



## MATERIAL SAFETY DATA SHEET

Material Safety Data Sheet according to Reg. (EU) No 2015/830

### Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO., LTD.

ADD: NO.52 PUCHANG ROAD, PUZHOU INDUSTRIAL PARK, LONGWAN DISTRICT,  
WENZHOU ZHEJIANG P.R. CHINA

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## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Trade name : DIAZOL TECHNICAL  
Chemical description : Diazinon: O, O-diethyl O-2-isopropyl-6-methylpyrimidin-4-yl  
phosphorothioate  
CAS number : 333-41-5

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use : Insecticide

### 1.3. Details of the supplier of the safety data sheet

Company identification : ZHEJIANG RAYFULL CHEMICALS CO., LTD.  
ADD: NO.52 PUCHANG ROAD, PUZHOU INDUSTRIAL  
PARK, LONGWAN DISTRICT, WENZHOU ZHEJIANG P.R.  
CHINA

### 1.4. Emergency telephone number

Emergency phone number : 112



## 2. Hazards Identification

### 2.1. Classification of the substance or mixture

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)

- Health hazards : Acute toxicity, Oral - Category 4 - Warning (CLP: acute Tox.4)
- Environmental hazards : Hazardous to the aquatic environmental- Acute hazard - Category 1- Warning  
Hazardous to the aquatic environmental- Chronic hazard - Category 1- Warning

Classification EC 67/548 or EC 1999/45

- : Xn; R22
- : N; R50-53

### 2.2. Label elements

#### Labelling Regulation EC 1272/2008 (CLP)

Hazard pictograms :



- Hazards pictograms -code : GHS07 -GHS09
- Signal words : Warning
- Hazard statements : H302 - Harmful if swallowed  
H410 - Very toxic to aquatic life with long lasting effects
- Precautionary statements
  - General : P102 - Keep out of reach of children
  - Prevention : P264- Wash hands thoroughly after handling  
P270- Do not eat drink or smoke when using this product  
P273- Avoid release to the environmental
  - Response : P301+P330+P310+P321 - IF SWALLOWED :  
Rinse mouth Immediately call and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.2. Other hazards

None under normal conditions.



### 3. Hazards Identification

#### 3.1 Substance

This product is a substance.

Substance name	Value(s)	CAS No	Index No	REACH Reg.	Classification:
Diazinon (ISO)	95%	333-41-5	015-040-00-4	-----	REGULATION (EC) No 1272/2008 Xn; R22 N; R50*53 Acute Tox. 4 (Oral) Aquatic Acute 1 Aquatic Chronic 1

### 4. Hazards Identification

#### 4.1. Description of first aid measures

##### First aid

- Ingestion : Do not induce vomiting. Wash out mouth with plenty of water. Never give anything by mouth to an unconscious. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediately get medical attention
- Skin contact : Remove affected clothing and wash all exposed skin area with soap and water, followed by warm water rinse. Obtain medical attention.
- Eye contact : Rinse immediately with plenty water. Immediately consult an eye specialist.
- Inhalation : Remove victim to fresh air. Keep victim warm and at rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediately get medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Effects and symptoms : Exposure may result in weakness, excessive sweating, salivation, nausea, diarrhea, bradycardia, tachycardia, bronchorrhea, small pupils, central nervous depression, fasciculation and convulsions
- Ingestion : May result in systemic poisoning

#### 4.3. Indication of any immediate medical attention and special treatment needed



Note to physician : Antidots 1: Atropine sulfate  
Antidote 2: Obidoxime chloride or Pralidoxime (PAM)  
Suggest serum and/or RBC cholinesterase derermination.  
If ingested perform gastric lavage and administer activated charcoal.

## **5. Fire-fighting measures**

### **5.1. Extinguishing media**

Extinguishing media : For small fire : dry chemical, carbon dioxide  
For large fire : water spray, alcohol resistant foam

### **5.2. Special hazards arising from the substance or mixture**

Special exposure : When heated to decomposition, emits toxic fumes : carbon  
hazards dioxide, carbon monixde, nitrogen oxides, sulfur oxide,  
phosphorus oxides

### **5.3. Advice for fire-fighters**

Protection against fire : Wear self-contained breathing apparatus, rubber boots and thick  
rubbers gloves.  
Special procedures : Fight fires a protected location. Dike fire control water for later  
disposal. Keep container cool by spraying with water

## **6. Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use appropriate protection (see section 8)

### **6.2. Environmental precautions**

Environmetal precautions : Dispose of this material and its container at hazardous or special  
waste collection point, in accordance with national and regional  
regulations. If the product has contaminated surface water, inform  
the appropriate authorities. Contaminated soil layers have to be  
dug out.

### **6.3. Methods and material for containment and cleaning up**



Afer spillage and/or leakage : In the event of minor spillage: Absorb in sand or other inert material. Use appropriate container to avoid environmental contamination.

In the event of major spillage: Collect and contain as much free liquid as possible. Dike spills using absorbent or impervious material such as sand or clay for later disposal

#### **6.4. Reference to other sections**

### **7. Handling and storage**

#### **7.1. Precautions for safe handling**

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

#### **7.2. Conditions for safe storage, including any incompatibilities**

Storage : store in original container only in cool, dry, well-ventilated, secure area out of reach of children and animals.

Packing : Resin-lined metal drums

#### **7.3. Specific end use(s)**

### **8. Exposure controls personal protection**

#### **8.1. Control parameters**

Industrial hygiene : Use good industrial hygiene. Wear face shield or goggles, elbow length PVC gloves, cotton overalls buttoned to the neck and wrist, washable hat and half face respirator with dust and vapor cartridge. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

-Respiratory protection : During sparing wear suitable respiratory equipment

-Skin protection : Wear suitable protective clothing

-Hand protection : Wear suitable gloves

-Eye protection : Chemical goggles or safety glasses



## 8.2. Occupational Exposure Limits

TLV-TWA [mg/m<sup>3</sup>] : USA: 0.1, A4 (1999) skin (Diazinon (ISO))

## 9. Physical And Chemical Properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

Physical state	: Liquid
Colour	: Light yellow-brown
Odor	: organophosphate odor
Acidity	: ≤ 0.03%
Molecular weight	: 304.35
Boiling point	: 83-84°C/0.0002mmHg
Melting point	: Not applicable
Vapour pressure	: 11.97 mPa at 25°C
Refractive index	: 1.4978-1.4981
Solubility	: 60 mg/L at 20°C in the water
Density	: 1.11g/cm <sup>3</sup>

## 10. Stability And Reactivity

### 10.1. Reactivity

Hazardous : Avoid contact with: strong oxidizing agents, strong acid, strong base reactions

### 10.2. Chemical stability

Physico-chemical stability : Stable under normal conditions

### 10.3. Possibility of hazardous reactions

Hazardous : Will not occur  
Polymerization

### 10.4. Conditions to avoid



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Conditions to avoid : fire, heat and high temperature

### 10.5. Incompatible materials

Incompatible materials : Strong oxidizing agents

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** : oxides of nitrogen, hydrogen, carbon, sulfur, and phosphorous.

## 11. Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity

- Acute oral LD<sub>50</sub> for rat : 1139 mg/kg
- Acute dermal LD<sub>50</sub> for rat : >2000 mg/kg
- Inhalation LD<sub>50</sub> for rat : >5.0 mg/L
- Skin irritation : Slight irritant
- Eye irritation : Slight irritant
- Skin sensitization : Non sensitizer
- Chronic toxicity : Chronic effects have been observed at doses ranging from 10 mg/kg/day for swine to 1000 mg/kg/day for rats. Inhibition of red blood cell cholinesterase, and enzyme response occurred at lower doses in the rats. Enzyme inhibition has been documented in red blood cells, in blood plasma, and in brain cells at varying doses and with different species.
- Reproductive effects : No data are currently available.
- Teratogenic effects : The data on teratogenic effects due to chronic exposure are inconclusive. One study has shown that injection of diazinon into chicken eggs resulted in skeletal and spinal deformities in the chicks. Bobwhite quail born from eggs treated in a similar manner showed skeletal deformities but no spinal abnormalities. Acetylcholine was significantly affected in this latter study. Tests with hamsters and rabbits



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- at low doses (0.125 0.25 mg/kg/day) showed no developmental effects, while tests with dogs and pigs at higher levels (1.0 10.0 mg/kg/day) revealed gross abnormalities
- Mutagenic effects : While some tests have suggested that diazinon is mutagenic, current evidence is inconclusive.
- Carcinogenic effects : Diazinon is not considered carcinogenic. Tests on rats over a 2-year period at moderate doses (about 45 mg/kg) did not cause tumor development in the test animals.
- Organ toxicity : Diazinon itself is not a potent cholinesterase inhibitor. However, in animals, it is converted to diazoxon, a compound that is a strong enzyme inhibitor.

## 12. Ecological information

### 12.1. Toxicity

- Effects on birds : Birds are quite susceptible to diazinon poisoning. Bird kills associated with diazinon use have been reported in every area of the country and at all times of the year. Geese and mallard ducks may be exposed to LC<sub>50</sub> concentrations in very short periods of time after application (from 15 to 80 minutes depending on the application rate of the pesticide). Birds are significantly more susceptible to diazinon than other wildlife. LD<sub>50</sub> values for birds range from 2.75 mg/kg to 40.8 mg/kg
- Effects on aquatic organisms : Diazinon is highly toxic to fish. In rainbow trout, the diazinon LC<sub>50</sub> is 2.6 to 3.2 mg/L. In hard water, lake trout and cutthroat trout are somewhat more resistant. Warm water fish such as fathead minnows and goldfish are even more resistant with diazinon LC<sub>50</sub> values ranging up to 15 mg/L. There is some evidence that saltwater fish are more susceptible than freshwater fish. Bioconcentration ratios range from 200 in minnows to 17.5 for guppies. These studies show that diazinon does not bioconcentrate significantly in fish.
- Effects on other organisms : Diazinon is highly toxic to bees.





## **12.2. Persistence -degradability**

Persistence and : Half-life time (t<sub>1/2</sub>) = 1-3 weeks  
degradability

## **12.3. Bioaccumulative potential**

Bioaccumulative : Diazinon does not bioaccumulate in aquatic organisms  
potential

## **12.4. Mobility in soil**

Mobility : Low mobility

## **12.5. Results of PBT and vPvB assessment**

## **12.6. Other adverse effects**

# **13. Disposal Considerations**

## **13.1. Waste treatment methods**

Disposal : Avoid release to the environmental  
Dispose of in compliance with all state and local laws and  
regulations.

# **14. Transport Information**

-UN No. : 3802

-Proper shipping name : Environmental hazardous substance, Liquid , N.O.S (95%  
Diazinon)

-Packing group : III

-Class : 9

-H.I.nr : 90

-IMDG : YES

# **15. Regulatory Information**



## **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

### **REACH Regulation (EC) No 1907/2006**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)

### **REGULATION (EC) No 1272/2008**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)

### **REGULATION(EU) No 453/2010**

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance)

## **15.2. Chemical Safety Assessment**

No data available

## **16. Other Information**

*List of full text of* : R22 - Harmful if swallowed.

*R-phrases in section 3* : R50/53-Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Futher information : None

Print date : 10 /03 /2017

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



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