

**Fluralaner / Moxidectin Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 2023/09/30
12.0	2023/12/06	656884-00021	Date of first issue: 2016/05/02

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**1. PRODUCT AND COMPANY IDENTIFICATION**

Chemical product name : Fluralaner / Moxidectin Liquid Formulation

Other means of identification : Bravecto Plus (A011446)  
BRAVECTO PLUS FLEA, TICK AND WORM 112.5 MG  
FLURALANER AND 5.6 MG MOXIDECTIN SPOT-ON  
SOLUTION FOR KITTENS AND SMALL CATS (85418)  
BRAVECTO PLUS FLEA, TICK AND WORM 250 MG  
FLURALANER AND 12.5 MG MOXIDECTIN SPOT-ON  
SOLUTION FOR MEDIUM CATS (85416)  
BRAVECTO PLUS FLEA, TICK AND WORM 500 MG  
FLURALANER AND 25 MG MOXIDECTIN SPOT-ON  
SOLUTION FOR LARGE CATS (85413)

**Supplier's company name, address and phone number**

Company name of supplier : MSD

Address : Kumagaya, Saitama Prefecture , Xicheng 810 MSD Co., Ltd.  
Menuma factory

Telephone : 048-588-8411

E-mail address : EHSDATASTEWARD@msd.com

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

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

Recommended use : Veterinary product

Restrictions on use : Not applicable

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**2. HAZARDS IDENTIFICATION****GHS classification of chemical product**

Flammable liquids : Category 2

Serious eye damage/eye irritation : Category 2

Reproductive toxicity : Category 1B

Specific target organ toxicity - repeated exposure : Category 2 (Central nervous system)

Short-term (acute) aquatic hazard : Category 1

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Long-term (chronic) aquatic hazard : Category 1

**GHS label elements**

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.  
 H319 Causes serious eye irritation.  
 H360D May damage the unborn child.  
 H373 May cause damage to organs (Central nervous system) 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.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
 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 + P313 IF exposed or concerned: Get medical advice/ attention.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P391 Collect spillage.

**Storage:**

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

**Disposal:**

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

### Other hazards which do not result in classification

Important symptoms and out- : Vapours may form explosive mixture with air.  
 lines of the emergency as-  
 sumed

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)	ENCS No.
N,N-Dimethylacetamide	127-19-5	35	2-723
Fluralaner	864731-61-3	>= 25 - < 30	
Poly(oxy-1,2-ethanediyl), .alpha.- [(tetrahydro-2-furanyl)methyl]- .omega.-hydroxy-	31692-85-0	>= 20 - < 30	
Acetone	67-64-1	>= 10 - <= 15	2-542
N,N-Diethyl-m-toluamide	134-62-3	>= 10 - <= 15	3-1321
Moxidectin	113507-06-5	>= 1 - < 2.5	
2,6-Di-tert-butyl-p-cresol	128-37-0	> 0 - < 10	3-540, 9-1805

### 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.  
 Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and 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 : 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.

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Most important symptoms and effects, both acute and delayed	:	Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Causes serious eye irritation. May damage the unborn child. May cause 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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### 5. FIREFIGHTING 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. Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Chlorine compounds Fluorine compounds Nitrogen oxides (NO <sub>x</sub> )
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.

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### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Ventilate the area. 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

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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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### 7. HANDLING AND STORAGE

#### 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.  
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.
- Do not eat, drink or smoke when using this product.
- Take care to prevent spills, waste and minimize release to the environment.

Avoidance of contact : Oxidizing agents

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.
- The effective operation of a facility should include review of engineering controls, proper personal protective equipment,

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appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

### Storage

- 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:  
 Oxidizing solids  
 Oxidizing liquids
- Packaging material : Unsuitable material: None known.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Threshold limit value and permissible exposure limits for each component in the work environment

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Reference concentration / Permissible concentration	Basis
N,N-Dimethylacetamide	127-19-5	ACL	10 ppm	JP OEL ISHL
		OEL-M	10 ppm 36 mg/m <sup>3</sup>	JP OEL JSOH
Further information: Group 2: Substances presumed to cause reproductive toxicity in humans, Skin absorption, Group 2B: possibly carcinogenic to humans				
Fluralaner	864731-61-3	TWA	10 ppm	ACGIH
		TWA	100 µg/m <sup>3</sup> (OEB 2)	Internal
Further information: Skin				
Acetone	67-64-1	Wipe limit	1000 µg/100 cm <sup>2</sup>	Internal
		ACL	500 ppm	JP OEL ISHL
		OEL-M	200 ppm 475 mg/m <sup>3</sup>	JP OEL JSOH
		TWA	250 ppm	ACGIH
Moxidectin	113507-06-5	STEL	500 ppm	ACGIH
		TWA	10 µg/m <sup>3</sup> (OEB 3)	Internal
2,6-Di-tert-butyl-p-cresol	128-37-0	Wipe limit	100 µg/100 cm <sup>2</sup>	Internal
		TWA (Inhalable fraction and vapor)	2 mg/m <sup>3</sup>	ACGIH

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**Biological occupational exposure limits**

Components	CAS-No.	Target substance	Biological specimen	Sampling time	Permissible concentration	Basis
N,N-Dimethylacetamide	127-19-5	N-Methylacetamide	Urine	End of shift at end of work-week	30 mg/g creatinine	ACGIH BEI
Acetone	67-64-1	Acetone	Urine	Within 2 h prior to end of shift	40 mg/l	JSOH
		Acetone	Urine	End of shift (As soon as possible after exposure ceases)	25 mg/l	ACGIH BEI

**Engineering measures** : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).  
 All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.  
 Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).  
 Minimize open handling.  
 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 : Self-contained breathing apparatus  
 Hand protection  
 Material : Chemical-resistant gloves  
 Remarks : Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.  
 Eye protection : Wear safety glasses with side shields or goggles.  
 If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.  
 Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

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Skin and body protection : Work uniform or laboratory coat.  
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
Use appropriate degowning techniques to remove potentially contaminated clothing.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	:	liquid
Colour	:	Colorless to pale yellow
Odour	:	No data available
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Boiling point, initial boiling point and boiling range	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Not applicable
Lower explosion limit and upper explosion limit / flammability limit	:	
Upper explosion limit / Up- per flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	2 °C
		Method: closed cup
Decomposition temperature	:	No data available
pH	:	No data available
Evaporation rate	:	No data available
Auto-ignition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	7.5 mm <sup>2</sup> /s
Solubility(ies)	:	
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable



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Vapour pressure : No data available

Density and / or relative density  
Relative density : 1.06

Density : 1.08 g/cm<sup>3</sup>

Relative vapour density : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Particle characteristics  
Particle size : Not applicable

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**10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Highly flammable liquid and vapour.  
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 products : No hazardous decomposition products are known.

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**11. TOXICOLOGICAL INFORMATION**

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

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 2,000 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

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Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

### Components:

#### **N,N-Dimethylacetamide:**

Acute oral toxicity : LD50 (Rat): 4,800 mg/kg

Acute inhalation toxicity : LC50 (Rat): 2.2 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

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

#### **Fluralaner:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Remarks: No mortality observed at this dose.  
No significant adverse effects were reported

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Remarks: No significant adverse effects were reported

#### **Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:**

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg  
Method: OECD Test Guideline 423  
Remarks: Based on data from similar materials

#### **Acetone:**

Acute oral toxicity : LD50 (Rat): 5,800 mg/kg

Acute inhalation toxicity : LC50 (Rat): 76 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): 7,426 mg/kg

#### **N,N-Diethyl-m-toluamide:**

Acute oral toxicity : LD50 (Rat): 1,950 mg/kg

Acute inhalation toxicity : LC50 (Rat): 5.95 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): 5,000 mg/kg

#### **Moxidectin:**

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Acute oral toxicity	:	LD50 (Rat): 106 mg/kg LD50 (Mouse): 42 - 84 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 3.28 mg/l Exposure time: 5 h Test atmosphere: dust/mist  LC50 (Rat): 2.87 - 4.06 mg/l Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Remarks: No significant adverse effects were reported
Acute toxicity (other routes of administration)	:	LD50 (Rat): 394 mg/kg Application Route: Intraperitoneal  LD50 (Mouse): 84 mg/kg Application Route: Intraperitoneal  LD50 (Rat): > 640 mg/kg Application Route: Subcutaneous  LD50 (Mouse): 263 mg/kg Application Route: Subcutaneous

### 2,6-Di-tert-butyl-p-cresol:

Acute oral toxicity	:	LD50 (Rat): > 6,000 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

### Skin corrosion/irritation

Not classified based on available information.

### Components:

#### N,N-Dimethylacetamide:

Species	:	Rabbit
Result	:	No skin irritation

#### Fluralaner:

Species	:	Rabbit
Result	:	No skin irritation

#### Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:

Species	:	reconstructed human epidermis (RhE)
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|| Method : OECD Test Guideline 439  
 || Remarks : Based on data from similar materials

|| Result : No skin irritation

### Acetone:

|| Assessment : Repeated exposure may cause skin dryness or cracking.

### N,N-Diethyl-m-toluamide:

|| Species : Rabbit  
 || Result : No skin irritation

### Moxidectin:

|| Species : Rabbit  
 || Result : Mild skin irritation

### 2,6-Di-tert-butyl-p-cresol:

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

### Serious eye damage/eye irritation

Causes serious eye irritation.

### Components:

#### N,N-Dimethylacetamide:

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

#### Fluralaner:

|| Species : Rabbit  
 || Result : Mild eye irritation

#### Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:

|| Species : Tissue Culture  
 || Method : OECD Test Guideline 492  
 || Remarks : Based on data from similar materials

|| Species : Bovine cornea  
 || Method : OECD Test Guideline 437  
 || Remarks : Based on data from similar materials

|| Result : Irritation to eyes, reversing within 21 days

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**Acetone:**

Species	: Rabbit
Result	: Irritation to eyes, reversing within 21 days
Method	: OECD Test Guideline 405

**N,N-Diethyl-m-toluamide:**

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

**Moxidectin:**

Species	: Rabbit
Result	: Moderate eye irritation

**2,6-Di-tert-butyl-p-cresol:**

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

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

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Components:****N,N-Dimethylacetamide:**

Exposure routes	: Skin contact
Species	: Guinea pig
Result	: negative

**Fluralaner:**

Test Type	: Maximisation Test
Exposure routes	: Dermal
Species	: Guinea pig
Result	: Not a skin sensitizer.

**Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:**

Test Type	: KeratinoSens assay
Method	: OECD Test Guideline 442D
Result	: negative
Remarks	: Based on data from similar materials

Test Type	: Direct Peptide Reactivity Assay (DPRA)
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Method	: OECD Test Guideline 442C
Result	: positive
Remarks	: Based on data from similar materials

Test Type	: Dendritic cell activation test
Method	: OECD Test Guideline 442E
Result	: negative
Remarks	: Based on data from similar materials

### Acetone:

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

### Moxidectin:

Test Type	: Buehler Test
Exposure routes	: Dermal
Species	: Guinea pig
Result	: Not a skin sensitizer.

### 2,6-Di-tert-butyl-p-cresol:

Test Type	: Human repeat insult patch test (HRIPT)
Exposure routes	: Skin contact
Species	: Humans
Result	: negative

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### N,N-Dimethylacetamide:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	: Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Rat Application Route: Inhalation Method: OECD Test Guideline 478 Result: negative

#### Fluralaner:

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

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Genotoxicity in vivo : Test Type: Chromosomal aberration  
 Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
 Species: Mouse  
 Cell type: Bone marrow  
 Application Route: Oral  
 Result: negative

**Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:**

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

**Acetone:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
 Result: negative

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

Test Type: Chromosome aberration test in vitro  
 Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
 Species: Mouse  
 Application Route: Ingestion  
 Result: negative

**N,N-Diethyl-m-toluamide:**

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

**Moxidectin:**

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

Test Type: In vitro mammalian cell gene mutation test  
 Test system: Chinese hamster ovary cells  
 Result: negative

Test Type: in vitro assay  
 Test system: Escherichia coli  
 Result: negative

Genotoxicity in vivo : Test Type: Chromosomal aberration  
 Species: Rat

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Cell type: Bone marrow  
Result: negative

Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo  
Species: Rat  
Cell type: Liver cells  
Result: negative

### 2,6-Di-tert-butyl-p-cresol:

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

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: Ingestion  
Result: negative

### Carcinogenicity

Not classified based on available information.

### Components:

#### **N,N-Dimethylacetamide:**

Species : Rat  
Application Route : inhalation (vapour)  
Exposure time : 18 month(s)  
Result : negative

#### **Fluralaner:**

Carcinogenicity - Assessment : No data available

#### **Acetone:**

Species : Mouse  
Application Route : Skin contact  
Exposure time : 424 days  
Result : negative

#### **N,N-Diethyl-m-toluamide:**

Species : Rat  
Application Route : Ingestion



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Exposure time : 104 weeks  
Result : negative

### Moxidectin:

Species : Mouse  
Application Route : Oral  
Exposure time : 2 Years  
NOAEL : 4.5 mg/kg body weight  
Result : negative

Species : Rat  
Application Route : Oral  
Exposure time : 2 Years  
NOAEL : 4.5 mg/kg body weight  
Result : negative

Species : Dog  
Application Route : Oral  
Exposure time : 1 Years  
NOAEL : 0.5 mg/kg body weight  
Result : negative

### 2,6-Di-tert-butyl-p-cresol:

Species : Rat  
Application Route : Ingestion  
Exposure time : 22 Months  
Result : negative

### Reproductive toxicity

May damage the unborn child.

### Components:

#### N,N-Dimethylacetamide:

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Inhalation  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Inhalation  
Result: positive

Reproductive toxicity - Assessment : Clear evidence of adverse effects on development, based on animal experiments.

#### Fluralaner:

Effects on fertility : Test Type: Two-generation study  
Species: Rat

## Fluralaner / Moxidectin Liquid Formulation

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	<p>Application Route: Oral          General Toxicity - Parent: NOAEL: 50 mg/kg body weight          General Toxicity F1: LOAEL: 100 mg/kg body weight          Result: No effects on fertility, Postimplantation loss., Adverse neonatal effects.</p> <p>Test Type: One-generation reproduction toxicity study          Species: Dog          Application Route: Oral          Fertility: NOAEL: 75 mg/kg body weight          Result: No effects on fertility and early embryonic development were detected.          Remarks: No significant adverse effects were reported</p>
Effects on foetal development	<p>: Test Type: Development          Species: Rat          Application Route: Oral          Developmental Toxicity: NOAEL: 100 mg/kg body weight          Result: Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses, No teratogenic effects</p> <p>Test Type: Development          Species: Rabbit          Application Route: Oral          Developmental Toxicity: NOAEL: 10 mg/kg body weight          Result: Skeletal malformations, Visceral malformations          Remarks: Maternal toxicity observed.</p> <p>Test Type: Development          Species: Rabbit          Application Route: Dermal          Developmental Toxicity: NOAEL: 100 mg/kg body weight          Result: Skeletal malformations</p>
Reproductive toxicity - Assessment	<p>: Suspected of damaging the unborn child.</p>

**Acetone:**

	<p>Effects on fertility : Test Type: One-generation reproduction toxicity study          Species: Rat          Application Route: Ingestion          Result: negative</p>
Effects on foetal development	<p>: Test Type: Embryo-foetal development          Species: Rat          Application Route: inhalation (vapour)          Result: negative</p>

**N,N-Diethyl-m-toluamide:**

	<p>Effects on foetal development : Test Type: Embryo-foetal development          Species: Rat</p>
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Application Route: Ingestion  
 Result: negative

### Moxidectin:

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Oral  
 General Toxicity F1: LOAEL: 0.8 mg/kg body weight  
 Symptoms: Reduced foetal weight, foetal mortality  
 Result: No effects on fertility, Some evidence of adverse effects on development, based on animal experiments.

Test Type: Three-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Oral  
 General Toxicity F1: LOAEL: 0.8 mg/kg body weight  
 Symptoms: Reduced foetal weight, foetal mortality  
 Result: No effects on fertility, Some evidence of adverse effects on development, based on animal experiments.

Effects on foetal development : Test Type: Embryo-foetal development  
 Species: Rat  
 Application Route: Oral  
 General Toxicity Maternal: LOAEL: 10 mg/kg body weight  
 Embryo-foetal toxicity: LOAEL: 10 mg/kg body weight  
 Result: Skeletal malformations  
 Remarks: The effects were seen only at maternally toxic doses.

Test Type: Embryo-foetal development  
 Species: Rabbit  
 Application Route: Oral  
 General Toxicity Maternal: LOAEL: 5 mg/kg body weight  
 Developmental Toxicity: NOAEL: 10 mg/kg body weight  
 Result: No teratogenic effects, No embryotoxic effects

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

### 2,6-Di-tert-butyl-p-cresol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Ingestion  
 Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
 Species: Rat  
 Application Route: Ingestion  
 Result: negative

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### STOT - single exposure

Not classified based on available information.

#### Components:

##### Acetone:

|| Assessment : May cause drowsiness or dizziness.

### STOT - repeated exposure

May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

#### Components:

##### Moxidectin:

|| Target Organs : Central nervous system  
 || Assessment : Causes damage to organs through prolonged or repeated exposure.

##### 2,6-Di-tert-butyl-p-cresol:

|| Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

### Repeated dose toxicity

#### Components:

##### N,N-Dimethylacetamide:

|| Species : Rat  
 || NOAEL : 90 mg/m<sup>3</sup>  
 || LOAEL : 360 mg/m<sup>3</sup>  
 || Application Route : inhalation (vapour)  
 || Exposure time : 24 Months

##### Fluralaner:

|| Species : Dog  
 || NOAEL : 1 mg/kg  
 || Application Route : Oral  
 || Exposure time : 52 Weeks  
 || Target Organs : Liver  
 || Remarks : No significant adverse effects were reported

|| Species : Juvenile dog  
 || LOAEL : 56 - 280 mg/kg  
 || Application Route : Oral  
 || Exposure time : 24 Weeks  
 || Symptoms : Diarrhoea

|| Species : Rat  
 || LOAEL : 400 mg/kg  
 || Application Route : Oral

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Exposure time : 90 Days  
 Target Organs : Liver, thymus gland

Species : Rat  
 NOAEL : 500 mg/kg  
 Application Route : Dermal  
 Exposure time : 90 Days  
 Target Organs : Liver  
 Remarks : No significant adverse effects were reported

**Acetone:**

Species : Rat  
 NOAEL : 900 mg/kg  
 LOAEL : 1,700 mg/kg  
 Application Route : Ingestion  
 Exposure time : 90 Days

Species : Rat  
 NOAEL : 45 mg/l  
 Application Route : inhalation (vapour)  
 Exposure time : 8 Weeks

**Moxidectin:**

Species : Mouse  
 NOAEL : 3.9 mg/kg  
 LOAEL : 15.4 mg/kg  
 Application Route : Oral  
 Exposure time : 4 Weeks  
 Symptoms : Tremors

Species : Rat  
 NOAEL : 3.9 mg/kg  
 LOAEL : 7.9 mg/kg  
 Application Route : Oral  
 Exposure time : 13 Weeks  
 Target Organs : Central nervous system  
 Symptoms : Tremors, Salivation

Species : Dog  
 NOAEL : 0.3 mg/kg  
 LOAEL : 0.9 mg/kg  
 Application Route : Oral  
 Exposure time : 90 Days  
 Target Organs : Central nervous system  
 Symptoms : Tremors, Lachrymation, Salivation

Species : Dog  
 NOAEL : 0.3 mg/kg  
 LOAEL : 0.87 mg/kg  
 Application Route : Oral  
 Exposure time : 52 Weeks

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|| Target Organs : Central nervous system  
|| Symptoms : Tremors, Lachrymation

**2,6-Di-tert-butyl-p-cresol:**

|| Species : Rat  
|| NOAEL : 25 mg/kg  
|| Application Route : Ingestion  
|| Exposure time : 22 Months

**Aspiration toxicity**

Not classified based on available information.

**Components:****Fluralaner:**

|| Not applicable

**Acetone:**

|| The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

**Experience with human exposure****Components:****Fluralaner:**

|| Skin contact : Remarks: May irritate skin.  
|| Eye contact : Remarks: May cause eye irritation.

**Moxidectin:**

|| Inhalation : Remarks: No human information is available.  
|| Skin contact : Remarks: No human information is available.  
|| Eye contact : Remarks: No human information is available.  
|| Ingestion : Remarks: No human information is available.

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**12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****N,N-Dimethylacetamide:**

|| Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 500 mg/l  
Exposure time: 96 h

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Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 500 mg/l Exposure time: 48 h Method: Directive 67/548/EEC, Annex V, C.2.
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l Exposure time: 72 h  EC10 (Desmodesmus subspicatus (green algae)): > 500 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC10: > 1,995 mg/l Exposure time: 30 min

**Fluralaner:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.0488 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 0.015 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: No toxicity at the limit of solubility
Toxicity to algae/aquatic plants	:	NOEC (Pseudokirchneriella subcapitata (green algae)): >= 0.08 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility
Toxicity to fish (Chronic toxicity)	:	NOEC (Zebrafish): >= 0.049 mg/l Exposure time: 21 d Method: OECD Test Guideline 204 Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.0736 µg/l Exposure time: 21 d Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	1,000

**Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:**

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h

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Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

### Acetone:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 5,540 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 8,800 mg/l  
 Exposure time: 48 h

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)): 7,000 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): >= 79 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50: 61,150 mg/l  
 Exposure time: 30 min  
 Method: ISO 8192

### N,N-Diethyl-m-toluamide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 97 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 75 mg/l  
 Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 41 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201

NOEC (Selenastrum capricornutum (green algae)): 7.6 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 3.7 mg/l  
 Exposure time: 21 d

### Moxidectin:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.0006 mg/l  
 Exposure time: 96 h



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	Method: OECD Test Guideline 203
	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.0002 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0.00003 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EC50 (Pseudokirchneriella subcapitata (green algae)): 0.087 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	: 10,000
M-Factor (Chronic aquatic toxicity)	: 10,000
<b>2,6-Di-tert-butyl-p-cresol:</b>	
Toxicity to fish	: LC50 (Danio rerio (zebra fish)): > 0.57 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0.48 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.24 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
	NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	: 1
Toxicity to fish (Chronic toxicity)	: NOEC (Oryzias latipes (Japanese medaka)): 0.053 mg/l Exposure time: 30 d Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.316 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	: 1
Toxicity to microorganisms	: EC50: > 10,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

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**Persistence and degradability****Components:****N,N-Dimethylacetamide:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 70 % Exposure time: 28 d Remarks: The 10 day time window criterion is not fulfilled.
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**Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:**

Biodegradability	:	Result: Not readily biodegradable. Method: OECD Test Guideline 301F Remarks: Based on data from similar materials
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**Acetone:**

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 91 % Exposure time: 28 d
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**N,N-Diethyl-m-toluamide:**

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 83.8 % Exposure time: 28 d Method: OECD Test Guideline 301B
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**2,6-Di-tert-butyl-p-cresol:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 4.5 % Exposure time: 28 d Method: OECD Test Guideline 301C
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**Bioaccumulative potential****Components:****Fluralaner:**

Bioaccumulation	:	Species: Zebrafish Bioconcentration factor (BCF): 79.4 Method: OECD Test Guideline 305
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Partition coefficient: n-octanol/water	:	log Pow: 4.5
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**Poly(oxy-1,2-ethanediyl), .alpha.-[(tetrahydro-2-furanyl)methyl]-.omega.-hydroxy-:**

Partition coefficient: n-octanol/water	:	log Pow: < 4 Remarks: Calculation
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### Acetone:

Partition coefficient: n-octanol/water : log Pow: -0.27 - -0.23

### N,N-Diethyl-m-toluamide:

Partition coefficient: n-octanol/water : log Pow: 2.02

### Moxidectin:

Partition coefficient: n-octanol/water : log Pow: 4.7

### 2,6-Di-tert-butyl-p-cresol:

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 330 - 1,800

Partition coefficient: n-octanol/water : log Pow: 5.1

### Mobility in soil

### Components:

#### Fluralaner:

Distribution among environmental compartments : log Koc: 4.1

### Hazardous to the ozone layer

Not applicable

### Other adverse effects

### Components:

#### Fluralaner:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

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## 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. 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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**14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number : UN 1090  
Proper shipping name : ACETONE SOLUTION  
Class : 3  
Packing group : II  
Labels : 3  
Environmentally hazardous : no

**IATA-DGR**

UN/ID No. : UN 1090  
Proper shipping name : Acetone solution  
Class : 3  
Packing group : II  
Labels : Flammable Liquids  
Packing instruction (cargo aircraft) : 364  
Packing instruction (passenger aircraft) : 353

**IMDG-Code**

UN number : UN 1090  
Proper shipping name : ACETONE SOLUTION  
(Fluralaner, Moxidectin)  
Class : 3  
Packing group : II  
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.

**National Regulations**

Refer to section 15 for specific national regulation.

**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.

**ERG Code** : 127

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**15. REGULATORY INFORMATION****Related Regulations****Fire Service Law**

Group 4, Type 1 petroleum, Water insoluble liquid, (200 litre), Hazardous rank II

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**Chemical Substance Control Law**

Priority Assessment Chemical Substance

Chemical name	Number
2,6-Di-tert-butyl-4-methylphenol	64

**Industrial Safety and Health Law****Harmful Substances Prohibited from Manufacture**

Not applicable

**Harmful Substances Required Permission for Manufacture**

Not applicable

**Substances Prevented From Impairment of Health**

Chemical name
N,N-dimethylacetamide

**Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity**

Not applicable

**Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity**

Not applicable

**Substances Subject to be Notified Names**

Article 57-2 (Enforcement Order Table 9)

Chemical name	Concentration (%)	Remarks
N,N-Dimethylacetamide	>=30 - <=35	-
N,N-diethyl-m-toluamide	>=10 - <=15	From April 1st, 2026
Acetone	>=10 - <=15	-
2,6-Di-tert-butyl-4-cresol	>0 - <10	-

**Substances Subject to be Indicated Names**

Article 57 (Enforcement Order Article 18)

Chemical name	Remarks
N,N-Dimethylacetamide	-
N,N-diethyl-m-toluamide	From April 1st, 2026
acetone	-

**Carcinogenic Substances (Article 577-2 of the Occupational Health and Safety Regulations)**

Chemical name
N,N-Dimethylacetamide

**Ordinance on Prevention of Hazards Due to Specified Chemical Substances**

Not applicable

**Ordinance on Prevention of Lead Poisoning**

Not applicable

**Ordinance on Prevention of Tetraalkyl Lead Poisoning**

Not applicable

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### Ordinance on Prevention of Organic Solvent Poisoning

Organic Solvents Class 2

### Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)

Inflammable Substance

### Poisonous and Deleterious Substances Control Law

Not applicable

### Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

### Class I Designated Chemical Substances

Chemical name	Administration number	Concentration (%)
N,N-Dimethylacetamide	213	35

### High Pressure Gas Safety Act

Not applicable

### Explosive Control Law

Not applicable

### Vessel Safety Law

Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

### Aviation Law

Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

### Marine Pollution and Sea Disaster Prevention etc Law

Bulk transportation : Noxious liquid substance(Category Z)

Pack transportation : Classified as marine pollutant

### Narcotics and Psychotropics Control Act

Narcotic or Psychotropic Raw Material (Export / Import Permission)

Not applicable

Specific Narcotic or Psychotropic Raw Material (Export / Import permission)

Not applicable

### Waste Disposal and Public Cleansing Law

Specially Controlled Industrial Waste

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

AICS : not determined

DSL : not determined

IECSC : not determined

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### 16. OTHER INFORMATION

#### 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/>

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

Date format : yyyy/mm/dd

#### Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
JP OEL ISHL	: Japan. Administrative Control Levels
JP OEL JSOH	: Japan. The Japan Society for Occupational Health. Recommendation of Occupational Exposure Limits
JSOH	: Occupational exposure limits based on biological monitoring (JSOH).
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
JP OEL ISHL / ACL	: Administrative Control level
JP OEL JSOH / OEL-M	: Occupational Exposure Limit-Mean

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with 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; KECl - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; 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 - Trans-

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portation 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.

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