



# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Crotoxyphos

### 1.2 Other means of identification

Product number -

Other names 1-phenylethyl (2E)-3-[(dimethoxyphosphinyl)oxy]-2-butenate; Crotoxyphos; Ciodrin

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

### 1.4 Supplier's details

Company Shanghai Yien Chemical Technology Co., Ltd  
Address Building 6, 28 Yingong Road, Fengxian District, Shanghai  
Chemical Industry Zone, Shanghai, 201400, China  
Telephone +86-400-133-2688

### 1.5 Emergency phone number

Emergency phone number +86-400-133-2688

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral

Acute toxicity - Category 3, Dermal

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H301 Toxic if swallowed

H311 Toxic in contact with skin

	H410 Very toxic to aquatic life with long lasting effects
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
	P273 Avoid release to the environment.
<b>Response</b>	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/...
	P316 Get emergency medical help immediately. P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
	P391 Collect spillage.
<b>Storage</b>	P405 Store locked up.
<b>Disposal</b>	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Crotoxyphos	Crotoxyphos	7700-17-6	231-720-5	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

#### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

#### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### 4.2 Most important symptoms/effects, acute and delayed

no data available

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

#### Minimum/Potential Fatal Human Dose

5. 5= extremely toxic: probable oral lethal dose (human) 5-50 mg/kg, between 7 drops & 1 teaspoonful for 70 kg person (150 lb). bidrin

#### Absorption, Distribution and Excretion

Studies with (32)p-labeled ciodrin...in lactating ewes and...goats showed hydrolytic fission to...the corresponding monomethylphosphate and dimethylphosphate. in both species, major eliminative route was urinary, and very small amt of unchanged /ciodrin/ in milk consisted only of beta-isomer.

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## **SECTION 5: Fire-fighting measures**

### **5.1 Suitable extinguishing media**

Use dry chemical, carbon dioxide or alcohol-resistant foam.

### **5.2 Specific hazards arising from the chemical**

no data available

### **5.3 Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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## **SECTION 6: Accidental release measures**

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

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **6.2 Environmental precautions**

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### **6.3 Methods and materials for containment and cleaning up**

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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## **SECTION 7: Handling and storage**

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

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

Keep cool but avoid freezing EC.

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure limit values**

no data available

#### **Biological limit values**

no data available

### **8.2 Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **8.3 Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection**

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

**Skin protection**

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Respiratory protection**

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

**Thermal hazards**

no data available

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**SECTION 9: Physical and chemical properties and safety characteristics**

<b>Physical state</b>	no data available
<b>Colour</b>	LIGHT STRAW-COLORED LIQ
<b>Odour</b>	Mild ester
<b>Melting point/freezing point</b>	no data available
<b>Boiling point or initial boiling point and boiling range</b>	365.6°C at 760 mmHg
<b>Flammability</b>	no data available
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	188.5°C
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	no data available
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	0.1%; SLIGHTLY SOL IN KEROSENE, SATURATED HYDROCARBONS; SOL IN ACETONE, CHLOROFORM, ETHANOL, HIGHLY CHLORINATED HYDROCARBONS
<b>Partition coefficient n-octanol/water</b>	no data available
<b>Vapour pressure</b>	1.4X10 <sup>-5</sup> mm Hg @ 20 deg C
<b>Density and/or relative density</b>	1.198 g/cm <sup>3</sup>
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

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**SECTION 10: Stability and reactivity****10.1 Reactivity**

no data available

**10.2 Chemical stability**

In aq soln at 38 deg c, 50% is hydrolyzed in 87 hr at ph 1, 35 hr at ph 9. ...will not attack fiberglass, reinforced polyester, rigid pvc, or the usual lacquers used for lining drums.

**10.3 Possibility of hazardous reactions**

no data available

## 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

no data available

## 10.6 Hazardous decomposition products

no data available

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# SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

no data available

### STOT-repeated exposure

no data available

### Aspiration hazard

no data available

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# SECTION 12: Ecological information

## 12.1 Toxicity

- Toxicity to fish: LC50 Pimephales promelas (fathead minnow) 11900 ug/L/96 hr @ 17 deg C (95% confidence limit 9830-14400 ug/L), wt 1.0 g. Static bioassay without aeration, pH 7.2-7.5, water hardness 40-50 mg/l as calcium carbonate and alkalinity of 30-35 mg/l. /Technical, 80%
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

## 12.2 Persistence and degradability

In experiments performed on the biodegradation of Ciodrin in three soil-water solutions, 14C-Ciodrin concentrations showed a very rapid initial decline resulting from adsorption and then continued to decline at a slower rate due to biodegradation(1). As degradation

proceeded, degradation products were released into the solution and all the <sup>14</sup>C was found in solution at the end of the experiment. In each soil system, Ciodrin degradation followed first-order kinetics and was related to the extent of initial adsorption. At pH 6.0, the degradation rate in the soil system is two orders of magnitude greater than in aqueous solution. The half-lives of Ciodrin in the soil-water systems are: Poygan silty clay loam (2.2% OC, pH 7.2), 2.00 hr (nonsterile) and 3.75 hr (sterile); Kewanunee Clay (5.8% OC, pH 6.4), 5.50 hr (nonsterile) and 6.00 hr (sterile); and Ella loamy sand (0.93% OC, pH 3.8), 71.0 hr (nonsterile) and 77.0 hr (sterile)(1). The decrease in rate in the electron-beam-sterilized soil was due to decreased Ciodrin adsorption due to the treatment, rather than from retardation of microbial degradation(1). The degradation involves an initial hydrolysis of the ester linkage leading to 3(methoxyphosphinyloxy)crotonic acid(1). The final products are dimethylphosphoric acid, cis-hydroxycrotonic acid, and 1-phenylethanol which are all water soluble(1). In laboratory studies in Chehalis clay loam, 87% of the applied ciodrin degraded in 1 day(2). The enzyme responsible for the degradation exhibits maximum activity at pH 8 and is heat labile(3).

### 12.3 Bioaccumulative potential

Using an estimated log Kow of 1.89(1), one would estimate a BCF of 16 for Ciodrin using a recommended regression equation(2). This would indicate that Ciodrin would not bioconcentrate in aquatic organisms(SRC).

### 12.4 Mobility in soil

The mean soil water distribution coefficient of Ciodrin in 3 soils, Poygan silty clay loam (2.2% OC, pH 7.2), Kewanunee Clay (5.8% OC, pH 6.4), and Ella loamy sand (0.93% OC, pH 3.8) was 6.09(1,2). The mean Koc value for these soils was 173(1). According to a suggested classification scheme(3), a Koc value of 173 suggests moderate mobility in soil(SRC).

### 12.5 Other adverse effects

no data available

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## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: UN3018 (For reference only, please check.)

IMDG: UN3018 (For reference only, please check.)

IATA: UN3018 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID:  
ORGANOPHOSPHORUS  
PESTICIDE, LIQUID,  
TOXIC (For reference only,  
please check.)

IMDG:  
ORGANOPHOSPHORUS  
PESTICIDE, LIQUID,  
TOXIC (For reference only,  
please check.)

IATA:  
ORGANOPHOSPHORUS  
PESTICIDE, LIQUID,  
TOXIC (For reference only,  
please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference

IMDG: 6.1 (For reference

IATA: 6.1 (For reference

only, please check.)

only, please check.)

only, please check.)

#### 14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

#### 14.5 Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

#### 14.6 Special precautions for user

no data available

#### 14.7 Transport in bulk according to IMO instruments

no data available

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### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Crotoxyphos	Crotoxyphos	7700-17-6	231-720-5
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed.
Korea Existing Chemicals List (KECL)			Listed.

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### SECTION 16: Other information

#### Information on revision

Creation Date July 15, 2019

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#### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

#### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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