# Indoxacarb / Permethrin Formulation

| Version | Revision Date: | SDS Number: | Date of last issue: 09.07.2024 |
|---|---|---|---|
| 8.1 | 28.09.2024 | 9371456-00013 | Date of first issue: 27.08.2021 |

## 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

Recommended restrictions on use : Not applicable

### 1.3 Details of the supplier of the safety data sheet

Company : MSD
Walton Manor, Walton
MK7 7AJ Milton Keynes - United Kingdom

Telephone : +1-908-740-4000

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) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

| | |
|---|---|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapour. |
| Acute toxicity, Category 4 | H302: Harmful if swallowed. |
| Acute toxicity, Category 4 | H332: Harmful if inhaled. |
| Skin sensitisation, Category 1 | H317: May cause an allergic skin reaction. |
| Specific target organ toxicity - single exposure, Category 3 | H336: May cause drowsiness or dizziness. |
| Specific target organ toxicity - repeated exposure, Category 1 | H372: Causes damage to organs through prolonged or repeated exposure. |
| Short-term (acute) aquatic hazard, Category 1 | H400: Very toxic to aquatic life. |
| Long-term (chronic) aquatic hazard, Category 1 | H410: Very toxic to aquatic life with long lasting effects. |

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).
Vapours may form explosive mixture with air.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

**Components**

| Chemical name | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | Classification | Concentration (% w/w) |
|---|---|---|---|
| Permethrin (ISO) | 52645-53-1<br>258-067-9<br>613-058-00-2 | Acute Tox. 4; H302<br>Acute Tox. 4; H332<br>Skin Sens. 1; H317<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410<br>_____<br>M-Factor (Acute aquatic toxicity): 10,000<br>M-Factor (Chronic aquatic toxicity): 10,000 | >= 30 - < 50 |
| 1-Methoxy-2-propanol | 107-98-2<br>203-539-1<br>603-064-00-3 | Flam. Liq. 3; H226<br>STOT SE 3; H336 | >= 30 - < 50 |
| Indoxacarb (ISO) | 173584-44-6<br><br>607-700-00-0 | Acute Tox. 3; H301<br>Acute Tox. 4; H332<br>Skin Sens. 1B; H317<br>STOT RE 1; H372 (Blood, Nervous system, Heart)<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410<br>_____<br>M-Factor (Acute aquatic toxicity): 1<br>M-Factor (Chronic aquatic toxicity): 1 | >= 10 - < 20 |

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of 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.

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).

| | | |
|---|---|---|
| If inhaled | : | If inhaled, remove to fresh air.<br>If not breathing, give artificial respiration.<br>If breathing is difficult, give oxygen.<br>Get medical attention if symptoms occur. |
| In case of skin contact | : | In case of contact, immediately flush skin with plenty of water.<br>Remove contaminated clothing and shoes.<br>Get medical attention.<br>Wash clothing before reuse.<br>Thoroughly clean shoes before reuse. |
| In case of eye contact | : | Flush eyes with water as a precaution.<br>Get medical attention if irritation develops and persists. |
| If swallowed | : | If swallowed, DO NOT induce vomiting.<br>Get medical attention.<br>Rinse mouth thoroughly with water.<br>Never give anything by mouth to an unconscious person. |

### 4.2 Most important symptoms and effects, both acute and delayed

| | | |
|---|---|---|
| Risks | : | Harmful if swallowed or if inhaled.<br>May cause an allergic skin reaction.<br>May cause drowsiness or dizziness.<br>Causes damage to organs through prolonged or repeated exposure.<br><br>This product contains a pyrethroid.<br>Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning. |

### 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<br>Alcohol-resistant foam<br>Carbon dioxide (CO2)<br>Dry chemical |
| Unsuitable extinguishing media | : | High volume water jet |

### 5.2 Special hazards arising from the substance or mixture

| | | |
|---|---|---|
| Specific hazards during fire-fighting | : | Do not use a solid water stream as it may scatter and spread fire.<br>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 (see section 7) and personal protective equipment recommendations (see section 8).

### 6.2 Environmental precautions

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.
If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

### 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 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.

### 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. |
| Local/Total ventilation | : | If sufficient ventilation is unavailable, use with local exhaust ventilation.<br>Use explosion-proof electrical, ventilating and lighting equipment. |
| Advice on safe handling | : | Do not get on skin or clothing.<br>Do not breathe mist or vapours.<br>Do not swallow.<br>Avoid contact with eyes.<br>Wash skin thoroughly after handling.<br>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Non-sparking tools should be used.<br>Keep container tightly closed.<br>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>Take precautionary measures against static discharges.<br>Do not eat, drink or smoke when using this product.<br>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. Contaminated work clothing should not be allowed out of the workplace.<br>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:<br>Strong oxidizing agents<br>Self-reactive substances and mixtures<br>Organic peroxides<br>Flammable solids<br>Pyrophoric liquids<br>Pyrophoric solids<br>Self-heating substances and mixtures<br>Substances and mixtures, which in contact with water, emit flammable gases<br>Explosives |

Gases
Very acutely toxic substances and mixtures

### 7.3 Specific end use(s)

Specific use(s) : No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Occupational Exposure Limits**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---|---|---|---|---|
| Permethrin (ISO) | 52645-53-1 | TWA | 80 µg/m3 (OEB 3) | Internal |
| | | Wipe limit | 800 µg/100 cm² | Internal |
| 1-Methoxy-2-propanol | 107-98-2 | STEL | 150 ppm<br>560 mg/m3 | GB EH40 |
| | Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity. | | | |
| | | TWA | 100 ppm<br>375 mg/m3 | GB EH40 |
| | Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity. | | | |
| | | STEL | 150 ppm<br>568 mg/m3 | 2000/39/EC |
| | Further information: Identifies the possibility of significant uptake through the skin, Indicative | | | |
| | | TWA | 100 ppm<br>375 mg/m3 | 2000/39/EC |
| | Further information: Identifies the possibility of significant uptake through the skin, Indicative | | | |
| Indoxacarb (ISO) | 173584-44-6 | TWA | 50 µg/m3 (OEB 3) | Internal |
| | Further information: DSEN | | | |
| | | Wipe limit | 100 µg/100 cm2 | Internal |

**Derived No Effect Level (DNEL)**

| Substance name | End Use | Exposure routes | Potential health effects | Value |
|---|---|---|---|---|
| 1-Methoxy-2-propanol | Workers | Inhalation | Long-term systemic effects | 369 mg/m3 |
| | Workers | Inhalation | Acute systemic effects | 553.5 mg/m3 |
| | Workers | Inhalation | Acute local effects | 553.5 mg/m3 |
| | Workers | Skin contact | Long-term systemic effects | 183 mg/kg bw/day |
| | Consumers | Inhalation | Long-term systemic | 43.9 mg/m3 |

| | | | | |
|---|---|---|---|---|
| | | | effects | |
| | Consumers | Skin contact | Long-term systemic effects | 78 mg/kg bw/day |
| | Consumers | Ingestion | Long-term systemic effects | 33 mg/kg bw/day |

**Predicted No Effect Concentration (PNEC)**

| Substance name | Environmental Compartment | Value |
|---|---|---|
| 1-Methoxy-2-propanol | Fresh water | 10 mg/l |
| | Marine water | 1 mg/l |
| | Freshwater - intermittent | 100 mg/l |
| | Sewage treatment plant | 100 mg/l |
| | Fresh water sediment | 52.3 mg/kg dry weight (d.w.) |
| | Marine sediment | 5.2 mg/kg dry weight (d.w.) |
| | Soil | 4.59 mg/kg dry weight (d.w.) |

### 8.2 Exposure controls

**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**

Eye/face protection : Wear the following personal protective equipment:
Safety glasses
Equipment should conform to BS EN 166

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.

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 expo-

sure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Equipment should conform to BS EN 14387

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

| | | |
|---|---|---|
| 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 |
| 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 |
| Density | : | No data available |
| Solubility(ies) | | |
| Water solubility | : | No data available |
| Partition coefficient: n-octanol/water | : | Not applicable |
| 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) : No data available

Molecular weight : No data available

Particle size : Not applicable

## 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

**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<br>Exposure time: 4 h<br>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<br>Exposure time: 6 h<br>Test atmosphere: vapour |
| Acute dermal toxicity | : | LD50 (Rat): > 2,000 mg/kg<br>Assessment: The substance or mixture has no acute dermal toxicity |

**Indoxacarb (ISO):**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat, female): 179 mg/kg<br>Symptoms: Loss of reflexes, Breathing difficulties, Tremors<br><br>LD50 (Rat, male): 843 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat, female): 4.2 mg/l<br>Exposure time: 4 h<br>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)<br>Result: negative<br><br>Test Type: In vitro mammalian cell gene mutation test<br>Result: negative<br><br>Test Type: Chromosome aberration test in vitro<br>Result: negative<br><br>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)<br>Result: negative<br><br>Test Type: Chromosome aberration test in vitro<br>Result: positive |
| Genotoxicity in vivo | : | Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)<br>Species: Mouse<br>Result: negative<br><br>Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)<br>Species: Mouse<br>Result: negative<br><br>Test Type: Rodent dominant lethal test (germ cell) (in vivo)<br>Species: Mouse<br>Result: negative<br><br>Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)<br>Species: Rat<br>Application Route: Intraperitoneal injection<br>Result: negative<br><br>Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)<br>Species: Mouse<br>Application Route: Ingestion<br>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<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |
| Effects on foetal development | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |

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

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Two-generation reproduction toxicity study<br>Species: Rat<br>Application Route: inhalation (vapour)<br>Method: OECD Test Guideline 416<br>Result: negative |
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: inhalation (vapour)<br>Result: negative |

**Indoxacarb (ISO):**

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

| | | |
|---|---|---|
| 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. |

## SECTION 12: Ecological information

### 12.1 Toxicity

**Components:**

**Permethrin (ISO):**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0.0001 mg/l<br>Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.13 mg/l<br>Exposure time: 72 h<br><br>EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023 |

| | | |
|---|---|---|
| | | mg/l<br>Exposure time: 72 h |
| M-Factor (Acute aquatic toxicity) | : | 10,000 |
| Toxicity to microorganisms | : | EC50 : > 1,000 mg/l<br>Exposure time: 3 h |
| Toxicity to fish (Chronic toxicity) | : | NOEC: 0.00041 mg/l<br>Exposure time: 35 d<br>Species: Danio rerio (zebra fish)<br>Method: OECD Test Guideline 210 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC: 0.0047 µg/l<br>Exposure time: 21 d<br>Species: Daphnia magna (Water flea)<br>Method: OECD Test Guideline 211 |
| M-Factor (Chronic aquatic toxicity) | : | 10,000 |

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

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

**Indoxacarb (ISO):**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0.65 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203<br><br>LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.9 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0.6 mg/l<br>Exposure time: 48 h<br>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: 0.09 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1

**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

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

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

**Indoxacarb (ISO):**

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

**12.4 Mobility in soil**

**Components:**

**Indoxacarb (ISO):**

Distribution among environmental compartments : log Koc: 3.9

### 12.5 Results of PBT and vPvB assessment

**Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

**Product:**

Endocrine disrupting potential : This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f).

## 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.
Do not dispose of waste into sewer.

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)**

| | | Class | Subsidiary risks |
|---|---|---|---|
| **ADN** | : | 3 | |
| **ADR** | : | 3 | |
| **RID** | : | 3 | |
| **IMDG** | : | 3 | |
| **IATA** | : | 3 | |

**14.4 Packing group**

**ADN**

| | | |
|---|---|---|
| Packing group | : | III |
| Classification Code | : | F1 |
| Hazard Identification Number | : | 30 |
| Labels | : | 3 |

**ADR**

| | | |
|---|---|---|
| Packing group | : | III |
| Classification Code | : | F1 |
| Hazard Identification Number | : | 30 |
| Labels | : | 3 |
| Tunnel restriction code | : | (D/E) |

**RID**

| | | |
|---|---|---|
| Packing group | : | III |
| Classification Code | : | F1 |
| Hazard Identification Number | : | 30 |
| Labels | : | 3 |

**IMDG**

| | | |
|---|---|---|
| Packing group | : | III |
| Labels | : | 3 |
| EmS Code | : | F-E, S-D |

**IATA (Cargo)**

| | | |
|---|---|---|
| Packing instruction (cargo aircraft) | : | 366 |
| Packing instruction (LQ) | : | Y344 |
| Packing group | : | III |
| Labels | : | Flammable Liquids |

**IATA (Passenger)**

| | | |
|---|---|---|
| Packing instruction (passenger aircraft) | : | 355 |
| Packing instruction (LQ) | : | Y344 |
| Packing group | : | III |
| Labels | : | Flammable Liquids |

### 14.5 Environmental hazards

**ADN**
Environmentally hazardous : yes

**ADR**
Environmentally hazardous : yes

**RID**
Environmentally hazardous : yes

**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

Relevant EU provisions transposed through retained EU law

| | | |
|---|---|---|
| UK REACH List of restrictions (Annex 17) | : | Conditions of restriction for the following entries should be considered: Number on list 3<br><br>Substance(s) or mixture(s) are listed here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or not. |
| UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation | : | Not applicable |
| The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) | : | Not applicable |
| Regulation (EC) on substances that deplete the ozone layer | : | Not applicable |
| UK REACH List of substances subject to authorisation (Annex XIV) | : | Not applicable |
| GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation | : | Permethrin (ISO) |

Control of Major Accident Hazards Regulations 2015 (COMAH)

| | Quantity 1 | Quantity 2 |
|---|---|---|

| | | | |
|---|---|---|---|
| E1 | ENVIRONMENTAL HAZARDS | 100 t | 200 t |
| P5c | FLAMMABLE LIQUIDS | 5,000 t | 50,000 t |

**Other regulations:**

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.
Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

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

| | | |
|---|---|---|
| AICS | : | not determined |
| DSL | : | not determined |
| IECSC | : | not determined |

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

| | | |
|---|---|---|
| Other information | : | Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines. |

**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 |
| 2000/39/EC | : | Europe. Commission Directive 2000/39/EC establishing a first |

| | | |
|---|---|---|
| | | list of indicative occupational exposure limit values |
| GB EH40 | : | UK. EH40 WEL - Workplace Exposure Limits |
| 2000/39/EC / TWA | : | Limit Value - eight hours |
| 2000/39/EC / STEL | : | Short term exposure limit |
| GB EH40 / TWA | : | Long-term exposure limit (8-hour TWA reference period) |
| GB EH40 / STEL | : | Short-term exposure limit (15-minute reference period) |

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; 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; 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; 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; TECI - Thailand Existing Chemicals 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**

| | | |
|---|---|---|
| Sources of key data used to compile the Safety Data Sheet | : | Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/ |

| **Classification of the mixture:** | | **Classification procedure:** |
|---|---|---|
| Flam. Liq. 3 | H226 | Based on product data or assessment |
| Acute Tox. 4 | H302 | Calculation method |
| Acute Tox. 4 | H332 | Calculation method |
| Skin Sens. 1 | H317 | Calculation method |

| | | |
|---|---|---|
| STOT SE 3 | H336 | Calculation method |
| STOT RE 1 | H372 | Calculation method |
| Aquatic Acute 1 | H400 | Calculation method |
| Aquatic Chronic 1 | H410 | Calculation method |

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.

GB / EN