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1. Identification

Product identifier used on the label

Permacap CS Controlled Release Insecticide

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, insecticide

Details of the supplier of the safety data sheet

Company:

BASF Agricultural Solutions US LLC 2 TW Alexander Drive Research Triangle Park, NC 27713 USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number: 985917

Registration number: EPA Registration number: 499-528

Synonyms: permethrin

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Asp. Tox. 1 Aspiration hazard Resp. Sens. 1 Respiratory sensitization

Skin Sens. 1 Skin sensitization

^{*} The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

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Aquatic Acute 1 Hazardous to the aquatic environment - acute STOT RE 2 Specific target organ toxicity — repeated

exposure

Carc. 2 Carcinogenicity
Acute Tox. 4 (oral) Acute toxicity

Aquatic Chronic 1 Hazardous to the aquatic environment - chronic

Label elements

Pictogram:



Signal Word: Danger

Hazard Statement:

H334 May cause allergy or asthma symptoms or breathing difficulties if

inhaled.

H317 May cause an allergic skin reaction.

H304 May be fatal if swallowed and enters airways.

H351 Suspected of causing cancer.

H373 May cause damage to organs (Liver, Thyroid gland) through prolonged

or repeated exposure.

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280 Wear protective gloves, protective clothing and eye protection or face

protection.

P260 Do not breathe dust/gas/mist/vapours.
P201 Obtain special instructions before use.
P273 Avoid release to the environment.

P202 Do not handle until all safety precautions have been read and

understood.

P284 In case of inadequate ventilation wear respiratory protection.

P272 Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):

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

breathing.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or physician.

P308 + P313 IF exposed or concerned: Get medical attention.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 If skin irritation or rash occurs: Get medical attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

P391 Collect spillage.

P331 Do NOT induce vomiting.

Precautionary Statements (Storage): P405 Store locked up.

Precautionary Statements (Disposal):

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

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Hazards not otherwise classified

Labeling of special preparations (GHS):

May cause paraesthesia. permethrin

The following percentage of the mixture consists of components(s) with unknown hazards regarding

the acute toxicity: 1 - 3 %

Product contains the following components and may cause an allergic skin reaction: Permethrin, Isocyanic acid, polymethylenepolyphenylene ester, Diphenylmethane-4,4'-diisocyanate (MDI), mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Permethrin

CAS Number: 52645-53-1 Content (W/W): 22.08 % Synonym: Permethrin

1,1'-Biphenyl, bis(1-methylethyl)-

CAS Number: 69009-90-1

Content (W/W): >= 10.0 - < 15.0% Synonym: No data available.

Diphenylmethane Diisocyanate, isomers and homologues

CAS Number: 9016-87-9 Content (W/W): >= 0.3 - < 1.0%

Synonym: Isocyanic acid polymethylenepolyphenylene ester; Polymethylene

polyphenylene isocyanate

Diphenylmethane-4,4'-diisocyanate (MDI)

CAS Number: 101-68-8

Content (W/W): >= 0.1 - < 1.0% Synonym: Diphenylmethandiisocyanat

Potassium hydroxide

CAS Number: 1310-58-3 Content (W/W): >= 0.1 - < 0.2% Synonym: Potassium hydroxide

bronopol

CAS Number: 52-51-7

Content (W/W): > 0.0 - < 0.1%

Synonym: 2-Bromo-2-nitro-1,3-propanediol; Bronopol

mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

CAS Number: 55965-84-9 Content (W/W): > 0.0 - < 0.1%

Synonym: 5-Chloro-2-methyl-3(2H)-isothiazolone mixt. with 2-methyl-3(2H)-

isothiazolone

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4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

If on skin:

Immediately wash thoroughly with soap and water, seek medical attention.

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention. Do not induce vomiting due to aspiration hazard.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: water spray, dry powder, foam, carbon dioxide

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, Hydrogen chloride, hydrogen bromide, nitrogen oxides, sulfur oxides, halogenated compounds, silica compounds

The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

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Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for safe handling

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect against heat. Protect contents from the effects of light. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

No special precautions necessary. The substance/product is non-combustible. Product is not explosive.

Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

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8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Components with occupational exposure limits

ACGIH, US: Permethrin TWA value 5 mg/m3:

> OSHA Z1: PEL 5 mg/m3;

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form: liquid

Odour: characteristic

Odour threshold: Not determined due to potential health hazard by inhalation.

Colour: off-white pH value: approx. 6 - 8 (20°C)

approx. 0 °C

Melting point: Information applies to the solvent.

Boiling point: approx. 100 °C

Information applies to the solvent.

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Flash point: Non-flammable. Flammability: not applicable

Lower explosion limit: As a result of our experience with this

product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with

the intended use.

Upper explosion limit: As a result of our experience with this

product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with

the intended use.

Autoignition: Based on the water content the

product does not ignite.

Vapour pressure: approx. 23 hPa

(20°C)

Information applies to the solvent.

Density: approx. 1.05 g/cm3

(20°C)

Vapour density: not applicable Partitioning coefficient n- not applicable

octanol/water (log Pow):

Thermal decomposition: No decomposition if stored and handled as

prescribed/indicated.

Viscosity, dynamic: approx. 143 mPa.s

Solubility in water: dispersible Evaporation rate: not applicable

Other Information: If necessary, information on other physical and chemical

parameters is indicated in this section.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

See SDS section 7 - Handling and storage.

Incompatible materials

strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

Decomposition products:

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Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. Of low toxicity after single ingestion. Of low toxicity after short-term inhalation. Virtually nontoxic after a single skin contact.

Oral

Type of value: ATE Value: 1,930 mg/kg

Information on: permethrin Type of value: LD50 Species: rat (female) Value: 2,280 mg/kg

Inhalation

Information on: permethrin-----

Dermal

Type of value: ATE Value: > 5,000 mg/kg

Information on: permethrin Type of value: LD50

Species: rat

Value: > 2,000 mg/kg No mortality was observed.

Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion

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Assessment of irritating effects: The product has not been tested. The statement has been derived from the properties of the individual components. Not irritating to eyes and skin.

Skin

Information on: permethrin

Species: rabbit Result: non-irritant

Prolonged exposure to the product can result in irritation of the skin and mucous membranes.

Eye

Information on: permethrin

Species: rabbit Result: non-irritant

Sensitization

Assessment of sensitization: Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Permethrin Assessment of sensitization:

Sensitization after skin contact possible.

Information on: Isocyanic acid, polymethylenepolyphenylene ester

Assessment of sensitization:

Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Assessment of sensitization:

Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract. As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material, or even as a result of vapour-only exposure. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

Information on: permethrin modified Buehler test Species: guinea pig

Result: Skin sensitizing effects were not observed in animal studies.

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Information on: 1,2-benzisothiazol-3(2H)-one

Guinea pig maximization test

Species: guinea pig Result: sensitizing

Method: OECD Guideline 406

Aspiration Hazard

The product has not been tested. The statement has been derived from the properties of the individual components. May also damage the lung at swallowing (aspiration hazard).

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Genetic toxicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Assessment of carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure. IARC Group 3 (not classifiable as to human carcinogenicity).

Information on: permethrin

Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests.

Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: permethrin

Assessment of teratogenicity: The substance did not cause malformations in animal studies. When given in high doses embryotoxicity was observed.

Other Information

Misuse can be harmful to health.

12. Ecological Information

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Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Very toxic to aquatic life with long lasting effects.

The product has not been tested. The statement has been derived from the properties of the individual components.

Toxicity to fish

Information on: permethrin

LC50 (96 h) 0.012 mg/l, Salmo salar

Aquatic invertebrates

Information on: permethrin

EC50 (96 h) 0.000019 mg/l, Americamysis bahia

, ,

Chronic toxicity to fish

Information on: permethrin

No observed effect concentration 0.0003 mg/l, Pimephales promelas

Chronic toxicity to aquatic invertebrates

Information on: permethrin

No observed effect concentration (30 d) 0.000011 mg/l, Mysidopsis bahia

Persistence and degradability

Assessment biodegradation and elimination (H2O)

The product has not been tested. The statement has been derived from the properties of the individual components.

Assessment biodegradation and elimination (H2O)

Information on: permethrin

Not readily biodegradable (by OECD criteria).

Bioaccumulative potential

Assessment bioaccumulation potential

The product has not been tested. The statement has been derived from the properties of the individual components.

Bioaccumulation potential

Information on: permethrin

Bioconcentration factor: 570 - 610, Lepomis macrochirus

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Accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: permethrin

Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control.

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport

USDOT

Hazard class: 9
Packing group: III
ID number: UN 308

ID number: UN 3082 Hazard label: 9, EHSM

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (contains PERMETHRIN)

Sea transport

IMDG

Hazard class: 9
Packing group: III

ID number: UN 3082
Hazard label: 9, EHSM
Marine pollutant: YES

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (contains PERMETHRIN)

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Air transport

IATA/ICAO

Hazard class: 9 Packing group: III

ID number: UN 3082 Hazard label: 9, EHSM

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (contains PERMETHRIN)

Further information

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

15. Regulatory Information

Federal Regulations

Registration status:

Crop Protection TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

EPCRA 313:

<u>CAS Number</u> Chemical name 52645-53-1 Permethrin

CERCLA RQ
1 LBSCAS Number
52645-53-1Chemical name
Permethrin

State regulations

State RTKCAS NumberChemical nameNJ52645-53-1PermethrinPA52645-53-1Permethrin

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING: This product can expose you to chemicals including METHANOL, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Labeling requirements under FIFRA

This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and workplace

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labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label

CAUTION:

KEEP OUT OF REACH OF CHILDREN.

Hazards to humans and domestic animals.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product.

Wash the outside of gloves before removing.

As soon as possible, wash thoroughly and change into clean clothing.

16. Other Information

SDS Prepared by:

BASF Agricultural Solutions US NA Product Regulations

SDS Prepared on: 2023/12/22

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

END OF DATA SHEET