

## Chemical Safety Data Sheet MSDS / SDS

## Allethrin

Revision Date:2025-07-12 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Allethrin  
CBnumber : CB6681269  
CAS : 584-79-2  
EINECS Number : 209-542-4  
Synonyms : ALLETHRIN,BIOALLETHRIN

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## Classification of the substance or mixture

Acute toxicity - Category 4, Oral  
Acute toxicity - Category 4, Inhalation  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

## Label elements

## Pictogram(s)

Signal word : Warning

## Hazard statement(s)

H302 Harmful if swallowed  
H332 Harmful if inhaled  
H410 Very toxic to aquatic life with long lasting effects

## Precautionary statement(s)

P273 Avoid release to the environment.

P501 Dispose of contents/container to.....

#### **Prevention**

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

#### **Response**

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P317 Get medical help.

P391 Collect spillage.

#### **Storage**

none

#### **Disposal**

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.

#### **Other hazards**

no data available

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Allethrin
Synonyms	: ALLETHRIN,BIOALLETHRIN
CAS	: 584-79-2
EC number	: 209-542-4
MF	: C <sub>19</sub> H <sub>26</sub> O <sub>3</sub>
MW	: 302.41

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **If inhaled**

Fresh air, rest.

#### **Following skin contact**

Remove contaminated clothes. Rinse and then wash skin with water and soap.

#### **Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

### Following ingestion

Rinse mouth.

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

Excerpt from ERG Guide 151 [Substances - Toxic (Non-combustible)]: Highly toxic, may be fatal if inhaled, swallowed or absorbed through skin. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]: Inhalation of material may be harmful. Contact may cause burns to skin and eyes. Inhalation of Asbestos dust may have a damaging effect on the lungs. Fire may produce irritating, corrosive and/or toxic gases. Some liquids produce vapors that may cause dizziness or suffocation. Runoff from fire control may cause pollution. (ERG, 2016)

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

Skin decontamination. Wash skin promptly with soap and water . If irritant or paresthetic effects occur, obtain treatment by a physician. Because volatilization of pyrethroids apparently accounts for paresthesia affecting the face, strenuous measures should be taken (ventilation, protective face mask and hood) to avoid vapor contact with the face and eyes. Vitamin E oil preparations (dL-alpha tocopheryl acetate) are uniquely effective in preventing and stopping the paresthetic reaction. They are safe for application to the skin under field conditions. Corn oil is somewhat effective, but possible side effects with continuing use make it less suitable. Vaseline is less effective than corn oil. Zinc oxide actually worsens the reaction. Pyrethroids

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## SECTION 5: Firefighting measures

### Extinguishing media

Use carbon dioxide, foam, or dry chemical /on fires involving pyrethroids/. Pyrethrum

### Specific Hazards Arising from the Chemical

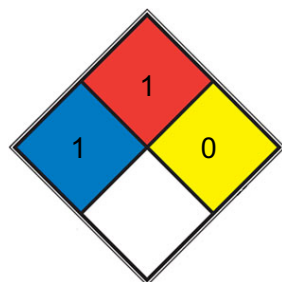
Excerpt from ERG Guide 151 [Substances - Toxic (Non-combustible)]: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Containers may explode when heated. Runoff may pollute waterways. (ERG, 2016)

Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]: Some may burn but none ignite readily. Containers may explode when heated. Some may be transported hot. For UN3508, be aware of possible short circuiting as this product is transported in a charged state. (ERG, 2016)

### Advice for firefighters

Use powder, AFFF, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

### NFPA 704



■ HEALTH 1 Exposure would cause irritation with only minor residual injury (e.g. [acetone](#), sodium bromate, potassium chloride)

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Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion

- ☒ FIRE 1 can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)
- 
- ☒ REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))
- 
- ☐ SPEC.
- ☐ HAZ.
- 

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### Environmental precautions

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### 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.

## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames. Above 65.6°C use a closed system and ventilation. 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.

### Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Keep in a well-ventilated room. Pyrethrins with piperonyl butoxide topical preparations should be stored in well-closed containers at a temperature less than 40 deg C, preferably between 15-30 deg C. Pyrethrins

## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

no data available

### Biological limit values

no data available

### Exposure controls

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

### Individual protection measures

#### Eye/face protection

Wear safety goggles.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use ventilation, local exhaust or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Viscous Liquid
Colour	Clear amber
Odour	no data available
Melting point/freezing point	51°C
Boiling point or initial boiling point and boiling range	160°C
Flammability	Combustible. Liquid formulations containing organic solvents may be flammable.
Lower and upper explosion limit/flammability limit	no data available
Flash point	166°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	in water: none
Partition coefficient n-octanol/water	4.78
Vapour pressure	$1.6 \times 10^{-4}$ Pa (21 °C)
Density and/or relative density	1.01
Relative vapour density	no data available
Particle characteristics	no data available

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## SECTION 10: Stability and reactivity

## Reactivity

Decomposes above 400°C . This produces irritating fumes.

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## Chemical stability

More stable towards uv light than natural pyrethrins

## Possibility of hazardous reactions

Slight fire hazard. ALLETHRIN is an ester and ketone. Esters react with acids to liberate heat along with alcohols and acids. Strong oxidizing acids may cause a vigorous reaction that is sufficiently exothermic to ignite the reaction products. Heat is also generated by the interaction of esters with caustic solutions. Flammable hydrogen is generated by mixing esters with alkali metals and hydrides. Ketones are reactive with many acids and bases liberating heat and flammable gases (e.g., H<sub>2</sub>). The amount of heat may be sufficient to start a fire in the unreacted portion of the ketone. Ketones react with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H<sub>2</sub>) and heat. Ketones are incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides. They react violently with aldehydes, HNO<sub>3</sub>, HNO<sub>3</sub> + H<sub>2</sub>O<sub>2</sub>, and HClO<sub>4</sub>.

## Conditions to avoid

no data available

## Incompatible materials

Incompatible with alkalis...

## Hazardous decomposition products

When heated to decomposition it emits acid fumes.

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# SECTION 11: Toxicological information

## Acute toxicity

- Oral: LD<sub>50</sub> Rat male oral 1100 mg/kg
- Inhalation: LC<sub>50</sub> Rat inhalation 2.51 mg/L/4 hr /d-trans-Allethrin/ From table
- 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**

The substance is irritating to the eyes, skin and respiratory tract.

### **STOT-repeated exposure**

no data available

### **Aspiration hazard**

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

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## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: LC50; Species: *Lepomis macrochirus* (Bluegill, weight 0.8 g); Conditions: freshwater; flow through, 12 deg C, pH 7.5, hardness 314 mg/L CaCO<sub>3</sub>; Concentration: 38.0 ug/L for 24 hr (95% confidence interval: 33.6-43 ug/L) /90% purity, technical material

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### **Persistence and degradability**

no data available

### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

### **Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **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

### **UN Number**

ADR/RID: UN3082 (For reference only, please check.)

IMDG: UN3082 (For reference only, please check.)

IATA: UN3082 (For reference only, please check.)

### **UN Proper Shipping Name**

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (For reference only, please check.)

### **Transport hazard class(es)**

ADR/RID: 9 (For reference only, please check.)

IMDG: 9 (For reference only, please check.)

IATA: 9 (For reference only, please check.)

### **Packing group, if applicable**

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

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

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

### **Environmental hazards**

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### **Special precautions for user**

no data available

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

no data available

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## SECTION 15: Regulatory information

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



#### **European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

#### **EC Inventory**

Listed.

#### **United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

#### **China Catalog of Hazardous chemicals 2015**

Not Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Listed.

#### **PICCS**

Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**

Listed.

#### **Korea Existing Chemicals List (KECL)**

Listed.

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## **SECTION 16: Other information**

### **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?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=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>

## Other Information

Carrier solvents used in commercial formulations may change physical and toxicological properties. See ICSCs 0212, 0213 and 0228.

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.