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: EHSDATASTEWARD@msd.com

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: ![Flammable](image1) ![Hazardous](image2) ![Inhaling](image3) ![Corrosive](image4)
Signal word: Danger
Hazard statements: H226 Flammable liquid and vapour.
### 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

**Substance / Mixture:** Mixture
SAFETY DATA SHEET

Indoxacarb / Permethrin Formulation

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.

Hazardous combustion products: Carbon oxides
   Chlorine compounds
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
- Remove all sources of ignition.
- Use personal protective equipment.
- Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions
- Avoid release to the environment.
- 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.
- Use explosion-proof electrical, ventilating and lighting equipment.

Advice on safe handling
- Do not get on skin or clothing.
- Do not breathe mist or vapours.
- Do not swallow.
- Avoid contact with eyes.
- Wash skin thoroughly after handling.
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, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to the environment.


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>TWA</td>
<td>50 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>100 ppm</td>
<td>ACGIH</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>Wipe limit</td>
<td>100 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Further information: Skin sensitisation

Engineering measures: Minimize workplace exposure concentrations. If sufficient ventilation is unavailable, use with local exhaust ventilation. Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment

Respiratory protection: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the rec-
SAFETY DATA SHEET

Indoxacarb / Permethrin Formulation

Version 2.4 Revision Date: 2021/08/27 SDS Number: 27886-00017 Date of last issue: 2021/03/17 Date of first issue: 2014/11/04

Filter type Hand protection: Recommended guidelines, use respiratory protection.
Filter type: Combined particulates and organic vapour type

Hand protection: Chemical-resistant gloves

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.
Contaminated work clothing should not be allowed out of the workplace.
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
### 7. Flammability and Explosive Properties

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

### 10. Stability and Reactivity

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

### 11. Toxicological Information
**SAFETY DATA SHEET**

**Indoxacarb / Permethrin Formulation**

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
<td>2021/08/27</td>
<td>27886-00017</td>
<td>2021/03/17</td>
<td>2014/11/04</td>
</tr>
</tbody>
</table>

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

**Acute toxicity**
Harmful if swallowed or if inhaled.

**Product:**

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

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

**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.
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):**
- **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 cytogenetic assay)
    - **Species**: Mouse
    - **Result**: negative
  - **Test Type**: Mutagenicity (in vivo mammalian bone-marrow cytogenetic 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 cytogenetic assay)
    - **Species**: Rat
    - **Application Route**: Intraperitoneal injection
      - **Result**: negative
  - **Test Type**: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
    - **Species**: Mouse
    - **Application Route**: Ingestion
      - **Result**: positive
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
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)
Indoxacarb / Permethrin Formulation

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):

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
<table>
<thead>
<tr>
<th>Application Route</th>
<th>Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Target Organs</td>
<td>Blood, Lungs</td>
</tr>
</tbody>
</table>

**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
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M-Factor (Acute aquatic toxicity)</strong></td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td><strong>Toxicity to fish (Chronic toxicity)</strong></td>
<td>NOEC (Danio rerio (zebra fish)): 0.00041 mg/l Exposure time: 35 d Method: OECD Test Guideline 210</td>
<td></td>
</tr>
<tr>
<td><strong>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</strong></td>
<td>NOEC (Daphnia magna (Water flea)): 0.0047 µg/l Exposure time: 21 d Method: OECD Test Guideline 211</td>
<td></td>
</tr>
<tr>
<td><strong>M-Factor (Chronic aquatic toxicity)</strong></td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td><strong>Toxicity to microorganisms</strong></td>
<td>EC50: &gt; 1,000 mg/l Exposure time: 3 h</td>
<td></td>
</tr>
</tbody>
</table>

**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
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.
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
Minister of Industry Regulation No. 23/M-IND/PET/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PET/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:

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICS</td>
<td>not determined</td>
</tr>
<tr>
<td>DSL</td>
<td>not determined</td>
</tr>
<tr>
<td>IECSC</td>
<td>not determined</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Further information


Date format : yyyy/mm/dd

Full text of other abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>ID OEL</td>
<td>Indonesia. Occupational Exposure Limits</td>
</tr>
<tr>
<td>ACGIH / TWA</td>
<td>8-hour, time-weighted average</td>
</tr>
<tr>
<td>ACGIH / STEL</td>
<td>Short-term exposure limit</td>
</tr>
<tr>
<td>ID OEL / NAB</td>
<td>Long term exposure limit</td>
</tr>
<tr>
<td>ID OEL / PSD</td>
<td>Short term exposure limit</td>
</tr>
</tbody>
</table>

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with
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.