposal of wastes or containers.

Spillage disposal: Do not wash away into sewer. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place (extra personal protection: complete protective clothing including self-contained breathing apparatus).

### **14. Transport Information**

Not applicable.

### **15. Regulatory Information**

Not applicable.

### **16. Other Information**

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.