



| Version | Revision Date: | SDS Number: | Date of last issue: 2024/04/06 |
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| | | | |

1. PRODUCT AND COMPANY IDENTIFICATION

| Chemical product name | : | Permethrin (5%) Formulation |
|---|---|--|
| Supplier's company name, ac Company name of supplier | | |
| Address | : | Kumagaya, Saitama Prefecture , Xicheng 810 MSD Co., Ltd. Menuma factory |
| Telephone | : | 048-588-8411 |
| E-mail address | : | EHSDATASTEWARD@msd.com |
| Emergency telephone number | : | +1-908-423-6000 |
| | | |

Recommended use of the chemical and restrictions on use

| Recommended use | : | Veterinary product |
|---------------------|---|--------------------|
| Restrictions on use | : | Not applicable |

2. HAZARDS IDENTIFICATION

GHS classification of chemical product

| Skin sensitisation | : Category 1 |
|---------------------------------------|---|
| Aspiration hazard | : Category 1 |
| Short-term (acute) aquatic hazard | : Category 1 |
| Long-term (chronic) aquatic hazard | : Category 1 |
| GHS label elements | |
| Hazard pictograms | |
| Signal word | : Danger |
| Hazard statements | H304 May be fatal if swallowed and enters airways. H317 May cause an allergic skin reaction. H410 Very toxic to aquatic life with long lasting effects. |
| Precautionary statements | Prevention: |



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| | | P272 Contamin the workplace. P273 Avoid rel | eathing mist or vapours. nated work clothing should not be allowed out of ease to the environment. otective gloves. |
| | | CENTER/ doct P302 + P352 I P331 Do NOT P333 + P313 I vice/ attention. | F ON SKIN: Wash with plenty of water. induce vomiting. f skin irritation or rash occurs: Get medical ad- ake off contaminated clothing and wash it before |
| | | Storage: P405 Store loc | ked up. |
| | | Disposal: | |

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

lines of the emergency assumed

Important symptoms and out- : Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

| | | - | |
|--------------------------------------|------------|-----------------------|----------|
| Chemical name | CAS-No. | Concentration (% w/w) | ENCS No. |
| Paraffin oils (petroleum), catalytic | 64742-71-8 | >= 50 - <= 75 | 9-1692 |
| dewaxed light | | | |
| Permethrin (ISO) | 52645-53-1 | 5 | 3-4010 |
| | | | |

4. FIRST AID MEASURES

| General advice | : | In the case of accident or if you feel unwell, seek medical ad- vice immediately. When symptoms persist or in all cases of doubt seek medical advice. |
|-------------------------|---|--|
| If inhaled | : | If inhaled, remove to fresh air. Get medical attention if symptoms occur. |
| In case of skin contact | : | In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. |





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| In case of eye contact : If swallowed : Most important symptoms and effects, both acute and delayed Protection of first-aiders : Notes to physician : | | | Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse. Flush eyes with water as a precaution. Get medical attention if irritation develops and persists. If swallowed, DO NOT induce vomiting. If vomiting occurs have person lean forward. Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person. May be fatal if swallowed and enters airways. May cause an allergic skin reaction. This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning. First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). Treat symptomatically and supportively. | | | | |
| 5. FIRE | 5. FIREFIGHTING MEASURES | | | | | | |
| Suitable extinguishing media | | : | Water spray Alcohol-resistant t Carbon dioxide (C Dry chemical | | | | |
| | Unsuitable extinguishing media | | None known. | | | | |
| | ecific hazards during fire- hting | : | Exposure to comb | pustion products may be a hazard to health. | | | |
| Ha uct | zardous combustion prod- ts | : | Chlorine compour Carbon oxides | nds | | | |
| Sp od | ecific extinguishing meth- s | : | cumstances and t Use water spray t | measures that are appropriate to local cir- he surrounding environment. o cool unopened containers. ged containers from fire area if it is safe to do | | | |
| | ecial protective equipment firefighters | : | | e, wear self-contained breathing apparatus. ective equipment. | | | |
| 6. ACC | IDENTAL RELEASE MEAS | SUR | ES | | | | |
| tive | rsonal precautions, protec- e equipment and emer- ncy procedures | : | | ective equipment. ing advice (see section 7) and personal pro- recommendations (see section 8). | | | |





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| | | Prevent spread barriers). Retain and disp | leakage or spillage if safe to do so. ing over a wide area (e.g. by containment or oil ose of contaminated wash water. s should be advised if significant spillages ained. |
| Methods and materials for : containment and cleaning up | | For large spills, ment to keep m be pumped, sto Clean up remain bent. Local or national posal of this ma employed in the mine which regu Sections 13 and | ert absorbent material. provide dyking or other appropriate contain- aterial from spreading. If dyked material can re recovered material in appropriate container. ning materials from spill with suitable absor- al regulations may apply to releases and dis- terial, as well as those materials and items e cleanup of releases. You will need to deter- ulations are applicable. d 15 of this SDS provide information regarding national requirements. |

7. HANDLING AND STORAGE

| Handling | | |
|--|----|---|
| Technical measures | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| Local/Total ventilation Advice on safe handling | :: | Use only with adequate ventilation. Do not get on skin or clothing. Avoid breathing mist or vapours. Do not swallow. Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as- sessment Keep container tightly closed. |
| | | Take care to prevent spills, waste and minimize release to the environment. |
| Avoidance of contact Hygiene measures | : | Oxidizing agents If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls. |



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| Stora | ige | | |
| Conditions for safe storage | | Store locked Keep tightly | • |
| Materials to avoid | | | with the following product types: |
| Pack | aging material | : Unsuitable n | naterial: None known. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold limit value and permissible exposure limits for each component in the work environment

| Components | CAS-No. | Value type (Form of exposure) | Control parame- ters / Concentra- tion standard / Permissible con- centration | Basis |
|------------------|------------|-------------------------------------|---|----------|
| Permethrin (ISO) | 52645-53-1 | TWA | 80 µg/m3 (OEB 3) | Internal |
| | | Wipe limit | 800 µg/100 cm ² | Internal |

| Engineering measures : | Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip- less quick connections). All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face con- tainment devices). Minimize open handling. |
|-------------------------------|--|
| Personal protective equipment | |

| Respiratory protection Filter type Hand protection | : | If adequate local exhaust ventilation is not available or expo- sure assessment demonstrates exposures outside the rec- ommended guidelines, use respiratory protection. Combined particulates and organic vapour type |
|--|---|---|
| Material | : | Chemical-resistant gloves |
| Remarks Eye protection Skin and body protection | : | Consider double gloving. Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols. Work uniform or laboratory coat. |



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| | | | task being perform posable suits) to a | arments should be used based upon the ned (e.g., sleevelets, apron, gauntlets, dis- avoid exposed skin surfaces. degowning techniques to remove potentially thing. |
| 9. PHYSIC | CAL AND CHEMICAL P | ROF | PERTIES | |
| Physi | ical state | : | liquid | |
| Colou | ır | : | clear, amber | |
| Odou | ır | : | odourless | |
| Odou | ır Threshold | : | No data available | e |
| Meltir | ng point/freezing point | : | No data available | e |
| | ng point, initial boiling and boiling range | : | No data available | 9 |
| Flam | mability (solid, gas) | : | Not applicable | |
| Flam | mability (liquids) | : | No data available | e |
| U | er explosion limit and upp pper explosion limit / Up- er flammability limit | | | |
| | ower explosion limit / ower flammability limit | : | No data available | 9 |
| Flash | n point | : | No data available | e |
| Deco | mposition temperature | : | No data available | 9 |
| рН | | : | No data available | 9 |
| Evap | oration rate | : | No data available | 9 |
| Auto- | ignition temperature | : | No data available | 9 |
| Visco Vi | osity scosity, dynamic | : | 39 Pas | |
| Vi | scosity, kinematic | : | No data available | 9 |
| | bility(ies) /ater solubility | : | immiscible | |
| | ion coefficient: n- nol/water | : | Not applicable | |



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|---|---|----------------------------|---|---|--|
| Dens | ur pressure ity and / or relative dens elative density | ity | < 2 mmHg (25 °C).876 (20 °C) | 2) | |
| De | ensity | : 1 | No data available | 2 | |
| Relat | ive vapour density | : 1 | No data available | 9 | |
| Explo | sive properties | : 1 | Not explosive | | |
| Oxidi | zing properties | : 1 | The substance o | r mixture is not classified as oxidizing. | |
| Moleo | cular weight | : 1 | No data available | 9 | |
| | cle characteristics article size | : 1 | Not applicable | | |
| I 0. STAB | | | lot classified as | a reactivity hazard. | |
| Chem Possi tions Cond Incom | nical stability ibility of hazardous reac- itions to avoid npatible materials rdous decomposition | 2 : 0 : 0 : 1 : 0 | Stable under nor Can react with st None known. Dxidizing agents | | |
| 1. TOXIC | OLOGICAL INFORMA | TION | | | |
| Inforn expos | nation on likely routes of sure | S Ir | halation kin contact gestion ye contact | | |
| | e toxicity lassified based on availa | able inf | ormation. | | |
| Prod | uct: | | | | |
| Acute | e oral toxicity | | Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method | | |
| Acute | inhalation toxicity | E T | cute toxicity esti xposure time: 4 est atmosphere: lethod: Calculati | h dust/mist | |



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| | | | | |
| <u>Com</u> | oonents: | | | |
| Paraf | fin oils (petroleum), | cataly | tic dewaxed lig/ | ht: |
| Acute | oral toxicity | : | LD50 (Rat): > 5 Method: OECD | ,000 mg/kg Test Guideline 401 |
| Acute | inhalation toxicity | : | LC50 (Rat): > 5 Exposure time: Test atmospher Method: OECD | 4 h |
| Acute | e dermal toxicity | : | LD50 (Rabbit): : Method: OECD | > 5,000 mg/kg Test Guideline 402 |
| Perm | ethrin (ISO): | | | |
| Acute | oral toxicity | : | LD50 (Rat): 480 |) - 554 mg/kg |
| Acute | inhalation toxicity | : | LC50 (Rat): 2.3 Exposure time: Test atmospher | 4 h |
| Acute | e dermal toxicity | : | LD50 (Rabbit): : | > 2,000 mg/kg |
| II Skin | corrosion/irritation | | | |
| - | assified based on ava | ailable | information. | |
| | oonents: | | | |
| | | | | |
| | fin oils (petroleum), | cataly | | nt: |
| Speci Resu | | : | Rabbit No skin irritatior | 1 |
| Perm | ethrin (ISO): | | | |
| Speci | es | : | Rabbit | |
| Resu | lt | : | No skin irritation | 1 |
| Serio | us eye damage/eye i | irritati | ion | |
| | assified based on ava | | | |

Paraffin oils (petroleum), catalytic dewaxed light:

| Species Result | : | Rabbit |
|-------------------|---|-------------------|
| Result | : | No eye irritation |

Permethrin (ISO):

| Species Result | : | Rabbit |
|-------------------|---|-------------------|
| Result | : | No eye irritation |





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| | | | | |

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:

Paraffin oils (petroleum), catalytic dewaxed light:

| Test Type | : Buehler Test |
|---|---------------------------|
| Exposure routes | : Skin contact |
| Species | : Guinea pig |
| Method | : OECD Test Guideline 406 |
| Test Type Exposure routes Species Method Result | : negative |

Permethrin (ISO):

| Exposure routes Species | : | Buehler Test Skin contact Guinea pig positive |
|----------------------------|---|---|
| Assessment | : | Probability or evidence of skin sensitisation in humans |

Germ cell mutagenicity

Not classified based on available information.

Components:

Paraffin oils (petroleum), catalytic dewaxed light:

| Genotoxicity in vitro | : | Test Type: Chromosome aberration test in vitro Result: negative |
|-----------------------|---|--|
| | | Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative |
| Genotoxicity in vivo | : | Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Method: OECD Test Guideline 474 Result: negative |
| Permethrin (ISO): | | |
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES) Result: negative |
| | | Test Type: In vitro mammalian cell gene mutation test Result: negative |





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| | | Result: negative Test Type: DNA thesis in mamm Result: negative Test Type: Chro Result: positive | damage and repair, unscheduled DNA syn alian cells (in vitro) e omosome aberration test in vitro |
| Genotoxicity in vivo | | cytogenetic ass Species: Mouse Result: negative Test Type: Muta | agenicity (in vivo mammalian bone-marrow , chromosomal analysis) |
| | | Test Type: Rod Species: Mouse Result: negative | |
| | | cytogenetic ass Species: Rat | te: Intraperitoneal injection |
| | | | |
| | cell mutagenicity - | : Weight of evide cell mutagen. | nce does not support classification as a ger |

Not classified based on available information.

Components:

Paraffin oils (petroleum), catalytic dewaxed light:

| Species Application Route Exposure time Result | : Mouse |
|---|----------------|
| Application Route | : Skin contact |
| Exposure time | : 78 weeks |
| Result | : negative |



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| | | | | | | |
| Perm | ethrin (ISO): | | | | | |
| Speci Resul | ies | : | Rat negative | | | |
| Speci Resul | | : | Mouse negative | | | |
| Not cl | oductive toxicity lassified based on avai ponents: | lable | information. | | | |
| Perm | ethrin (ISO): | | | | | |
| Effect | ts on fertility | : | Test Type: Two- Species: Rat Application Rou Result: negative | | | |
| Effect ment | ts on foetal develop- | : | | | | |
| | - single exposure lassified based on avai | lable | information. | | | |
| | - repeated exposure | | | | | |
| | Not classified based on available information. | | | | | |
| Repe | ated dose toxicity | | | | | |
| <u>Com</u> | ponents: | | | | | |
| Paraf | fin oils (petroleum), c | ataly | tic dewaxed light | nt: | | |

| | | | Ŭ |
|---|---------|---|-------------------------|
| Species NOAEL Application Exposure Method | | : | Rat |
| NOAEL | | : | >= 2,000 mg/kg |
| Application | n Route | : | Skin contact |
| Exposure | time | : | 90 Days |
| Method | | : | OECD Test Guideline 411 |
| | | | |

Permethrin (ISO):

| Species | : Rat |
|-------------------|---------------|
| NOAEL | : 0.2201 mg/l |
| Application Route | : Inhalation |
| Exposure time | : 90 Days |
| Species | : Rat |
| NOAEL | : 175 mg/kg |
| Application Route | : Ingestion |
| Exposure time | : 90 Days |



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Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

Paraffin oils (petroleum), catalytic dewaxed light:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Paraffin oils (petroleum), catalytic dewaxed light:

| Toxicity to fish | : | LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203 |
|--|---|--|
| Toxicity to daphnia and other aquatic invertebrates | : | EL50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction |
| Toxicity to algae/aquatic plants | : | EL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 |
| | | NOELR (Pseudokirchneriella subcapitata (green algae)): 100 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOELR (Daphnia (water flea)): 10 mg/l Exposure time: 21 d Test substance: Water Accommodated Fraction |
| Toxicity to microorganisms | : | NOEC: > 2.17 mg/l Exposure time: 10 min |
| Permethrin (ISO): | | |
| Toxicity to fish | : | LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l Exposure time: 96 h |
| Toxicity to daphnia and other | : | EC50 (Daphnia magna (Water flea)): 0.0001 mg/l |

SAFETY DATA SHEET



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| | | | | |
| aquat | ic invertebrates | | Exposure time: | 48 h |
| Toxici plants | ity to algae/aquatic | : | ErC50 (Pseudol mg/l Exposure time: 7 | kirchneriella subcapitata (green algae)): > 1.1 72 h |
| | | | EC10 (Pseudoki mg/l Exposure time: 7 | irchneriella subcapitata (green algae)): 0.002 72 h |
| | ctor (Acute aquatic tox- | : | 10,000 | |
| icity) Toxici icity) | ity to fish (Chronic tox- | : | Exposure time: 3 | erio (zebra fish)): 0.00041 mg/l 35 d Test Guideline 210 |
| | ity to daphnia and other ic invertebrates (Chron- icity) | : | Exposure time: 2 | i magna (Water flea)): 0.0047 μg/l 21 d Test Guideline 211 |
| | ctor (Chronic aquatic | : | 10,000 | |
| toxicit Toxici | y) ity to microorganisms | : | EC50: > 1,000 n Exposure time: 3 | |
| II Persi | stence and degradabili | ty | | |
| Comp | oonents: | | | |
| | fin oils (petroleum), ca | taly | - | |
| Biode | gradability | : | Biodegradation: Exposure time: 2 | |
| II Perm | ethrin (ISO): | | | |
| | gradability | : | | ily biodegradable. Test Guideline 301F |
| Bioac | cumulative potential | | | |
| <u>Comp</u> | oonents: | | | |
| Perm | ethrin (ISO): | | | |
| | | | Species: Lepom | is macrochirus (Bluegill sunfish) |
| | cumulation | • | Bioconcentration | n factor (BCF): 570 |





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| Mobil | lity in soil | | |
| | ita available | | |
| | rdous to the ozone lay | /er | |
| | adverse effects | | |
| 3. DISPO | SAL CONSIDERATIO | NS | |
| Diene | osal methods | | |
| • | e from residues | | accordance with local regulations. |
| Conta | minated packaging | Do not dispose of waste into sewer. Empty containers should be taken to an approved waste han- dling site for recycling or disposal. If not otherwise specified: Dispose of as unused product. | |
| 4. TRAN | SPORT INFORMATIO | N | |
| | | | |
| Interr | national Regulations | | |
| UNR | | | |
| | umber | : UN 3082 | |
| | er shipping name | : ENVIRONMEN N.O.S. | NTALLY HAZARDOUS SUBSTANCE, LIQUID |
| Prope | | : ENVIRONMEI N.O.S. (Permethrin (I | |
| Prope | | : ENVIRONMEI N.O.S. (Permethrin (I : 9 | |
| Prope | ng group | : ENVIRONMEI N.O.S. (Permethrin (I | |
| Prope Class Packi Label | ng group | : ENVIRONMEI N.O.S. (Permethrin (I : 9 : III | |
| Prope Class Packi Label | ng group s onmentally hazardous | : ENVIRONMEN N.O.S. (Permethrin (I : 9 : III : 9 | |
| Prope Class Packi Label Enviro IATA | ng group s onmentally hazardous - DGR) No. | ENVIRONMENN.O.S. (Permethrin (I 9 III 9 yes UN 3082 | SO)) |
| Prope Class Packi Label Enviro IATA UN/IE Prope | ng group s onmentally hazardous -DGR) No. er shipping name | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) | SO)) ly hazardous substance, liquid, n.o.s. |
| Prope Class Packi Label Enviro IATA UN/IE Prope | ng group s onmentally hazardous -DGR 0 No. er shipping name | : ENVIRONMEN N.O.S. (Permethrin (I) : 9 : III : 9 : yes : UN 3082 : Environmental (Permethrin (I) : 9 | SO)) ly hazardous substance, liquid, n.o.s. |
| Prope Class Packi Label Enviro IATA UN/IE Prope Class Packi | ng group s onmentally hazardous -DGR 0 No. er shipping name ng group | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III | SO)) ly hazardous substance, liquid, n.o.s. SO)) |
| Prope Class Packi Label Enviro IATA UN/IE Prope Class Packi Label Packi aircra | ng group s onmentally hazardous -DGR) No. er shipping name ng group s ng instruction (cargo ft) | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III Miscellaneous 964 | SO)) ly hazardous substance, liquid, n.o.s. SO)) |
| Prope Class Packi Label Enviro IATA UN/IE Prope Class Packi Label Packi aircra Packi ger ai | ng group s onmentally hazardous -DGR 0 No. er shipping name ng group s ng instruction (cargo ft) ng instruction (passen- rcraft) | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III Miscellaneous 964 964 | SO)) ly hazardous substance, liquid, n.o.s. SO)) |
| Prope Class Packi Label Enviro IATA UN/IE Prope Class Packi Label Packi aircra Packi ger ai | ng group s onmentally hazardous -DGR 0 No. er shipping name ng group s ng instruction (cargo ft) ng instruction (passen- | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III Miscellaneous 964 | SO)) ly hazardous substance, liquid, n.o.s. SO)) |
| Prope Class Packi Label Enviro IATA UN/IE Prope Class Packi Label Packi aircra Packi ger ai Enviro | ng group s onmentally hazardous -DGR 0 No. er shipping name ng group s ng instruction (cargo ft) ng instruction (passen- rcraft) onmentally hazardous -Code | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III Miscellaneous 964 964 yes | SO)) ly hazardous substance, liquid, n.o.s. SO)) |
| Prope Class Packi Label Enviro UN/IE Prope Class Packi Label Packi aircra Packi ger ai Enviro IMDG | ng group s onmentally hazardous -DGR 0 No. er shipping name ng group s ng instruction (cargo ft) ng instruction (passen- rcraft) onmentally hazardous | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III Miscellaneous 964 964 yes UN 3082 ENVIRONMENN.O.S. | SO)) ly hazardous substance, liquid, n.o.s. SO)) |
| Prope Class Packi Label Enviro IATA UN/IE Prope Class Packi Label Packi aircra Packi ger ai Enviro IMDG UN nu Prope | ng group s onmentally hazardous -DGR 0 No. er shipping name ng group s ng instruction (cargo ft) ng instruction (passen- rcraft) onmentally hazardous i-Code umber er shipping name | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III Miscellaneous 964 964 yes UN 3082 ENVIRONMENN.O.S. (Permethrin (I) | SO)) ly hazardous substance, liquid, n.o.s. SO)) |
| Prope Class Packi Label Enviro IATA UN/IE Prope Class Packi Label Packi ger ai Enviro IMDG UN no Prope | ng group s onmentally hazardous -DGR 0 No. er shipping name ng group s ng instruction (cargo ft) ng instruction (passen- rcraft) onmentally hazardous i-Code umber er shipping name | ENVIRONMENN.O.S. (Permethrin (I) 9 III 9 yes UN 3082 Environmental (Permethrin (I) 9 III Miscellaneous 964 964 yes UN 3082 ENVIRONMENN.O.S. | SO)) ly hazardous substance, liquid, n.o.s. SO)) |





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| EmS Code | : | F-A, S-F |
|------------------|---|----------|
| Marine pollutant | : | yes |

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

Refer to section 15 for specific national regulation.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

ERG Code : 171

15. REGULATORY INFORMATION

Related Regulations

Fire Service Law

Not applicable to dangerous materials / designated flammables.

Chemical Substance Control Law

Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacture

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Substances Prevented From Impairment of Health

Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity

Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity

Not applicable

Substances Subject to be Notified Names

Article 57-2 (Enforcement Order Table 9)

| Chemical name | Concentration (%) | Remarks |
|---|-------------------|----------------------|
| Mineral oil | >=50 - <=75 | - |
| m-phenoxybenzyl 3-(2,2-dichlorovinyl)- 2,2-dimethylcyclopropanecarboxylate | >=1 - <10 | From April 1st, 2026 |



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| | | | |

Substances Subject to be Indicated Names Article 57 (Enforcement Order Article 18) Chemical name Remarks Mineral oil m-phenoxybenzyl 3-(2,2-dichlorovinyl)-2,2-From April 1st, 2026 dimethylcyclopropanecarboxylate Skin and Eye Damage Substances for PPE Requirements (ISHL MO Art. 594-2) Not applicable Carcinogenic Substances (Article 577-2 of the Occupational Health and Safety Regulations) Not applicable Ordinance on Prevention of Hazards Due to Specified Chemical Substances Not applicable **Ordinance on Prevention of Lead Poisoning** Not applicable Ordinance on Prevention of Tetraalkyl Lead Poisoning Not applicable Ordinance on Prevention of Organic Solvent Poisoning Not applicable Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances) Not applicable **Poisonous and Deleterious Substances Control Law** Not applicable Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Class I Designated Chemical Substances

| Chemical name | Administration number | Concentration (%) |
|--|-----------------------|-------------------|
| 3-Phenoxybenzyl 3-(2,2-dichlorovinyl)- | 350 | 5.0 |
| 2,2-dimethylcyclopropanecarboxylate | | |

High Pressure Gas Safety Act

Not applicable

Explosive Control Law

Not applicable

Vessel Safety Law

Miscellaneous dangerous substances and articles (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law

Miscellaneous dangerous substances and articles (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)





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|--|---------------------------|---|----------------------------|---|--|--|--|
| | | | | | | | |
| Marine Pollution and Sea Disaster Prevention etc Law | | | | | | | |
| Bulk ti | ransportation | : | Not classified as | noxious liquid substance | | | |
| Pack t | transportation | : | Classified as mar | ine pollutant | | | |
| Narcotics and Psychotropics Control Act Narcotic or Psychotropic Raw Material (Export / Import Permission) Not applicable Specific Narcotic or Psychotropic Raw Material (Export / Import permission) Not applicable | | | | | | | |
| Waste Disposal and Public Cleansing Law Industrial waste | | | | | | | |
| The components of this product are reported in the following inventories: | | | | | | | |
| AICS | | : | not determined | | | | |
| DSL | | : | not determined | | | | |
| IECSO | 2 | : | not determined | | | | |
| | | | | | | | |

16. OTHER INFORMATION

In this SDS, if the concentration of substances subject to notification under the Industrial Safety and Health Law is indicated as a range, it includes cases where it is a trade secret.

Further information

| Sources of key data used to : | Internal technical data, data from raw material SDSs, OECD |
|-------------------------------|--|
| compile the Safety Data | eChem Portal search results and European Chemicals Agen- |
| Sheet | cy, http://echa.europa.eu/ |

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format

: yyyy/mm/dd

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International

SAFETY DATA SHEET



Permethrin (5%) Formulation

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Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose): MARPOL - International Convention for the Prevention of Pollution from Ships: n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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