

Indoxacarb / Permethrin Formulation

Version 2.0 Revision Date: 09/16/2019 SDS Number: 27902-00013 Date of last issue: 05.06.2018
Date of first issue: 04.11.2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Indoxacarb / Permethrin Formulation

Manufacturer or supplier's details

Company : MSD
Address : 50 Tuas West Drive
Singapore - Singapore 638408
Telephone : 908-740-4000
Emergency telephone number : 65 6697 2111 (24/7/365)
E-mail address : EHSDATASTEWARD@msd.com
Telefax : 908-735-1496

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin sensitisation : Category 1
Specific target organ toxicity - single exposure : Category 3
Specific target organ toxicity - repeated exposure : Category 1 (Blood, Nervous system, Heart)
Short-term (acute) aquatic hazard : Category 1
Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

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Hazard statements	: H226 Flammable liquid and vapour. H302 + H332 Harmful if swallowed or if inhaled. H317 May cause an allergic skin reaction. H336 May cause drowsiness or dizziness. H372 Causes damage to organs (Blood, Nervous system, Heart) through prolonged or repeated exposure. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	: Prevention: P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P233 Keep container tightly closed. P241 Use explosion-proof electrical/ ventilating/ lighting equipment. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P260 Do not breathe mist or vapours. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. 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: P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. P314 Get medical advice/ attention if you feel unwell. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P362 + P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage. Storage: P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

Vapours may form explosive mixture with air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Permethrin (ISO)	52645-53-1	>= 30 -< 50
1-Methoxy-2-propanol	107-98-2	>= 30 -< 50
Indoxacarb (ISO)	173584-44-6	>= 10 -< 20

4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
 When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.
 If not breathing, give artificial respiration.
 If breathing is difficult, give oxygen.
 Get medical attention if symptoms occur.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water.
 Remove contaminated clothing and shoes.
 Get medical attention.
 Wash clothing before reuse.
 Thoroughly clean shoes before reuse.
- In case of eye contact : Flush eyes with water as a precaution.
 Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.
 Get medical attention.
 Rinse mouth thoroughly with water.
 Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed or if inhaled.
 May cause an allergic skin reaction.
 May cause drowsiness or dizziness.
 Causes damage to organs through prolonged or repeated exposure.
- Protection of first-aiders : 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).
- Notes to physician : Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
 Alcohol-resistant foam
 Carbon dioxide (CO₂)
 Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.
 Flash back possible over considerable distance.
 Vapours may form explosive mixtures with air.
 Exposure to combustion products may be a hazard to health.

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|--|---|---|
| <div style="border-left: 3px double black; padding-left: 5px;">Hazardous combustion products</div> | : | Carbon oxides
Chlorine compounds |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area. |
| Special protective equipment for firefighters | : | In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment. |
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6. ACCIDENTAL RELEASE MEASURES

- | | | |
|---|---|--|
| Personal precautions, protective equipment and emergency procedures | : | Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations. |
| Environmental precautions | : | Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | : | Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapours/mists with a water spray jet.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. |
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7. HANDLING AND STORAGE

- | | | |
|--|---|---|
| Technical measures | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| <div style="border-left: 3px double black; padding-left: 5px;">Local/Total ventilation</div> | : | If sufficient ventilation is unavailable, use with local exhaust ventilation.
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation. |
| Advice on safe handling | : | Do not get on skin or clothing.
Do not breathe vapours or spray mist. |

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- 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 assessment
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labelled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
Keep away from heat and sources of ignition.
- Materials to avoid : Do not store with the following product types:
Self-reactive substances and mixtures
Organic peroxides
Oxidizing agents
Flammable gases
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Poisonous gases
Explosives

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Permethrin (ISO)	52645-53-1	TWA	80 µg/m ³ (OEB 3)	Internal
		Wipe limit	800 µg/100 cm ²	Internal
1-Methoxy-2-propanol	107-98-2	PEL (long term)	100 ppm 369 mg/m ³	SG OEL
		PEL (short term)	150 ppm 553 mg/m ³	SG OEL
		TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		Indoxacarb (ISO)	173584-44-6	TWA
Further information: Skin sensitisation				
		Wipe limit	100 µg/100 cm ²	Internal

- Engineering measures** : Minimize workplace exposure concentrations.
If sufficient ventilation is unavailable, use with local exhaust ventilation.
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

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Personal protective equipment

Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Filter type	:	Combined particulates and organic vapour type
Hand protection		
Material	:	Chemical-resistant gloves
Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of workday.
Eye protection	:	Wear the following personal protective equipment: Safety glasses
Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Hygiene measures	:	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. Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	Clear white to yellow.
Odour	:	ether-like
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	33.5 °C

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Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	1.096
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle size	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Flammable liquid and vapour. Vapours may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

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Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 609.38 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 4.48 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:**Permethrin (ISO):**

Acute oral toxicity : LD50 (Rat): 480 - 554 mg/kg

Acute inhalation toxicity : LC50 (Rat): 2.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

1-Methoxy-2-propanol:

Acute oral toxicity : LD50 (Rat): 4,016 mg/kg

Acute inhalation toxicity : LC50 (Mouse): < 22.2 mg/l
Exposure time: 6 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Indoxacarb (ISO):

Acute oral toxicity : LD50 (Rat, female): 179 mg/kg
Symptoms: Loss of reflexes, Breathing difficulties, Tremors

LD50 (Rat, male): 843 mg/kg

Acute inhalation toxicity : LC50 (Rat, female): 4.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

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Components:**Permethrin (ISO):**

Species : Rabbit
 Result : No skin irritation

1-Methoxy-2-propanol:

Species : Rabbit
 Result : No skin irritation

Indoxacarb (ISO):

Result : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:**Permethrin (ISO):**

Species : Rabbit
 Result : No eye irritation

1-Methoxy-2-propanol:

Species : Rabbit
 Result : No eye irritation

Indoxacarb (ISO):

Result : No eye irritation

Respiratory or skin sensitisation**Skin sensitisation**

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:**Permethrin (ISO):**

Test Type : Buehler Test
 Exposure routes : Skin contact
 Species : Guinea pig
 Result : positive

Assessment : Probability or evidence of skin sensitisation in humans

1-Methoxy-2-propanol:

Test Type : Maximisation Test
 Exposure routes : Skin contact
 Species : Guinea pig

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Result : negative

Indoxacarb (ISO):

Test Type : Maximisation Test
 Species : Guinea pig
 Result : positive

Germ cell mutagenicity

Not classified based on available information.

Components:**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

Test Type: Chromosome aberration test in vitro
 Result: negative

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
 Result: negative

Test Type: Chromosome aberration test in vitro
 Result: positive

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cyto-genetic assay)
 Species: Mouse
 Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cyto-genetic test, chromosomal analysis)
 Species: Mouse
 Result: negative

Test Type: Rodent dominant lethal test (germ cell) (in vivo)
 Species: Mouse
 Result: negative

Test Type: Mammalian erythrocyte micronucleus test (in vivo cyto-genetic assay)
 Species: Rat
 Application Route: Intraperitoneal injection
 Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cyto-genetic test, chromosomal analysis)
 Species: Mouse
 Application Route: Ingestion
 Result: positive

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Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

1-Methoxy-2-propanol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Result: negative

Test Type: Chromosome aberration test in vitro
 Result: negative

Test Type: In vitro mammalian cell gene mutation test
 Result: negative

Test Type: In vitro sister chromatid exchange assay in mammalian cells
 Result: equivocal

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
 Method: OECD Test Guideline 482
 Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
 Species: Mouse
 Application Route: Intraperitoneal injection
 Result: negative

Indoxacarb (ISO):

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Result: negative

Test Type: Chromosomal aberration
 Test system: mammalian cells
 Result: negative

Test Type: In vitro mammalian cell gene mutation test
 Test system: Chinese hamster ovary cells
 Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
 Species: Mouse
 Cell type: Bone marrow
 Result: negative

Carcinogenicity

Not classified based on available information.

Components:**Permethrin (ISO):**

Species : Rat

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Result : negative

Species : Mouse
 Result : negative

1-Methoxy-2-propanol:

Species : Rat
 Application Route : inhalation (vapour)
 Exposure time : 2 Years
 Method : OECD Test Guideline 453
 Result : negative

Indoxacarb (ISO):

Species : Rat, male and female
 Application Route : oral (feed)
 Exposure time : 2 Years
 Frequency of Treatment : daily
 Result : negative

Species : Mouse, male and female
 Application Route : oral (feed)
 Exposure time : 18 Months
 Frequency of Treatment : daily
 Result : negative

Reproductive toxicity

Not classified based on available information.

Components:**Permethrin (ISO):**

Effects on fertility : Test Type: Two-generation reproduction toxicity study
 Species: Rat
 Application Route: Ingestion
 Result: negative

Effects on foetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
 Species: Rat
 Application Route: Ingestion
 Result: negative

1-Methoxy-2-propanol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
 Species: Rat
 Application Route: inhalation (vapour)
 Method: OECD Test Guideline 416
 Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
 Species: Rat
 Application Route: inhalation (vapour)

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			Result: negative
Indoxacarb (ISO):			
			Effects on fertility
			: Test Type: Two-generation study Species: Rat Application Route: Oral General Toxicity F1: NOAEL: 1.3 mg/kg body weight Result: negative
			Test Type: Two-generation study Species: Rat Application Route: Oral General Toxicity - Parent: NOAEL: 1.3 mg/kg body weight General Toxicity F1: NOAEL: > 6.7 mg/kg body weight Result: Embryotoxic effects and adverse effects on the offspring were detected.
			Effects on foetal development
			: Test Type: Development Species: Rat Developmental Toxicity: NOAEL: 2 mg/kg body weight Result: No teratogenic effects
			Test Type: Development Species: Rabbit Application Route: Oral Developmental Toxicity: NOAEL: 500 mg/kg body weight Result: No adverse effects
			Test Type: Development Species: Rat Application Route: Oral Developmental Toxicity: NOAEL: 10 mg/kg body weight
			Test Type: Development Species: Rat Application Route: Oral Developmental Toxicity: LOAEL: 100 mg/kg body weight

STOT - single exposure

May cause drowsiness or dizziness.

Components:**1-Methoxy-2-propanol:**

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

Causes damage to organs (Blood, Nervous system, Heart) through prolonged or repeated exposure.

Components:**Indoxacarb (ISO):**

Target Organs : Blood, Nervous system, Heart

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Assessment : Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Components:****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

1-Methoxy-2-propanol:

Species : Rat
 NOAEL : 919 mg/kg
 Application Route : Ingestion
 Exposure time : 35 Days

Species : Rat
 NOAEL : 1.1 mg/l
 Application Route : inhalation (vapour)
 Exposure time : 2 yr
 Method : OECD Test Guideline 453

Species : Rabbit
 NOAEL : 1,838 mg/kg
 Application Route : Skin contact
 Exposure time : 90 Days

Indoxacarb (ISO):

Species : Rat, male and female
 NOAEL : 1.7 mg/kg
 LOAEL : 4.1 mg/kg
 Application Route : Oral
 Exposure time : 90 d
 Target Organs : Blood, Central nervous system

Species : Rat, male and female
 NOAEL : 50 mg/kg
 LOAEL : 500 mg/kg
 Application Route : Dermal
 Exposure time : 28 d
 Target Organs : Blood

Species : Rat
 NOAEL : 4.6 mg/m³
 LOAEL : 23 mg/m³

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Application Route : Inhalation
 Exposure time : 4 Weeks
 Target Organs : Blood, Lungs

Species : Rat, male and female
 NOAEL : 1 mg/kg
 LOAEL : 2 mg/kg
 Application Route : Oral
 Exposure time : 1 yr
 Target Organs : Blood

Species : Dog
 NOAEL : 1 mg/kg
 LOAEL : 2 mg/kg
 Application Route : Oral
 Exposure time : 1 yr
 Target Organs : Blood

Species : Mouse
 NOAEL : 3 mg/kg
 LOAEL : 14 mg/kg
 Application Route : oral (feed)
 Exposure time : 18 Months
 Target Organs : Nervous system, Heart

Aspiration toxicity

Not classified based on available information.

Experience with human exposure**Components:****Indoxacarb (ISO):**

General Information : No human information is available.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Permethrin (ISO):**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.0001 mg/l
 Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.13 mg/l
 Exposure time: 72 h

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023 mg/l
 Exposure time: 72 h

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M-Factor (Acute aquatic toxicity) : 10,000
 Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): 0.00041 mg/l
 Exposure time: 35 d
 Method: OECD Test Guideline 210
 Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0047 µg/l
 Exposure time: 21 d
 Method: OECD Test Guideline 211
 M-Factor (Chronic aquatic toxicity) : 10,000
 Toxicity to microorganisms : EC50: > 1,000 mg/l
 Exposure time: 3 h

1-Methoxy-2-propanol:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 6,812 mg/l
 Exposure time: 96 h
 Method: DIN 38412
 Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23,300 mg/l
 Exposure time: 48 h
 Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 6,745 mg/l
 Exposure time: 72 h
 Method: ISO 10253
 Toxicity to microorganisms : IC50: > 1,000 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209

Indoxacarb (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.65 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.9 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.6 mg/l
 Exposure time: 48 h
 Method: OECD Test Guideline 202
 Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 0.6 mg/l
 Exposure time: 72 h
 NOEC (Pseudokirchneriella subcapitata (green algae)): 0.46 mg/l
 Exposure time: 72 h
 M-Factor (Acute aquatic toxicity) : 1

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.09 mg/l
 Exposure time: 21 d
 M-Factor (Chronic aquatic toxicity) : 1

Persistence and degradability**Components:****Permethrin (ISO):**

Biodegradability : Result: Not readily biodegradable.
 Method: OECD Test Guideline 301F

1-Methoxy-2-propanol:

Biodegradability : Result: Readily biodegradable.
 Biodegradation: 96 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301E

Bioaccumulative potential**Components:****Permethrin (ISO):**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
 Bioconcentration factor (BCF): 570

Partition coefficient: n-octanol/water : log Pow: 4.67

1-Methoxy-2-propanol:

Partition coefficient: n-octanol/water : log Pow: < 1

Indoxacarb (ISO):

Partition coefficient: n-octanol/water : log Pow: 4.65

Mobility in soil**Components:****Indoxacarb (ISO):**

Distribution among environmental compartments : log Koc: 3.9

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

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Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty containers retain residue and can be dangerous.
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.
If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

UN number : UN 3092
Proper shipping name : 1-METHOXY-2-PROPANOL SOLUTION
Class : 3
Packing group : III
Labels : 3

IATA-DGR

UN/ID No. : UN 3092
Proper shipping name : 1-Methoxy-2-propanol solution
Class : 3
Packing group : III
Labels : Flammable Liquids
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355

IMDG-Code

UN number : UN 3092
Proper shipping name : 1-METHOXY-2-PROPANOL SOLUTION
(Permethrin (ISO), Indoxacarb (ISO))
Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-D
Marine pollutant : yes

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

Not applicable for product as supplied.

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.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

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Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and : Not applicable
Environmental Protection and Management (Hazardous Substances) Regulations

Fire Safety (Petroleum and Flammable Materials) Regulations : Propylene Glycol Monomethyl Ether

The components of this product are reported in the following inventories:

AICS : not determined

DSL : not determined

IECSC : not determined

16. OTHER INFORMATION

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <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 : dd.mm.yyyy

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
SG OEL : Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances

ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
SG OEL / PEL (long term) : Permissible Exposure Level (PEL) Long Term
SG OEL / PEL (short term) : Permissible Exposure Level (PEL) Short Term

AICS - Australian Inventory of Chemical Substances; 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 Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Or-

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ganisation 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; 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.

SG / EN