

SAFETY DATA SHEETS

FENTIN HYDROXIDE 96% TECHNICAL

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SECTION 1: IDENTIFICATION


Product identifier	Fentin hydroxide 96% technical
Other means of identification	N/A
Recommended use	Fungicide
Supplier's details	Zhejiang Heben Pesticide & Chemicals Co., Ltd Liandun Road, Houjing, Yanjiang Industrial Area, Wenzhou, Zhejiang, China
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SECTION 2: HAZARDS IDENTIFICATION

2.1 GHS classification of the substance or mixture (Ninth Revised Edition, 2021)

Physical hazards	None	None
Health hazards	Acute toxicity, oral, Category 3	H301
	Acute toxicity, dermal, Category 5	H313
	Acute toxicity, inhalation, Category 2	H330
	Skin corroding/irritation, Category 2	H315
	Serious eye damage/eye irritation, Category 1	H318
	Specific target organ toxicity, single exposure; Respiratory tract irritation, Category 3	H335
	Carcinogenicity, Category 2	H351
Environmental hazards	Reproductive toxicity, Category 2	H361
	Specific target organ toxicity, repeated exposure, Category 1	H372
	Hazardous to the aquatic environment, acute hazard, Category 1	H400
	Hazardous to the aquatic environment, long-term hazard, Category 1	H410

2.2 GHS label elements, including precautionary statements

Hazard pictograms	
Signal word	Danger
Hazard statement (s)	
H301	Toxic if swallowed.
H313	May be harmful in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Prevention statements	
P203	Obtain, read and follow all safety instructions before use.
P233	Keep container tightly closed.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands, face and body thoroughly after handling.
P265	Do not touch eyes.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
Response statements	
P320	Specific treatment is urgent (see the supplemental first aid instrument).
P321	Specific treatment (see the supplemental first aid instrument).
P330	Rinse mouth.
P391	Collect spillage.
P301+P316	IF SWALLOWED: Get emergency medical help immediately.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep at comfortable for

P332+P317 breathing.
 IF skin irritation occurs: Get medical help.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage statements

P403 + P233 Store in the well-ventilated place, keep container tightly closed.
 P405 Store locked up.

Disposal statements

P501 Dispose of contents/container in accordance with local regulations.

2.3 Other hazards which do not result in classification

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Common name, synonyms	Chemical identity	CAS number and other unique identifiers	The concentrations of the ingredients
Fentin hydroxide	triphenyltin hydroxide (IUPAC name)	CAS No.: 76-87-9 EU:200-990-6	96% Min
Other non-hazardous ingredients			< 4%

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

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

Eyes: For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport.

Inhalation: Move affected 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.

4.2 Most important symptoms/effects, acute and delayed

No such information is reported.

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

No antidote, no special treatment, please treat it symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

Use dry chemical, carbon dioxide, water spray, and foam.

5.2 Specific hazards arising from the chemical

May produce toxic fumes of triphenyltin compounds, carbon dioxide and carbon monoxide if burn.

5.3 Special protective equipment for firefighters

Should wear full-protective clothing, and self-contained breathing apparatus. Fight fire from safe distance and protected location. Avoid (reject) fire-fighting water to enter environment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear full protective clothing and self-contained breathing apparatus. Control the spill at its source. Dike area and absorb small spills with materials such as sand, sawdust, Zorb all, or dirt and place in suitable containers for recovery or disposal. Remove all contaminated clothing promptly and wash exposed body areas thoroughly with soap and water immediately after handling. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

6.2 Environmental precautions

Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems of any body of water. Keep spills and cleaning run-off out of municipal sewers and open bodies of water.

6.3 Methods and materials for containment and cleaning up

If there is contamination of crops or waterways, advise emergency services or state department of agriculture.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid direct or prolonged contact with skin and eyes. Do not breathe dust. Do not ingest. It is recommended that wear full protective clothing including face mask, face shield and gauntlets, all skin areas should be covered, when handling this product.

Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. And take a bath or wash hands completely with soap after use. Remove contaminated clothing and protective equipment before entering eating areas.

Prevents handling of incompatible substances or mixtures when use this product. Minimize the release of this product to the environment when handling this product.

7.2 Conditions for safe storage, including any incompatibilities

Store the material in a well-ventilated, dry, cool, out of light and secure area, out of reach of children and domestic animals, and in sealed original containers. Do not store food, beverages or tobacco products in the storage area. Store this product away from the incompatible materials, explosive

atmospheres, corrosive conditions, fire and heat, etc.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Contain no substances with occupational exposure limit values.

8.2 Appropriate engineering controls

Use only in an enclosed system. Use local exhaust ventilation. Safety shower. Use explosive dust handling controls.

8.3 Individual protection measures

Industrial hygiene: Remove and wash contaminated clothing promptly. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

Personal protective equipment

Respiratory protection:

Wear respirator with a particle filter mask (protection factor 20) conforming to European Norm EN149FFP3 or EN140P3 or equivalent.

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Protective gloves: Rubber gloves;

Eye protection: Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid
Color	White
Odor	Odorless
Melting point / freezing point	123°C
Boiling point or initial boiling point and boiling range	No information
Flammability	Not flammable
Lower and upper explosion limit/ flammability limit	Not applicable
Flash point	174 °C
Auto-ignition temperature	Not applicable
Decomposition temperature	< 123 °C (Decomposes below melting point at 80°C) (<i>PubChem</i> Fentin hydroxide)
pH value	6-9
Kinematic viscosity	Not applicable

Solubility	In water 1mg/l (20 °C). In Acetone 50000, Ethanol 10000, Dichloromethane 74000, Diethylether 171000. (all in g/l, 20 °C).
Partition coefficient n-octanol/water (log value)	K_{ow} logP = 3.43
Vapour pressure	0.047mPa (20 °C)
Density and/or relative density	1.54g/cm ³ (<i>PubChem</i> Fentin hydroxide)
Relative vapor density	Not applicable
Particle characteristics	Not known

(*Pesticide Properties DataBase*)

9.2 Other information

Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No reactivity under normal conditions.

10.2 Chemical stability

This product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

This product does not react or polymerize, releasing excess pressure or heat, or creating other hazardous conditions.

10.4 Conditions to avoid

Avoid fire, feed, food and beds of water.

10.5 Incompatible materials

Not compatible with Strong oxidizing, agents alkalis and acids.

10.6 Hazardous decomposition products

When involves in a fire, maybe release oxides of carbon and triphenyltin compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral LD₅₀ for rats 150-165 mg/kg. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*).

Acute dermal LD₅₀ for rats > 2000 mg/kg (Data from GLP report S200210030).

Acute inhalation LC₅₀ (4h) for rats 0.06mg/l. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*).

Skin corrosion/irritation	Irritating to skin on repeated application (Rabbit) (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>).
Serious eye damage/irritation	Irritating to eyes on repeated application (Rabbit) (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>).
Respiratory or skin sensitization	No available data.
Germ cell mutagenicity	No available data.
Carcinogenicity	No carcinogenic potential. (<i>PubChem Fentin acetate</i>)
Reproductive toxicity	No available data.
STOT-single exposure	No available data.
STOT-repeated exposure	No available data.
Aspiration hazard	No available data.
Further information	No available data.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Eco-toxicity

Birds	LC ₅₀ (8 d) for bobwhite quail 38.5 mg/kg diet. (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>)
Fish	LC ₅₀ (96 h) for fathead minnow 0.05 mg/l. (<i>Pesticide Properties DataBase</i>) NOEC (21 d) 0.009mg/l (<i>Pesticide Properties DataBase</i>)
Daphnia	LC ₅₀ for daphnia magna (48 h) 0.0165 mg/l. (<i>Pesticide Properties DataBase</i>)
Algae	LC ₅₀ (72 h) 0.0000024 mg /l. (<i>Pesticide Properties DataBase</i>)
Bees	Formulation not toxic to bees. (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>)
Worms	LD ₅₀ (14 d) 128 mg/kg. (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>)

12.2 Persistence and degradability

DT₅₀ 26 d (typical), DT₅₀ 26 d (lab at 20 °C) , DT₅₀ 20 d (field).
(*Pesticide Properties DataBase*)

12.3 Bio-accumulative potential

BCF = 4300 l/kg

(*Pesticide Properties DataBase*)

12.4 Mobility in soil

Koc 3104 ml/g.

(*Pesticide Properties DataBase*)

12.5 Other adverse effects

None

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Product

The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

13.2 Contaminated packaging

Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: TRANSPORT INFORMATION

IMDG:

UN number: 2786

UN proper shipping name: ORGANOTIN PESTICIDE, SOLID, TOXIC (96% Fentin hydroxide)

Transport hazard class: 6.1

Packing group: II

Environmental hazards: Marine pollutant

Special precautions for user: None.

Transport in bulk according to IMO instruments: Not applicable

SECTION 15: REGULATORY INFORMATION

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

WHO-classification: II (Moderately hazardous)

This product is listed in Hazardous Chemicals Catalogue (2015 Edition) of China (May 1th 2015 issued).

SECT 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 produces 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.