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Indoxacarb / Permethrin Formulation

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Trade name: Indoxacarb / Permethrin Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the Substance/Mixture: Veterinary product

1.3 Details of the supplier of the safety data sheet
Company: MSD
Shotton Lane
NE23 3JU Cramlington NU - Great Britain

Telephone: 44 1 670 59 30 00
Telefax: 908-735-1496
E-mail address of person responsible for the SDS: EHSDATASTEWARD@msd.com

1.4 Emergency telephone number
1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification (REGULATION (EC) No 1272/2008)
Flammable liquids, Category 3
Acute toxicity, Category 4
Acute toxicity, Category 4
Skin sensitisation, Category 1
Specific target organ toxicity - single exposure, Category 3
Specific target organ toxicity - repeated exposure, Category 1
Short-term (acute) aquatic hazard, Category 1
Long-term (chronic) aquatic hazard, Category 1

H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H332: Harmful if inhaled.
H317: May cause an allergic skin reaction.
H336: May cause drowsiness or dizziness.
H372: Causes damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms:

[Image of 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 through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:
- Prevention:
  - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P273 Avoid release to the environment.
  - P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

- Response:
  - 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.
  - P391 Collect spillage.

Hazardous components which must be listed on the label:
- Permethrin (ISO)
- 1-Methoxy-2-propanol
- Indoxacarb (ISO)

2.3 Other hazards
Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (&lt;% w/w)&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permethrin (ISO)</td>
<td>52645-53-1</td>
<td>Acute Tox.4; H302 Acute Tox.4; H332 Skin Sens.1;</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td></td>
<td>258-067-9</td>
<td>H317 Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td></td>
</tr>
<tr>
<td></td>
<td>613-058-00-2</td>
<td>M-Factor (Acute aquatic toxicity): 10,000</td>
<td></td>
</tr>
</tbody>
</table>
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**Indoxacarb / Permethrin Formulation**

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---

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>M-Factor (Acute aquatic toxicity):</th>
<th>M-Factor (Chronic aquatic toxicity):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoxacarb (ISO)</td>
<td>173584-44-6 607-700-00-0</td>
<td>Acute Tox.3; H301 Acute Tox.4; H332 Skin Sens.1B; H317 STOT RE1; H372 Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
</tbody>
</table>

**Substances with a workplace exposure limit:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Flam. Liq.3; H226 STOT SE3; H336</th>
<th>M-Factor (Acute aquatic toxicity):</th>
<th>M-Factor (Chronic aquatic toxicity):</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Methoxy-2-propanol</td>
<td>107-98-2 203-539-1 603-064-00-3</td>
<td>&gt;= 30 - &lt; 50</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

---

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

<table>
<thead>
<tr>
<th>General advice</th>
<th>Protection of first-aiders</th>
<th>If inhaled</th>
<th>In case of skin contact</th>
<th>In case of eye contact</th>
<th>If swallowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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).</td>
<td>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.</td>
<td>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.</td>
<td>In case of eye contact: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.</td>
<td>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.</td>
</tr>
</tbody>
</table>
4.2 Most important symptoms and effects, both acute and delayed

Risks: 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.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equip-
6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for 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 dyeing or other appropriate containment to keep material from spreading. If dyed 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.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures:
- See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- 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.
- 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.
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Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.

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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: 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.

Advice on common storage: Do not store with the following product types:
- Strong oxidizing agents
- Organic peroxides
- Flammable solids
- Pyrophoric liquids
- Pyrophoric solids
- Self-heating substances and mixtures
- Substances and mixtures, which in contact with water, emit flammable gases
- Explosives
- Gases

7.3 Specific end use(s)

Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</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-</td>
<td>107-98-2</td>
<td>TWA</td>
<td>50 ppm</td>
<td>180 mg/m³</td>
</tr>
<tr>
<td>propanol</td>
<td></td>
<td></td>
<td></td>
<td>FOR-2011-12-06-1358</td>
</tr>
<tr>
<td>Further information</td>
<td>The EU has set an indicative limit value for this substance, Chemicals that can be absorbed through the skin.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td>568 mg/m³</td>
</tr>
<tr>
<td>Further information</td>
<td>Identifies the possibility of significant uptake through the skin, Indicative</td>
<td></td>
<td></td>
<td>2000/39/EC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>375 mg/m³</td>
</tr>
<tr>
<td>Further information</td>
<td>Identifies the possibility of significant uptake through the skin, Indicative</td>
<td></td>
<td></td>
<td>2000/39/EC</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>Further information</td>
<td>Skin sensitisation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
null
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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).

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 (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Clear white to yellow.</td>
</tr>
<tr>
<td>Odour</td>
<td>ether-like</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>33.5 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</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>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SECTION 9: Physical and Chemical properties

9.1 Octanol/water:
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.

9.2 Other information:
- Flammability (liquids) : Not applicable
- Molecular weight : No data available
- Particle size : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Not classified as a reactivity hazard.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions : Flammable liquid and vapour.
Vapours may form explosive mixture with air.
Can react with strong oxidizing agents.

10.4 Conditions to avoid
Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials
Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products
No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Information on likely routes of exposure:
- Inhalation
- Skin contact
- Ingestion
- Eye contact
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#### 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

**Indoxacarb (ISO):**

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

**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

**Skin corrosion/irritation**
Not classified based on available information.

**Components:**

**Permethrin (ISO):**
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Species: Rabbit
Result: No skin irritation

Indoxacarb (ISO):
Result: No skin irritation

1-Methoxy-2-propanol:
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation
Not classified based on available information.

Components:
Permethrin (ISO):
Species: Rabbit
Result: No eye irritation

Indoxacarb (ISO):
Result: No eye irritation

1-Methoxy-2-propanol:
Species: Rabbit
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

Indoxacarb (ISO):
Test Type: Maximisation Test
Species: Guinea pig
Result: positive
### 1-Methoxy-2-propanol:

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

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

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

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

Carcinogenicity
Not classified based on available information.

Components:
Permethrin (ISO):
Species: Rat
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Result : negative

Species : Mouse

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

1-Methoxy-2-propanol:
Species : Rat
Application Route : inhalation (vapour)
Exposure time : 2 Years
Method : OECD Test Guideline 453
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

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
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

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)
  - Result: negative

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 through prolonged or repeated exposure.
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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

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
  - 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
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</tbody>
</table>

- **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

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

**Aspiration toxicity**
Not classified based on available information.

**Experience with human exposure**

**Components:**

**Indoxacarb (ISO):**

- **General Information**: No human information is available.

**SECTION 12: Ecological information**

**12.1 Toxicity**

**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**: ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.13
plants

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<thead>
<tr>
<th>M-Factor (Acute aquatic toxicity)</th>
<th>10.000</th>
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<tbody>
<tr>
<td>Toxicity to microorganisms</td>
<td>EC50: &gt; 1.000 mg/l Exposure time: 3 h</td>
</tr>
<tr>
<td>Toxicity to fish (Chronic toxicity)</td>
<td>NOEC: 0.00041 mg/l Exposure time: 35 d Species: Danio rerio (zebra fish) Method: OECD Test Guideline 210</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</td>
<td>NOEC: 0.0047 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211</td>
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<tr>
<td>M-Factor (Chronic aquatic toxicity)</td>
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</table>

**Indoxacarb (ISO):**

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>LC50 (Oncorhynchus mykiss (rainbow trout)): 0,65 mg/l Exposure time: 96 h Method: OECD Test Guideline 203</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>EC50 (Daphnia magna (Water flea)): 0,6 mg/l Exposure time: 48 h Method: OECD Test Guideline 202</td>
</tr>
<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>EC50 (Pseudokirchneriella subcapitata (green algae)): &gt; 0,6 mg/l Exposure time: 72 h</td>
</tr>
<tr>
<td>NOEC (Pseudokirchneriella subcapitata (green algae)): 0,46 mg/l Exposure time: 72 h</td>
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<tr>
<td>M-Factor (Acute aquatic toxicity)</td>
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<tr>
<td>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</td>
<td>NOEC: 0,09 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)</td>
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| M-Factor (Chronic aquatic toxicity) | 1 |

1-Methoxy-2-propanol:

| Toxicity to fish | LC50 (Leuciscus idus (Golden orfe)): 6.812 mg/l |
| Exposition time: 96 h |
| Method: DIN 38412 |

| Toxicity to daphnia and other aquatic invertebrates | EC50 (Daphnia magna (Water flea)): 23.300 mg/l |
| Exposition time: 48 h |

| Toxicity to algae/aquatic plants | ErC50 (Skeletonema costatum (marine diatom)): 6.745 mg/l |
| Exposition time: 72 h |
| Method: ISO 10253 |

| Toxicity to microorganisms | IC50: > 1.000 mg/l |
| Exposition time: 3 h |
| Method: OECD Test Guideline 209 |

12.2 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 |

12.3 Bioaccumulative potential

Components:

Permethrin (ISO):

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

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

Indoxacarb (ISO):

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

1-Methoxy-2-propanol:

| Partition coefficient: n-octanol/water | log Pow: < 1 |
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12.4 Mobility in soil

Components:

Indoxacarb (ISO):

Distribution among environmental compartments: log Koc: 3.9

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product: Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

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.

SECTION 14: Transport information

14.1 UN number

| ADN  | : UN 3092 |
| ADR  | : UN 3092 |
| RID  | : UN 3092 |
| IMDG | : UN 3092 |
| IATA | : UN 3092 |

14.2 UN proper shipping name

| ADN  | : 1-METHOXY-2-PROpanol, SOLUTION |
| ADR  | : 1-METHOXY-2-PROpanol, SOLUTION |
| RID  | : 1-METHOXY-2-PROpanol, SOLUTION |
| IMDG | : 1-METHOXY-2-PROpanol, SOLUTION (Permethrin (ISO), Indoxacarb (ISO)) |
| IATA | : 1-Methoxy-2-propanol, solution |

14.3 Transport hazard class(es)
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14.4 Packing group

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</table>

14.5 Environmental hazards

| ADN             | Environmentally hazardous : yes |
| ADR             | Environmentally hazardous : yes |
| RID             | Environmentally hazardous : yes |

14.4 Packing group

<table>
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<tr>
<th>IATA (Cargo)</th>
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<tr>
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<tr>
<td>Packing instruction (LQ) : Y344</td>
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<table>
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<th>IATA (Passenger)</th>
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<td>Labels : Flammable Liquids</td>
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</tbody>
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IMDG
Marine pollutant : yes

14.6 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.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
Number on list 3

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
REACH - List of substances subject to authorisation (Annex XIV)
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable


E1 ENVIRONMENTAL HAZARDS Quantity 1 Quantity 2
100 t 200 t
P5c FLAMMABLE LIQUIDS 5,000 t 50,000 t

Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Young people under the age of 18 are not allowed to use or be exposed to the product professionally. Young people above the age of 15 are, however, except from this rule if the product is a necessary part of their education.

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

AICS : not determined
DSL : not determined
IECSC : not determined
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15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Full text of H-statements

H226: Flammable liquid and vapour.
H301: Toxic if swallowed.
H302: Harmful if swallowed.
H317: May cause an allergic skin reaction.
H332: Harmful if inhaled.
H336: May cause drowsiness or dizziness.
H372: Causes damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.: Acute toxicity
Aquatic Acute: Short-term (acute) aquatic hazard
Aquatic Chronic: Long-term (chronic) aquatic hazard
Flam. Liq.: Flammable liquids
Skin Sens.: Skin sensitisation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
FOR-2011-12-06-1358: Norway. Occupational Exposure limits
2000/39/EC / TWA: Limit Value - eight hours
2000/39/EC / STEL: Short term exposure limit
FOR-2011-12-06-1358 / TWA: Long term exposure limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information


Classification of the mixture:

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<td>H302 Calculation method</td>
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<td>H317 Calculation method</td>
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<td>STOT SE 3</td>
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<td>H336 Calculation method</td>
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<tr>
<td>STOT RE 1</td>
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<tr>
<td>H372 Calculation method</td>
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<tr>
<td>H410 Calculation method</td>
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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.

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