

## Indoxacarb / Permethrin Formulation

Version 4.0      Revision Date: 09/16/2019      SDS Number: 27903-00013      Date of last issue: 06/05/2018  
 Date of first issue: 11/04/2014

### SECTION 1. IDENTIFICATION

Product name : Indoxacarb / Permethrin Formulation

#### Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc  
 Address : 2000 Galloping Hill Road  
 Kenilworth - New Jersey - U.S.A. 07033  
 Telephone : 908-740-4000  
 Telefax : 908-735-1496  
 Emergency telephone : 1-908-423-6000  
 E-mail address : EHSDATASTEWARD@merck.com

#### Recommended use of the chemical and restrictions on use


Recommended use : Veterinary product

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 3  
 Acute toxicity (Oral) : Category 4  
 Acute toxicity (Inhalation) : Category 4  
 Skin sensitization : Category 1  
 Specific target organ toxicity - single exposure : Category 3  
 Specific target organ toxicity - repeated exposure : Category 1 (Blood, Nervous system, Heart)

#### GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.  
 H302 + H332 Harmful if swallowed or if inhaled.  
 H317 May cause an allergic skin reaction.  
 H336 May cause drowsiness or dizziness.  
 H372 Causes damage to organs (Blood, Nervous system, Heart) through prolonged or repeated exposure.

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/ equip-

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ment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P260 Do not breathe mist or vapors.

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 must not be allowed out of the workplace.

P280 Wear protective gloves/ 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.

P363 Wash contaminated clothing before reuse.

### 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

Vapors may form explosive mixture with air.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Permethrin (ISO)	52645-53-1	>= 30 - < 50
1-Methoxy-2-propanol	107-98-2	>= 30 - < 50
Indoxacarb (ISO)	173584-44-6	>= 10 - < 20

Actual concentration is withheld as a trade secret

## SECTION 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.

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- 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.
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**SECTION 5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.  
Flash back possible over considerable distance.  
Vapors may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides  
Chlorine compounds
- 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.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.  
Use personal protective equipment.  
Follow safe handling advice and personal protective

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- equipment recommendations.
- Environmental precautions : Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapors/mists with a water spray jet. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked 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.

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### SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation. If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing. Do not breathe vapors or spray mist. Do not swallow. Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Non-sparking tools should be used. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations.

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Materials to avoid : Keep away from heat and sources of ignition.  
 : 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

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Permethrin (ISO)	52645-53-1	TWA	80 µg/m <sup>3</sup> (OEB 3)	Internal
		Wipe limit	800 µg/100 cm <sup>2</sup>	Internal
1-Methoxy-2-propanol	107-98-2	TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		ST	150 ppm 540 mg/m <sup>3</sup>	NIOSH REL
		TWA	100 ppm 360 mg/m <sup>3</sup>	NIOSH REL
Indoxacarb (ISO)	173584-44-6	TWA	20 µg/m <sup>3</sup>	Internal
		Further information: Skin sensitization		
		Wipe limit	100 µg/100 cm <sup>2</sup>	Internal

**Engineering measures** : Minimize workplace exposure concentrations.  
 If sufficient ventilation is unavailable, use with local exhaust ventilation.  
 If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

**Personal protective equipment**

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

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	Material	: Chemical-resistant gloves
	Remarks	: Choose gloves to protect hands against chemicals depending on the concentration 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. Wash contaminated clothing before re-use.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Color	: Clear white to yellow.
Odor	: ether-like
Odor 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	: 92.3 °F / 33.5 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Flammability (liquids)	: Not applicable
Upper explosion limit / Upper	: No data available

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flammability limit	
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: 1.096
Solubility(ies)	
Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, kinematic	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Molecular weight	: No data available
Particle size	: No data available

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Flammable liquid and vapor. Vapors may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Oxidizing agents
Hazardous decomposition products	: No hazardous decomposition products are known.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### 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: 572.63 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 3.29 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method

#### Components:

##### **Permethrin (ISO):**

Acute oral toxicity	:	LD50 (Rat): 480 - 554 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 2.3 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

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

Acute oral toxicity	:	LD50 (Rat): 4,016 mg/kg
Acute inhalation toxicity	:	LC50 (Mouse): < 22.2 mg/l Exposure time: 6 h Test atmosphere: vapor
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
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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 sensitization

##### Skin sensitization

May cause an allergic skin reaction.

##### Respiratory sensitization

Not classified based on available information.

#### Components:

### Permethrin (ISO):

Test Type : Buehler Test  
 Routes of exposure : Skin contact  
 Species : Guinea pig  
 Result : positive

Assessment : Probability or evidence of skin sensitization in humans

### 1-Methoxy-2-propanol:

Test Type : Maximization Test  
 Routes of exposure : Skin contact  
 Species : Guinea pig  
 Result : negative

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### Indoxacarb (ISO):

Test Type : Maximization 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.

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### 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 mam-  
 malian cells  
 Result: equivocal

Test Type: DNA damage and repair, unscheduled DNA syn-  
 thesis 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

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Result : negative

### 1-Methoxy-2-propanol:

Species : Rat  
 Application Route : inhalation (vapor)  
 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

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### 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 fetal 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 (vapor)

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Method: OECD Test Guideline 416  
 Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
 Species: Rat  
 Application Route: inhalation (vapor)  
 Result: negative

**Indoxacarb (ISO):**

Effects on fertility : Test Type: Two-generation study  
 Species: Rat  
 Application Route: Oral  
 General Toxicity F1: NOAEL: 1.3 mg/kg body weight  
 Result: negative

Test Type: Two-generation study  
 Species: Rat  
 Application Route: Oral  
 General Toxicity Parent: NOAEL: 1.3 mg/kg body weight  
 General Toxicity F1: NOAEL: > 6.7 mg/kg body weight  
 Result: Embryotoxic effects and adverse effects on the offspring were detected.

Effects on fetal 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.

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### 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 (vapor)  
 Exposure time : 2 y  
 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

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LOAEL	: 500 mg/kg
Application Route	: Dermal
Exposure time	: 28 d
Target Organs	: Blood
Species	: Rat
NOAEL	: 4.6 mg/m <sup>3</sup>
LOAEL	: 23 mg/m <sup>3</sup>
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 y
Target Organs	: Blood
Species	: Dog
NOAEL	: 1 mg/kg
LOAEL	: 2 mg/kg
Application Route	: Oral
Exposure time	: 1 y
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

### Ecotoxicity

#### Components:

#### **Permethrin (ISO):**

Toxicity to fish : LC<sub>50</sub> (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC<sub>50</sub> (Daphnia magna (Water flea)): 0.0001 mg/l  
 Exposure time: 48 h

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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

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

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0047 µg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50: > 1,000 mg/l  
 Exposure time: 3 h

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

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 6,812 mg/l  
 Exposure time: 96 h  
 Method: DIN 38412

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23,300 mg/l  
 Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 6,745 mg/l  
 Exposure time: 72 h  
 Method: ISO 10253

Toxicity to microorganisms : IC50: > 1,000 mg/l  
 Exposure time: 3 h  
 Method: OECD Test Guideline 209

**Indoxacarb (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.65 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.9 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.6 mg/l  
 Exposure time: 48 h  
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 0.6 mg/l  
 Exposure time: 72 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.46



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mg/l  
Exposure time: 72 h  
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.09 mg/l  
Exposure time: 21 d

**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

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

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

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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

#### 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.

#### Domestic regulation

##### 49 CFR

UN/ID/NA number	: UN 3092
Proper shipping name	: 1-Methoxy-2-propanol SOLUTION
Class	: 3
Packing group	: III
Labels	: FLAMMABLE LIQUID
ERG Code	: 129
Marine pollutant	: yes(Permethrin (ISO), Indoxacarb (ISO))

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### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know

#### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
 Acute toxicity (any route of exposure)  
 Respiratory or skin sensitization  
 Specific target organ toxicity (single or repeated exposure)

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Permethrin (ISO)	52645-53-1	>= 30 - < 50 %
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### US State Regulations

#### Pennsylvania Right To Know

Permethrin (ISO)	52645-53-1
1-Methoxy-2-propanol	107-98-2
Indoxacarb (ISO)	173584-44-6

#### California List of Hazardous Substances

1-Methoxy-2-propanol	107-98-2
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#### California Permissible Exposure Limits for Chemical Contaminants

1-Methoxy-2-propanol	107-98-2
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#### The ingredients of this product are reported in the following inventories:

AICS : not determined

DSL : not determined

IECSC : not determined

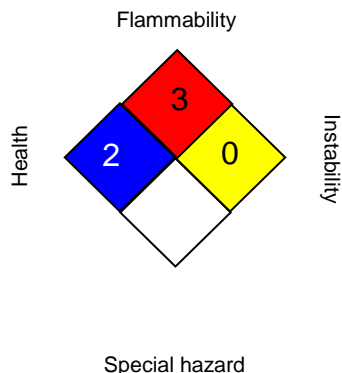
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### SECTION 16. OTHER INFORMATION

#### Further information

##### NFPA 704:



##### HMIS® IV:

<b>HEALTH</b>	*	<b>3</b>
<b>FLAMMABILITY</b>	<b>3</b>	
<b>PHYSICAL HAZARD</b>	<b>0</b>	

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

#### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
 NIOSH REL : USA. NIOSH Recommended Exposure Limits  
 ACGIH / TWA : 8-hour, time-weighted average  
 ACGIH / STEL : Short-term exposure limit  
 NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek  
 NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic sub-

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stance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; 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

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

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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.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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