

SAFETY DATA SHEETS

PROPAMOCARB HYDROCHLORIDE 95% TECHNICAL

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SECTION 1: IDENTIFICATION


Product identifier	Propamocarb hydrochloride 95% 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 4	H302
	Acute toxicity, dermal, Category 5	H313
	Acute toxicity, inhalation, Category 5	H333
	Sensitiation, skin, Category 1, 1A, 1B	H317
	Serious eye damage/eye irritation, Category 2B	H320
Environmental hazards	Hazardous to the aquatic environment, acute hazard, Category 3	H402

2.2 GHS label elements, including precautionary statements

Hazard pictograms	
Signal word	Warning
Hazard statement (s)	Harmful if swallowed.
H302	

H313	May be harmful in contact with skin.
H333	May be harmful if inhaled.
H317	May cause an allergic skin reaction.
H320	Causes eye irritation.
H402	Harmful to aquatic life.

Prevention statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands and face thoroughly after handling.
P265	Do not touch eyes.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P301+P317	IF SWALLOWED: Get medical help.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P317	IF INHALED: Get medical help.
P333+P317	If skin irritation or rash occurs: Get medical help.
P337+P317	If eye irritation persists: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see ... on this label).
P330	Rinse mouth.

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.
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2.3 Other hazards which do not result in classification

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
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Common name, synonyms	Chemical identity	CAS number and other unique identifiers	The concentrations of the ingredients
Propamocarb hydrochloride	propyl 3-(dimethylamino)propylcarbamate hydrochloride (IUPAC name)	CAS No.: 25606-41-1 EC No.:247-125-9	95% Min
Other non-hazardous ingredients			< 5%

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 nitrogen oxides, 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	64.2 °C
Boiling point or initial boiling point and boiling range	Decomposes before boiling
Flammability	Not highly flammable
Lower and upper explosion limit/ flammability limit	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not expected to self-ignite
Decomposition temperature	150 °C
pH value	3-7
Kinematic viscosity	Not applicable
Solubility	In water 1005000 mg/l (20 °C). In acetone 560000, dichloromethane 4800, ethyl acetate 4800 (all in mg/l, 20 °C).
Partition coefficient n-octanol/water (log value)	K_{ow} logP = -1.3
Vapour pressure	0.87mPa (20 °C)
Density and/or relative density	1.16 g/cm ³ (20.5 °C, Purity 97.2%) (<i>EFSA Scientific Report (2006) 78, 1-80</i>)
Relative vapor density	Not applicable
Particle characteristics (<i>Pesticide Properties DataBase</i>)	Not known

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.

10.6 Hazardous decomposition products

When involves in a fire, maybe release carbon and nitrogen, chlorides and other toxic nitrogen compounds on combustion.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity	Acute oral LD ₅₀ for rats 2000-2900, mice 2650-2800, dogs 1450 mg/kg. (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>). Acute dermal LD ₅₀ for rats and mice >3000 mg/kg (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>). Acute inhalation LC ₅₀ (4h) for rats >5.54 mg/l air. (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>).
Skin corrosion/irritation	Not irritant to skin (Rabbits) (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>).
Serious eye damage/irritation	Slightly Irritating to eyes (Rabbits) (<i>BCPC, e-The Pesticide Manual, Thirteenth Edition</i>).
Respiratory or skin sensitization	Skin sensitizer (9/20 animals sensitised) (<i>EFSA Scientific Report (2006) 78, 1-80</i>)
Germ cell mutagenicity	No genotoxic potential. (<i>EFSA Scientific Report (2006) 78, 1-80</i>)
Carcinogenicity	No carcinogenic potential. (<i>EFSA Scientific Report (2006) 78, 1-80</i>)
Reproductive toxicity	The maternal NOAEL in this study was 37 mg/kg bw/day. (<i>EFSA Scientific Report (2006) 78, 1-80</i>)
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 LD₅₀ for mallard ducks and bobwhite quail >1842 mg/kg. LC₅₀ for bobwhite quail and mallard duck >4789 mg/kg. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*)

Fish LC₅₀ (96 h) for bluegill sunfish >92, rainbow trout >99 mg/l. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*)
NOEC for leptomis macrochirus (21 d) 12.3 mg/l. (*Pesticide Properties DataBase*)

Daphnia LC₅₀ (48 h) 106 mg/l. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*)
NOEC for daphnia magna (96 h) 22 mg/l. (*Pesticide Properties DataBase*)

Algae EC₅₀ (72 h) for Selenastrum capricornutum >85 mg/l, E_bC₅₀ >120 mg/l. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*)

Bees LD₅₀(oral) >84 µg/bee; (contact) >100 µg/bee. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*)

Worms LC₅₀ (14 d) >660 mg/kg soil.
NOEC for eisenia foetida (14 d) 362 mg/kg. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*)

12.2 Persistence and degradability

Rapidly degraded in soil by microbial processes, following a brief lag phase, DT₅₀ <30 d, DT₉₀ <70 d. (*BCPC, e-The Pesticide Manual, Thirteenth Edition*)

12.3 Bio-accumulative potential

BCF = 54 L/kg
(*Pesticide Properties DataBase*)

12.4 Mobility in soil

Precipitation is 200 mm, Time period are 5 days. Leachate: 0.043-0.260% total residues in leachate,

37.0-92.8% radioactivity retained in top 5 cm, 0.5-41.62% radioactivity retained in 5-10 cm column segment, 0.5-13.1% radioactivity retained in 10-15 cm column segment, <0.1-0.2% radioactivity retained in 15-20 cm column segment, <0.1% radioactivity retained in the remaining segments 20-25 cm and 25-30 cm. K_{OC} : 59.14-1680.79 mL/g (mean = 718.81 mL/g, 4soils, topsoil). (EFSA Scientific Report (2006) 78, 1-80)

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

According to the criteria of chemical classification settled in 《UN Recommendations on the Transport of Dangerous Goods Model Regulations》 (Twentieth revised edition), this substance is not dangerous.

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 not subject to any prohibitions or restrictions in China.

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.

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