

## Indoxacarb / Permethrin Formulation

Version 3.0      Revision Date: 09/16/2019      SDS Number: 27892-00014      Date of last issue: 2018/06/05  
 Date of first issue: 2014/11/04

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Indoxacarb / Permethrin Formulation

#### Manufacturer or supplier's details

Company name of supplier : MSD

Address : Kumagaya, Saitama Prefecture , Xicheng 810 MSD Co., Ltd.  
 Menuuma 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

### 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

Hazard statements : H226 Flammable liquid and vapour.

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Precautionary statements	<p>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.</p> <p><b>Prevention:</b></p> <p>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.</p> <p><b>Response:</b></p> <p>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.</p> <p><b>Storage:</b></p> <p>P403 + P235 Store in a well-ventilated place. Keep cool.          P405 Store locked up.</p> <p><b>Disposal:</b></p> <p>P501 Dispose of contents/ container to an approved waste disposal plant.</p>
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**Other hazards which do not result in classification**

Important symptoms and out- : Vapours may form explosive mixture with air.  
 lines of the emergency as-  
 sumed

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)	ENCS No.
Permethrin (ISO)	52645-53-1	43.81	3-4010
1-Methoxy-2-propanol	107-98-2	>= 40 - < 50	2-404, 7-97, 2-404
Indoxacarb (ISO)	173584-44-6	13.69	

**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 (CO<sub>2</sub>)  
 Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire- : Do not use a solid water stream as it may scatter and spread

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<p>fighting</p>	<p>fire. Flash back possible over considerable distance. Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.</p>
<p>Hazardous combustion products</p>	<p>: Carbon oxides Chlorine compounds</p>
<p>Specific extinguishing methods</p>	<p>: 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.</p>
<p>Special protective equipment for firefighters</p>	<p>: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.</p>

## 6. ACCIDENTAL RELEASE MEASURES

<p>Personal precautions, protective equipment and emergency procedures</p>	<p>: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.</p>
<p>Environmental precautions</p>	<p>: 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.</p>
<p>Methods and materials for containment and cleaning up</p>	<p>: 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.</p>

## 7. HANDLING AND STORAGE

### Handling

<p>Technical measures</p>	<p>: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.</p>
<p>Local/Total ventilation</p>	<p>: If sufficient ventilation is unavailable, use with local exhaust</p>

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- 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.  
 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.
- Avoidance of contact** : Oxidizing agents
- 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.
- Storage**
- 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:  
 Oxidizing solids  
 Oxidizing liquids
- Packaging material** : Unsuitable material: 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 parameters / Permissible concentration	Basis
Permethrin (ISO)	52645-53-1	TWA	80 µg/m <sup>3</sup> (OEB 3)	Internal
		Wipe limit	800 µg/100 cm <sup>2</sup>	Internal
1-Methoxy-2-propanol	107-98-2	TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
Indoxacarb (ISO)	173584-44-6	TWA	20 µg/m <sup>3</sup>	Internal
		Further information: Skin sensitisation		
		Wipe limit	100 µg/100 cm <sup>2</sup>	Internal

- Engineering measures** : Minimize workplace exposure concentrations.  
 If sufficient ventilation is unavailable, use with local exhaust

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ventilation.

If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

**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).

**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/m<sup>3</sup>  
 LOAEL : 23 mg/m<sup>3</sup>

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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

**Hazardous to the ozone layer**

Not applicable

**Other adverse effects**

No data available

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### 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

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

#### 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.

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**15. REGULATORY INFORMATION****Related Regulations****Fire Service Law**

Group 4, Type 2 petroleum, Water insoluble liquid, (1000 litre), Hazardous rank III

**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	Number	Concentration (%)
Propylene glycol monomethyl ether	496	>=40 - <50

**Substances Subject to be Indicated Names**

Article 57 (Enforcement Order Article 18)

Chemical name	Number
Propylene glycol monomethyl ether	496

**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)**

Inflammable Substance

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**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	Number	Concentration (%)
3-phenoxybenzyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate	350	44
Indoxacarb	430	14

**High Pressure Gas Safety Act**

Not applicable

**Explosive Control Law**

Not applicable

**Vessel Safety Law**

Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

**Aviation Law**

Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

**Marine Pollution and Sea Disaster Prevention etc Law**

Bulk transportation : Not classified as noxious liquid substance

**Marine Pollution and Sea Disaster Prevention etc Law**

Pack transportation : Classified as marine pollutant

**Narcotics and Psychotropics Control Act**Narcotic or Psychotropic Raw Material (Export / Import Permission)  
Not applicableSpecific Narcotic or Psychotropic Raw Material (Export / Import permission)  
Not applicable**Waste Disposal and Public Cleansing Law**

Specially Controlled Industrial Waste

**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 : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

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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**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

ACGIH / STEL : Short-term exposure limit

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 Organisation for Standardization; KECl - 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.

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