

## Permethrin Formulation

Version 6.1      Revision Date: 04.04.2023      SDS Number: 829665-00016      Date of last issue: 01.10.2022  
Date of first issue: 02.08.2016

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### Section 1: Identification

Product name : Permethrin Formulation

#### Manufacturer or supplier's details

Company : MSD

Address : 33 Whakatiki Street - Private Bag 908  
Upper Hutt - New Zealand

Telephone : +1-908-740-4000

Emergency telephone number : +1-908-423-6000

E-mail address : EHSDATASTEWARD@msd.com

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

Recommended use : Veterinary product

Restrictions on use :  
Not applicable

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### Section 2: Hazard identification

#### GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2

Respiratory sensitisation : Category 1

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 1

Carcinogenicity : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 2

Specific target organ toxicity - single exposure : Category 3

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Specific target organ toxicity - repeated exposure : Category 2

Aspiration hazard : Category 1

Hazardous to the aquatic environment - acute hazard : Category 1

Hazardous to the aquatic environment - chronic hazard : Category 1

### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H336 May cause drowsiness or dizziness.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H361 Suspected of damaging fertility or the unborn child.
- H371 May cause damage to organs.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

**Prevention:**

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
- P242 Use non-sparking tools.
- P243 Take action to prevent static discharges.
- P260 Do not breathe mist or vapours.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.

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P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
 P284 Wear respiratory protection.

**Response:**

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.  
 P331 Do NOT induce vomiting.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.  
 P391 Collect spillage.

**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.  
 P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards which do not result in classification**

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**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Solvent naphtha (petroleum), light aromatic	64742-95-6	60 -70
Xylene	1330-20-7	6 -16
Permethrin (ISO)	52645-53-1	11.76
4-Nonylphenol, branched, ethoxylated	127087-87-0	8.4
Calcium bis(dodecylbenzenesulphonate), branched	70528-83-5	2.52

**Section 4: First-aid measures**

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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. Get medical attention.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
In case of eye contact	:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.
If swallowed	:	If swallowed, DO NOT induce vomiting. If vomiting occurs have person lean forward. Call a physician or poison control centre immediately. 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. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs. May cause damage to organs through prolonged or repeated exposure. This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.
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.

**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.

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Vapours may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.

- Hazardous combustion products : Chlorine compounds  
Carbon oxides  
Sulphur oxides  
Metal oxides
- 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 firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
- Hazchem Code : 3Y
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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 (see section 7) and personal protective equipment recommendations (see section 8).
- Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Non-sparking tools should be used.  
Soak up with inert absorbent material.  
Suppress (knock down) gases/vapours/mists with a water spray jet.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.
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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

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- ventilation.  
 Use explosion-proof electrical, ventilating and lighting equipment.
- Advice on safe handling** : Do not get on skin or clothing.  
 Do not breathe mist or vapours.  
 Do not swallow.  
 Do not get in eyes.  
 Wash skin thoroughly after handling.  
 Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
 Non-sparking tools should be used.  
 Keep container tightly closed.  
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 Take precautionary measures against static discharges.  
 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.  
 Wash contaminated clothing before re-use.
- Conditions for safe storage** : Keep in properly labelled containers.  
 Store locked up.  
 Keep tightly closed.  
 Keep in a cool, well-ventilated place.  
 Store in accordance with the particular national regulations.  
 Keep away from heat and sources of ignition.
- Materials to avoid** : Do not store with the following product types:  
 Self-reactive substances and mixtures  
 Organic peroxides  
 Oxidizing agents  
 Flammable gases  
 Pyrophoric liquids  
 Pyrophoric solids  
 Self-heating substances and mixtures  
 Poisonous gases  
 Explosives

### Section 8: Exposure controls/personal protection

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), light aromatic	64742-95-6	WES-TWA	300 ppm 890 mg/m <sup>3</sup>	NZ OEL
		WES-STEL	500 ppm 1,480 mg/m <sup>3</sup>	NZ OEL
		TWA	200 mg/m <sup>3</sup>	ACGIH

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			(total hydrocarbon vapor)	
Xylene	1330-20-7	WES-TWA	50 ppm 217 mg/m <sup>3</sup>	NZ OEL
Further information: Ototoxin				
		TWA	20 ppm	ACGIH
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

**Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Xylene	1330-20-7	Methylhippuric acid	Urine	End of shift	1.5 g/l	NZ BEI
		Methylhippuric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g creatinine	ACGIH BEI

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

**Personal protective equipment**

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapour type

Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:  
 Safety goggles

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

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atmospheres or flash fires, use flame retardant antistatic protective clothing.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

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**Section 9: Physical and chemical properties**

Appearance	:	liquid
Colour	:	clear
Odour	:	aromatic
Odour Threshold	:	No data available
pH	:	6.69
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	51.1 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	15 mmHg (25 °C)
Relative vapour density	:	No data available
Relative density	:	0.870 - 0.880 (25 °C)
Density	:	No data available
Solubility(ies)	:	
Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	



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Viscosity, dynamic                   : No data available  
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                           : Not applicable

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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 reac-     : Flammable liquid and vapour.  
tions                                     : Vapours may form explosive mixture with air.  
Can react with strong oxidizing agents.  
Conditions to avoid                 : Heat, flames and sparks.  
Incompatible materials             : Oxidizing agents  
Hazardous decomposition         : No hazardous decomposition products are known.  
products

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**Section 11: Toxicological information**

Exposure routes                     : Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity                   : Acute toxicity estimate: 646.66 mg/kg  
Method: Calculation method  
Acute inhalation toxicity           : Acute toxicity estimate: > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method  
Acute dermal toxicity                : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

**Components:****Solvent naphtha (petroleum), light aromatic:**

Acute oral toxicity                   : LD50 (Rat): > 5,000 mg/kg  
Acute inhalation toxicity           : LC50 (Rat): > 5.61 mg/l

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Exposure time: 4 h  
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

**Xylene:**

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg  
Method: Expert judgement  
Remarks: Based on national or regional regulation.

Acute inhalation toxicity : LC50 (Rat): 27.571 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

Acute dermal toxicity : Acute toxicity estimate: 1,100 mg/kg  
Method: Expert judgement  
Remarks: Based on national or regional regulation.

**Permethrin (ISO):**

Acute oral toxicity : Acute toxicity estimate: 100 mg/kg  
Method: Expert judgement  
Remarks: Based on national or regional regulation.

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

**4-Nonylphenol, branched, ethoxylated:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

**Calcium bis(dodecylbenzenesulphonate), branched:**

Acute oral toxicity : LD50 (Rat): 404 - 1,980 mg/kg  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Remarks: Based on data from similar materials

**Skin corrosion/irritation**

Causes skin irritation.

**Components:****Solvent naphtha (petroleum), light aromatic:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation

**Xylene:**

Species : Rabbit

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Result : Skin irritation

**Permethrin (ISO):**

Species : Rabbit  
Result : No skin irritation

**4-Nonylphenol, branched, ethoxylated:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : Based on data from similar materials

**Calcium bis(dodecylbenzenesulphonate), branched:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation  
Remarks : Based on data from similar materials

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Components:****Solvent naphtha (petroleum), light aromatic:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

**Xylene:**

Species : Rabbit  
Result : Irritation to eyes, reversing within 21 days

**Permethrin (ISO):**

Result : Irritation to eyes, reversing within 21 days  
Remarks : Based on national or regional regulation.

**4-Nonylphenol, branched, ethoxylated:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on data from similar materials

**Calcium bis(dodecylbenzenesulphonate), branched:**

Species : Rat  
Result : Irreversible effects on the eye  
Method : OECD Test Guideline 405  
Remarks : Based on data from similar materials

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**Respiratory or skin sensitisation****Skin sensitisation**

May cause an allergic skin reaction.

**Respiratory sensitisation**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Components:****Solvent naphtha (petroleum), light aromatic:**

Test Type : Buehler Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : negative

**Xylene:**

Test Type : Local lymph node assay (LLNA)  
Exposure routes : Skin contact  
Species : Mouse  
Result : negative

**Permethrin (ISO):**

Test Type : Buehler Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : positive

Assessment : Probability or evidence of skin sensitisation in humans

Assessment : May cause sensitisation by inhalation.  
Remarks : Based on national or regional regulation.

**4-Nonylphenol, branched, ethoxylated:**

Test Type : Maximisation Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

**Calcium bis(dodecylbenzenesulphonate), branched:**

Test Type : Maximisation Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

**Chronic toxicity****Germ cell mutagenicity**

May cause genetic defects.

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### Components:

#### **Solvent naphtha (petroleum), light aromatic:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: positive

Genotoxicity in vivo : Test Type: Sister chromatid exchange analysis in spermatogonia  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: positive

Germ cell mutagenicity - Assessment : Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

#### **Xylene:**

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: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)  
Species: Mouse  
Application Route: Skin contact  
Result: negative

#### **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

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- 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.

**4-Nonylphenol, branched, ethoxylated:**

- Genotoxicity in vitro      :    Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials
- Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Based on data from similar materials
- Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: Based on data from similar materials

**Calcium bis(dodecylbenzenesulphonate), branched:**

- Genotoxicity in vitro      :    Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials
- Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

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Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
 Species: Mouse  
 Application Route: Ingestion  
 Result: negative  
 Remarks: Based on data from similar materials

### Carcinogenicity

May cause cancer.

#### Components:

##### **Solvent naphtha (petroleum), light aromatic:**

Species : Mouse  
 Application Route : Skin contact  
 Exposure time : 2 Years  
 Result : positive

Carcinogenicity - Assessment : Sufficient evidence of carcinogenicity in animal experiments

##### **Xylene:**

Species : Rat  
 Application Route : Ingestion  
 Exposure time : 103 weeks  
 Result : negative

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

Species : Rat  
 Result : negative

Species : Mouse  
 Result : negative

### Reproductive toxicity

Suspected of damaging fertility or the unborn child.

#### Components:

##### **Solvent naphtha (petroleum), light aromatic:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
 Species: Rat  
 Application Route: inhalation (vapour)  
 Result: negative

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

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### Xylene:

- Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Result: negative
- Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: inhalation (vapour)  
Result: negative
- Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.  
Remarks: Based on national or regional regulation.

### 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

### 4-Nonylphenol, branched, ethoxylated:

- Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

### Calcium bis(dodecylbenzenesulphonate), branched:

- Effects on fertility : Test Type: Three-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials
- Effects on foetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

### STOT - single exposure

- May cause drowsiness or dizziness.  
May cause damage to organs.



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**Components:****Solvent naphtha (petroleum), light aromatic:**

Assessment : May cause drowsiness or dizziness.

**Xylene:**

Assessment : May cause respiratory irritation.

**Permethrin (ISO):**

Assessment : May cause damage to organs.  
Remarks : Based on national or regional regulation.

**STOT - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

**Components:****Xylene:**

Exposure routes : inhalation (vapour)  
Target Organs : Auditory system  
Assessment : Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

**Permethrin (ISO):**

Assessment : May cause damage to organs through prolonged or repeated exposure.  
Remarks : Based on national or regional regulation.

**Repeated dose toxicity****Components:****Solvent naphtha (petroleum), light aromatic:**

Species : Rat  
LOAEL : 500 mg/kg  
Application Route : Ingestion  
Exposure time : 28 Days

**Xylene:**

Species : Rat  
LOAEL : > 0.2 - 1 mg/l  
Application Route : inhalation (vapour)  
Exposure time : 13 Weeks  
Remarks : Based on data from similar materials

Species : Rat  
LOAEL : 150 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days

**Permethrin (ISO):**

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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

### 4-Nonylphenol, branched, ethoxylated:

Species	:	Rat
LOAEL	:	150 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 Days
Method	:	OPPTS 870.3100
Remarks	:	Based on data from similar materials

### Aspiration toxicity

May be fatal if swallowed and enters airways.

### Components:

#### Solvent naphtha (petroleum), light aromatic:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

#### Xylene:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

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## Section 12: Ecological information

### Ecotoxicity

#### Components:

#### Solvent naphtha (petroleum), light aromatic:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction
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Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202
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Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201
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NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l  
 Exposure time: 96 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Daphnia magna (Water flea)): 2.6 mg/l  
 Exposure time: 21 d  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 211

**Xylene:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 13.5 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l  
 Exposure time: 24 h  
 Method: OECD Test Guideline 202  
 Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Skeletonema costatum (marine diatom)): 10 mg/l  
 Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): > 0.1 - < 1 mg/l  
 Exposure time: 35 d  
 Method: OECD Test Guideline 210  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EL10 (Daphnia magna (Water flea)): > 1 - 10 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211  
 Remarks: Based on data from similar materials

Toxicity to microorganisms : NOEC: > 100 mg/l  
 Exposure time: 3 h  
 Method: OECD Test Guideline 209  
 Remarks: Based on data from similar materials

**Permethrin (ISO):**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.0001 mg/l  
 Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.13 mg/l  
 Exposure time: 72 h

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023 mg/l  
 Exposure time: 72 h

M-Factor (Acute aquatic tox- : 10,000

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icity)  
 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

M-Factor (Chronic aquatic toxicity) : 10,000

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

### 4-Nonylphenol, branched, ethoxylated:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 8.2 mg/l  
 Exposure time: 96 h

### Calcium bis(dodecylbenzenesulphonate), branched:

Toxicity to fish : LC50 : > 1 - 10 mg/l  
 Exposure time: 96 h  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 62 mg/l  
 Exposure time: 48 h  
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 10 - 100 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

### Persistence and degradability

#### Components:

#### **Solvent naphtha (petroleum), light aromatic:**

Biodegradability : Result: Inherently biodegradable.  
 Biodegradation: 94 %  
 Exposure time: 25 d

#### **Xylene:**

Biodegradability : Result: Readily biodegradable.  
 Biodegradation: > 70 %  
 Exposure time: 28 d

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Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

**Permethrin (ISO):**

Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301F

**4-Nonylphenol, branched, ethoxylated:**

Biodegradability : Result: Not readily biodegradable.

**Calcium bis(dodecylbenzenesulphonate), branched:**

Biodegradability : Result: Readily biodegradable.  
Remarks: Based on data from similar materials

**Bioaccumulative potential****Components:****Xylene:**

Partition coefficient: n- : log Pow: 3.16  
octanol/water                Remarks: Calculation

**Permethrin (ISO):**

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

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

**4-Nonylphenol, branched, ethoxylated:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): < 100  
Remarks: Based on data from similar materials

**Calcium bis(dodecylbenzenesulphonate), branched:**

Partition coefficient: n- : Remarks: Not applicable  
octanol/water

**Mobility in soil**

No data available

**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.  
Do not dispose of waste into sewer.  
Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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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.

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**Section 14: Transport information****International Regulations****UNRTDG**

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, Xylene)
Class	:	3
Packing group	:	III
Labels	:	3

**IATA-DGR**

UN/ID No.	:	UN 1993
Proper shipping name	:	Flammable liquid, n.o.s. (Solvent naphtha (petroleum), light aromatic, Xylene)
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

**IMDG-Code**

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, Xylene, Permethrin (ISO))
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, <u>S-E</u>
Marine pollutant	:	yes

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**National Regulations****NZS 5433**

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, Xylene)
Class	:	3
Packing group	:	III
Labels	:	3
Hazchem Code	:	3Y

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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.

## Section 15: Regulatory information

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

#### HSNO Approval Number

HSR100759 Veterinary Medicines Non dispersive Open System Application Group Standard

#### HSW Controls

Certified handler certificate not required.

Tracking hazardous substance not required.

Refer to the Health and Safety at Work (Hazardous Substances) Regulations 2017, for further information.

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

AICS	:	not determined
DSL	:	not determined
IECSC	:	not determined

## Section 16: Other information

Revision Date : 04.04.2023

### 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/>

Date format : dd.mm.yyyy

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NZ BEI	:	New Zealand. Biological Exposure Indices
NZ OEL	:	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NZ OEL / WES-TWA	:	Workplace Exposure Standard - Time Weighted average
NZ OEL / WES-STEL	:	Workplace Exposure Standard - Short-Term Exposure Limit

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

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x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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

NZ / EN