SAFETY DATA SHEET

Indoxacarb / Permethrin Formulation

Version 2.0  Revision Date: 09/16/2019  SDS Number: 27886-00013  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: MSD
Address: JL Raya Pandaan KM. 48
          Pandaan, Jawa Timur - Indonesia
Telephone: 908-740-4000
Emergency telephone number: 1-908-423-6000
E-mail address: EHSDATATESTWARD@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
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.  
P270 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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permethrin (ISO)</td>
<td>52645-53-1</td>
<td>&gt;= 30 -&lt; 60</td>
</tr>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>107-98-2</td>
<td>&gt;= 30 -&lt; 60</td>
</tr>
<tr>
<td>Indoxacarb (ISO)</td>
<td>173584-44-6</td>
<td>&gt;= 10 -&lt; 25</td>
</tr>
</tbody>
</table>

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 firefighting: 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.

3 / 20
### 6. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazardous combustion products</strong></td>
<td>Carbon oxides, Chlorine compounds</td>
</tr>
<tr>
<td><strong>Specific extinguishing methods</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Special protective equipment for firefighters</strong></td>
<td>In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.</td>
</tr>
</tbody>
</table>

#### 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.

### 7. HANDLING AND STORAGE

#### Technical measures:
See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

#### Local/Total ventilation:
- 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.
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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permethrin (ISO)</td>
<td>52645-53-1</td>
<td>TWA</td>
<td>80 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>800 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>107-98-2</td>
<td>NAB</td>
<td>100 ppm</td>
<td>ID OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PSD</td>
<td>150 ppm</td>
<td>ID OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Central nervous system impair, Eye irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indoxacarb (ISO)</td>
<td>173584-44-6</td>
<td>TWA</td>
<td>20 µg/m³</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>100 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>100 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Skin sensitisation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
### 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. |
| **Hygiene measures** | 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). |
| **Remarks** | 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 |
### 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)

<table>
<thead>
<tr>
<th>Water solubility</th>
<th>No data available</th>
</tr>
</thead>
</table>

### Partition coefficient: n-octanol/water

<table>
<thead>
<tr>
<th>Auto-ignition temperature</th>
<th>No data available</th>
</tr>
</thead>
</table>

### Decomposition temperature
- No data available

### Viscosity

<table>
<thead>
<tr>
<th>Viscosity, kinematic</th>
<th>No data available</th>
</tr>
</thead>
</table>

### 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
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
Result: negative

**Indoxacarb (ISO):**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximisation Test</td>
<td>Guinea pig</td>
<td>positive</td>
</tr>
</tbody>
</table>

**Germ cell mutagenicity**
Not classified based on available information.

**Components:**

**Permethrin (ISO):**

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: In vitro mammalian cell gene mutation test</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: Chromosome aberration test in vitro</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)</td>
<td></td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: Chromosome aberration test in vitro</td>
<td></td>
<td>positive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genotoxicity in vivo</th>
<th>Test Type</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)</td>
<td>Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)</td>
<td>Mouse</td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)</td>
<td>Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)</td>
<td>Mouse</td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: Rodent dominant lethal test (germ cell) (in vivo)</td>
<td>Rodent dominant lethal test (germ cell) (in vivo)</td>
<td>Mouse</td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)</td>
<td>Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)</td>
<td>Rat</td>
<td>negative</td>
</tr>
<tr>
<td>Application Route: Intraperitoneal injection</td>
<td>Intraperitoneal injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)</td>
<td>Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)</td>
<td>Mouse</td>
<td>positive</td>
</tr>
<tr>
<td>Application Route: Ingestion</td>
<td>Ingestion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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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
<table>
<thead>
<tr>
<th>Result</th>
<th>negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

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

Repeated dose toxicity

Components:

Permethrin (ISO):

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>0.2201 mg/l</td>
<td>Inhalation</td>
<td>90 Days</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>175 mg/kg</td>
<td>Ingestion</td>
<td>90 Days</td>
</tr>
</tbody>
</table>

1-Methoxy-2-propanol:

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>919 mg/kg</td>
<td>Ingestion</td>
<td>35 Days</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>1.1 mg/l</td>
<td>Inhalation (vapour)</td>
<td>2 yr</td>
<td>OECD Test Guideline 453</td>
</tr>
</tbody>
</table>

Indoxacarb (ISO):

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>LOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat, male and female</td>
<td>1.7 mg/kg</td>
<td>4.1 mg/kg</td>
<td>Oral</td>
<td>90 d</td>
<td>Blood, Central nervous system</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>LOAEL</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Target Organs</th>
</tr>
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<tbody>
<tr>
<td>Rat, male and female</td>
<td>50 mg/kg</td>
<td>500 mg/kg</td>
<td>Dermal</td>
<td>28 d</td>
<td>Blood</td>
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<table>
<thead>
<tr>
<th>Species</th>
<th>NOAEL</th>
<th>LOAEL</th>
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<tbody>
<tr>
<td>Rat</td>
<td>4.6 mg/m3</td>
<td>23 mg/m3</td>
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</tbody>
</table>
SAFETY DATA SHEET

Indoxacarb / Permethrin Formulation

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
# Indoxacarb / Permethrin Formulation

<table>
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<th>Safety Data Sheet</th>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
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<tr>
<td></td>
<td>2.0</td>
<td>09/16/2019</td>
<td>27886-00013</td>
<td>2018/06/05</td>
<td>2014/11/04</td>
</tr>
</tbody>
</table>

## M-Factor (Acute aquatic toxicity)

| M-Factor | Toxicity to fish (Chronic toxicity) | NOEC (Danio rerio (zebra fish)) | 0.00041 mg/l | Exposure time: 35 d | Method: OECD Test Guideline 210 |

| M-Factor | 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 | 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 |

| 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 |

| M-Factor (Acute aquatic toxicity) | 1 |
SAFETY DATA SHEET

Indoxacarb / Permethrin Formulation

Version 2.0  Revision Date: 09/16/2019  SDS Number: 27886-00013  Date of last issue: 2018/06/05
Date of first issue: 2014/11/04

Toxicity (Acute)

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.
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**

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<td>Proper shipping name</td>
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**IATA-DGR**

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<td>Packing group</td>
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<td>Packing instruction (passenger aircraft)</td>
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**IMDG-Code**

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<td>Packing group</td>
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<td>Marine pollutant</td>
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</table>

**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
Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

Regulation of the Minister of Health No. 472 of 1996 on the Safeguarding of Substances Hazardous to Health

Hazardous substances that must be registered : Not applicable

Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances

Hazardous substances approved for use : Not applicable

Prohibited substances : Not applicable

Restricted substances : Not applicable

Regulation of the Minister of Trade No. 44 of 2009 on Procurement, Distribution and Supervision of Hazardous Materials

Type of Hazardous Materials Restricted to Import, Distribution and Supervision : Not applicable

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


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)

ID OEL : Indonesia. Occupational Exposure Limits

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

ACGIH / STEL : Short-term exposure limit

ID OEL / NAB : Long term exposure limit

ID OEL / PSD : Short term exposure limit
SAFETY DATA SHEET

Indoxacarb / Permethrin Formulation

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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; 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.

ID / EN