

Deltamethrin (5%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.0 06.07.2024 2333287-00019 Date of first issue: 12.12.2017

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Deltamethrin (5%) Formulation

Manufacturer or supplier's details

Company name of supplier : MSD

Address : 126 E. Lincoln Avenue

Rahway, New Jersey U.S.A. 07065

Telephone : 908-740-4000 Emergency telephone : 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

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye

irritation

Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity

- single exposure

Category 3

Specific target organ toxicity

- repeated exposure (Oral)

Category 1 (Central nervous system, Immune system)

Specific target organ toxicity

- repeated exposure

(Inhalation)

Category 1 (Central nervous system)

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :







Signal Word : Danger



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Hazard Statements : H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness.

H361fd Suspected of damaging fertility. Suspected of damaging

the unborn child.

H372 Causes damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swal-

lowed.

H372 Causes damage to organs (Central nervous system)

through prolonged or repeated exposure if inhaled.

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.

P260 Do not breathe mist or vapors.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

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

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P308 + P313 IF exposed or concerned: Get medical advice/

P331 Do NOT induce vomiting.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P405 Store locked up.

Disposal:



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

Other hazards

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). Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Hydrocarbons, C9, aromatics	Not Assigned	>= 30 -< 50
2-Methoxy-1-methylethyl acetate	108-65-6	>= 20 -< 30
Benzenesulfonic acid, C10-13-alkyl derivs.,	Not Assigned	>= 5 -< 10
calcium salts		
2-Methyl-1-propanol	78-83-1	>= 5 -< 10
Deltamethrin (ISO)	52918-63-5	>= 5 -< 10

SECTION 4. FIRST AID MEASURES

General advice In the case of accident or if you feel unwell, seek medical

advice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled If inhaled, remove to fresh air.

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 contact, immediately flush eyes with plenty of water In case of eye contact

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention immediately.

If swallowed If swallowed, DO NOT induce vomiting.

If vomiting occurs have person lean forward.

Call a physician or poison control center immediately.

Rinse mouth thoroughly with water.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and

Harmful if swallowed.

delayed

May be fatal if swallowed and enters airways.

Causes skin irritation.

May cause an allergic skin reaction. Causes serious eye damage.

May cause respiratory irritation. May cause drowsiness or dizziness.

Suspected of damaging fertility. Suspected of damaging the

unborn child.



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Causes damage to organs through prolonged or repeated

exposure if swallowed.

Causes damage to organs through prolonged or repeated

exposure if inhaled.

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 (CO2)

High volume water jet

Dry chemical

Unsuitable extinguishing

media

Specific hazards during fire

fighting

Do not use a solid water stream as it may scatter and spread

fire.

Flash back possible over considerable distance. Vapors may form explosive mixtures with air.

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod-

ucts

Carbon oxides

Nitrogen oxides (NOx) Bromine compounds

Sulfur oxides Metal oxides

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment:

for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emer-

gency 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.



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Methods and materials for containment and cleaning up

Non-sparking tools should be used. Soak up with inert absorbent material.

Suppress (knock down) gases/vapors/mists with a water spray

jet.

For large spills, provide diking or other appropriate

containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate

container.

Clean up remaining materials from spill with suitable

absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items

employed in the cleanup of releases. You will need to

determine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust

ventilation.

Use explosion-proof electrical, ventilating and lighting equip-

ment.

Advice on safe handling : Do not get on skin or clothing.

Do not breathe mist or vapors.

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.

Already sensitized individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease,

should consult their physician regarding working with

respiratory irritants or sensitizers.

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.

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.



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The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the

use of administrative controls.

Conditions for safe storage : Keep in properly labeled containers.

Store locked up. Keep tightly closed.

Keep in a cool, well-ventilated place.

Store in accordance with the particular national regulations.

Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:

Strong oxidizing agents

Self-reactive substances and mixtures

Organic peroxides Flammable solids Pyrophoric liquids Pyrophoric solids

Self-heating substances and mixtures

Substances and mixtures which in contact with water emit

flammable gases

Explosives Gases

Very acutely toxic substances and mixtures

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

	Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
	2-Methyl-1-propanol	78-83-1	VLE-PPT	50 ppm	NOM-010- STPS-2014
Г			TWA	50 ppm	ACGIH
	Deltamethrin (ISO)	52918-63-5	TWA	15 μg/m3 (OEB 3)	Internal
		Further information: DSEN, Skin			
			Wipe limit	100 μg/100 cm ²	Internal

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.



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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

Hand protection

Combined particulates and organic vapor type

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.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : yellow

Odor : No data available

Odor Threshold : No data available

pH : 3-5

Melting point/freezing point : No data available

Initial boiling point and boiling

range

No data available

Flash point : 45 - 51 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Not applicable

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower : No data available



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flammability limit

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 0.963 - 0.967 g/cm³

Solubility(ies)

Water solubility : completely miscible

Partition coefficient: n-

octanol/water

No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : No data available

Explosive properties : Not explosive

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

Molecular weight : No data available

Particle characteristics

Particle size : Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard. Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

Flammable liquid and vapor.

Vapors may form explosive mixture with air. Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Skin contact Ingestion Eye contact



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Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate: 1,108 mg/kg

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 10 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg

Method: Calculation method

Components:

Hydrocarbons, C9, aromatics:

Acute oral toxicity : LD50 (Rat, female): 3,492 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 6.193 mg/l

Exposure time: 4 h
Test atmosphere: vapor

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

2-Methoxy-1-methylethyl acetate:

Acute oral toxicity : LD50 (Rat, female): 5,155 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 9.34 mg/l

Exposure time: 4 h
Test atmosphere: vapor

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

Assessment: The substance or mixture has no acute dermal

toxicity

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Acute oral toxicity : LD50 (Rat): 4,445 mg/kg

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

Method: OECD Test Guideline 402

Remarks: Based on data from similar materials

2-Methyl-1-propanol:

Acute oral toxicity : LD50 (Rat, female): 3,350 mg/kg

Method: OECD Test Guideline 401



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Acute inhalation toxicity : LC50 (Rat): > 18.18 mg/l

Exposure time: 6 h Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit, female): 2,460 mg/kg

Method: OECD Test Guideline 402

Deltamethrin (ISO):

Acute oral toxicity : LD50 (Rat): 66.7 mg/kg

LD50 (Rat): 9 - 139 mg/kg

LD50 (Mouse): 19 - 34 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.8 mg/l

Exposure time: 2 h

Test atmosphere: dust/mist

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

LD50 (Rat): > 800 mg/kg

Acute toxicity (other routes of:

administration)

LD50 (Rat): 2.5 mg/kg

Application Route: Intravenous

LD50 (Mouse): 10 mg/kg

Application Route: Intraperitoneal

Skin corrosion/irritation

Causes skin irritation.

Components:

Hydrocarbons, C9, aromatics:

Assessment : Repeated exposure may cause skin dryness or cracking.

2-Methoxy-1-methylethyl acetate:

Species : Rabbit

Result : No skin irritation

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Species : Rabbit

Method : OECD Test Guideline 404

Result : Skin irritation

2-Methyl-1-propanol:

Species : Rabbit

Method : OECD Test Guideline 404

Result : Skin irritation

Deltamethrin (ISO):



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Species : Rabbit

Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Hydrocarbons, C9, aromatics:

Species : Rabbit

Result : No eye irritation

2-Methoxy-1-methylethyl acetate:

Species : Rabbit

Result : No eye irritation

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Species : Rabbit

Result : Irreversible effects on the eye Method : OECD Test Guideline 405

2-Methyl-1-propanol:

Species : Rabbit

Result : Irreversible effects on the eye
Method : OECD Test Guideline 405

Deltamethrin (ISO):

Species : Rabbit

Result : Moderate eye irritation

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Components:

Hydrocarbons, C9, aromatics:

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

Method : OECD Test Guideline 406

Result : negative

2-Methoxy-1-methylethyl acetate:

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



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Method : OECD Test Guideline 406

Result : negative

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Test Type : Magnusson-Kligman-Test

Routes of exposure : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Remarks : Based on data from similar materials

2-Methyl-1-propanol:

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

Method : OECD Test Guideline 406

Result : negative

Remarks : Based on data from similar materials

Deltamethrin (ISO):

Test Type : Maximization Test

Routes of exposure : Dermal Species : Guinea pig Result : negative

Test Type : Human repeat insult patch test (HRIPT)

Routes of exposure : Dermal Species : Humans Result : positive

Germ cell mutagenicity

Not classified based on available information.

Components:

Hydrocarbons, C9, aromatics:

Genotoxicity in vitro : 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: inhalation (vapor)

Result: negative

2-Methoxy-1-methylethyl acetate:

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

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

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



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thesis in mammalian cells (in vitro)

Result: negative

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

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

Method: Directive 67/548/EEC, Annex V, B.13/14.

Result: negative

Remarks: Based on data from similar materials

2-Methyl-1-propanol:

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: in vitro micronucleus test

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Ingestion Method: OECD Test Guideline 474

Result: negative

Deltamethrin (ISO):

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

Result: negative

Test Type: DNA Repair Test system: Escherichia coli

Result: negative

Test Type: Chromosomal aberration Test system: Chinese hamster ovary cells

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Concentration: LOAEL: 20 mg/kg

Result: positive

Genotoxicity in vivo : Test Type: Micronucleus test

Species: Mouse Application Route: Oral Result: negative

Test Type: dominant lethal test

Species: Mouse Application Route: Oral Result: negative



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Test Type: sister chromatid exchange assay

Species: Mouse

Cell type: Bone marrow Application Route: Oral

Result: negative

Carcinogenicity

Not classified based on available information.

Components:

2-Methoxy-1-methylethyl acetate:

Species

Application Route inhalation (vapor) Application Route
Exposure time

: 2 Years

Method : OECD Test Guideline 453

Result negative

Remarks Based on data from similar materials

Deltamethrin (ISO):

Mouse, male and female Species

Application Route oral (feed) Exposure time 104 weeks

NOAEL 8 mg/kg body weight LOAEL 4 mg/kg body weight

Result positive Target Organs Lymph nodes

Species Rat, male and female

Application Route oral (feed) Exposure time 2 Years Result : negative

Species Dog, male and female

Application Route : oral (feed) Exposure time : 2 Years

NOAEL 1 mg/kg body weight

Result negative

Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:

Hydrocarbons, C9, aromatics:

Effects on fertility Test Type: Three-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapor)

Result: negative

Test Type: Embryo-fetal development Effects on fetal development:

Species: Mouse

Application Route: inhalation (vapor)

Result: negative



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2-Methoxy-1-methylethyl acetate:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapor) Method: OECD Test Guideline 416

Result: negative

Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: inhalation (vapor)

Result: negative

2-Methyl-1-propanol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapor)

Method: OPPTS 870.3800

Result: negative

Effects on fetal development : Test Type: Embryo-fetal development

Species: Rat

Application Route: inhalation (vapor) Method: OECD Test Guideline 414

Result: negative

Deltamethrin (ISO):

Effects on fertility : Test Type: Three-generation reproduction toxicity study

Species: Rat

Application Route: oral (feed)

Early Embryonic Development: NOAEL: 50 mg/kg body

weight

Symptoms: No effects on fertility., Embryo-fetal toxicity. Remarks: Significant toxicity observed in testing

Test Type: Two-generation reproduction toxicity study Species: Rat

Application Route: Oral

Early Embryonic Development: LOAEL: 84 - 149 mg/kg body

weight

Symptoms: No effects on fertility., Embryo-fetal toxicity.

Test Type: Fertility Species: Rat, male Application Route: Oral

Fertility: LOAEL: 1 mg/kg body weight

Symptoms: Effects on fertility.

Target Organs: Testes

Effects on fetal development : Test Type: Development

Species: Mouse

Application Route: oral (gavage)



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Developmental Toxicity: LOAEL: 1 mg/kg body weight

Result: Skeletal malformations. Remarks: Maternal toxicity observed.

Test Type: Development Species: Rat, female

Developmental Toxicity: NOAEL: 10 mg/kg body weight

Symptoms: No effects on fetal development.

Test Type: Development Species: Rabbit, female

Application Route: oral (gavage)

Developmental Toxicity: NOAEL: 16 mg/kg body weight

Symptoms: No effects on fetal development.

Reproductive toxicity - As-

sessment

Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT-single exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

Components:

Hydrocarbons, C9, aromatics:

Assessment : May cause drowsiness or dizziness.

Assessment : May cause respiratory irritation.

2-Methoxy-1-methylethyl acetate:

Assessment : May cause drowsiness or dizziness.

2-Methyl-1-propanol:

Assessment : May cause respiratory irritation., May cause drowsiness or

dizziness.

Deltamethrin (ISO):

Assessment : May cause respiratory irritation.

STOT-repeated exposure

Causes damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swallowed.

Causes damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.

Components:

Deltamethrin (ISO):

Routes of exposure : Ingestion

Target Organs : Central nervous system, Immune system

Assessment : Causes damage to organs through prolonged or repeated

exposure.



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Routes of exposure inhalation (dust/mist/fume) Target Organs : Central nervous system

: Causes damage to organs through prolonged or repeated Assessment

exposure.

Repeated dose toxicity

Components:

Hydrocarbons, C9, aromatics:

Species Rat. female NOAEL 900 mg/m³ Application Route inhalation (vapor) Exposure time : 12 Months

: Based on data from similar materials Remarks

2-Methoxy-1-methylethyl acetate:

NOAEL >= 1,000 mg/kgApplication Route : Ingestion Exposure time : 41 - 45 Days

Method : OECD Test Guideline 422

Species
NOAEL
Application Route
Exposure time : Rat > 1 mg/l

: inhalation (vapor)

2 y

OECD Test Guideline 453 Method

Remarks Based on data from similar materials

Species NOAEL Application Route : Rabbit : > 200 mg/kg : Skin contact Exposure time : 90 Days

Remarks : Based on data from similar materials

2-Methyl-1-propanol:

Species : Rat

NOAEL : > 1,450 mg/kg Application Route : Ingestion Exposure time : 90 Days

Method **OECD Test Guideline 408**

Species : Rat NOAEL : >= 7.5 mg/lApplication Route : inhalation (vapor)

Exposure time : 17 Weeks

Deltamethrin (ISO):

Rat, male and female **Species**

NOAEL 1 mg/kg



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LOAEL : 2.5 mg/kg
Application Route : Oral
Exposure time : 13 Weeks
Target Organs : Nervous system
Symptoms : hyperexcitability

Species : Rat LOAEL : 3 mg/m3

Application Route : inhalation (dust/mist/fume)
Exposure time : 2 wk / 5 d/wk / 6 h/d

Symptoms : Local irritation, respiratory tract irritation

Species: DogNOAEL: 0.1 mg/kgLOAEL: 1 mg/kgApplication Route: OralExposure time: 13 WeeksTarget Organs: Nervous system

Symptoms : Dilatation of the pupil, Vomiting, Tremors, Diarrhea, Salivation

Species : Rat

NOAEL : 14 mg/kg

LOAEL : 54 mg/kg

Application Route : Oral

Exposure time : 91 d

Target Organs : Nervous system

Species : Mouse
LOAEL : 6 mg/kg
Application Route : Oral
Exposure time : 12 Weeks
Target Organs : Immune system
Symptoms : immune system effects

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

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.

Components:

Hydrocarbons, C9, aromatics:

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.

2-Methyl-1-propanol:

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



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Experience with human exposure

Components:

Deltamethrin (ISO):

Inhalation : Symptoms: respiratory tract irritation, Dizziness, Sweating,

Headache, Nausea, Vomiting, anorexia, Fatigue, tingling,

Palpitation, Blurred vision, muscle twitching

Skin contact : Symptoms: Skin irritation, Erythema, pruritis, Headache, Nau-

sea, Vomiting, Dizziness, tingling, Sweating, muscle twitching,

Blurred vision, Fatigue, anorexia, Allergic reactions

Ingestion : Symptoms: muscle pain, Small pupils

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Hydrocarbons, C9, aromatics:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 9.2 mg/l

Exposure time: 96 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 203

Toxicity to daphnia and other:

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 3.2 mg/l

Exposure time: 48 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EL50 (Pseudokirchneriella subcapitata (green algae)): 7.9

mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (green algae)): 0.22

mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50: > 99 mg/l

Exposure time: 10 min

2-Methoxy-1-methylethyl acetate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 - 180

mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

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.



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Toxicity to algae/aquatic ErC50 (Raphidocelis subcapitata (freshwater green alga)): >

plants 1,000 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

NOEC (Raphidocelis subcapitata (freshwater green alga)): >=

1,000 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

Toxicity to daphnia and other:

aquatic invertebrates (Chronic toxicity)

Exposure time: 21 d Method: OECD Test Guideline 211

NOEC (Daphnia magna (Water flea)): >= 100 mg/l

Toxicity to microorganisms EC10 (activated sludge): > 1,000 mg/l

Exposure time: 30 min

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

LC50 : > 1 - < 10 mg/lToxicity to fish

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 10 -

100 mg/l

Exposure time: 96 h

Remarks: Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): > 0.1 -

Exposure time: 96 h

Remarks: Based on data from similar materials

Toxicity to fish (Chronic tox-

icity)

ic toxicity)

NOEC (Oncorhynchus mykiss (rainbow trout)): > 0.1 - 1 mg/l

Exposure time: 72 d

Remarks: Based on data from similar materials

Toxicity to daphnia and other : aquatic invertebrates (Chron-

NOEC (Daphnia magna (Water flea)): > 1 mg/l

Exposure time: 21 d

Remarks: Based on data from similar materials

2-Methyl-1-propanol:

LC50 (Pimephales promelas (fathead minnow)): 1,430 mg/l Toxicity to fish

Exposure time: 96 h

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia pulex (Water flea)): 1,100 mg/l

Exposure time: 48 h



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Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1,799

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 117

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

plants

NOEC (Daphnia magna (Water flea)): 20 mg/l

Exposure time: 21 d

Toxicity to microorganisms : EC50: > 1,000 mg/l

Exposure time: 16 h

Deltamethrin (ISO):

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 0.00048

mg/l

Exposure time: 96 h

LC50 (Oncorhynchus mykiss (rainbow trout)): 0.00039 mg/l

Exposure time: 96 h

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Mysidopsis bahia (opossum shrimp)): 0.0037 µg/l

Exposure time: 48 h

EC50 (Daphnia magna (Water flea)): 0.0035 mg/l

Exposure time: 48 h

LC50 (Gammarus fasciatus (freshwater shrimp)): 0.0003 µg/l

Exposure time: 96 h

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): > 9.1

mq/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: No toxicity at the limit of solubility.

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): 0.000022

mg/l

Exposure time: 36 d

NOEC (Pimephales promelas (fathead minnow)): 0.000017

mg/l

Exposure time: 260 d

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 0.0041 µg/l

Exposure time: 21 d



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Persistence and degradability

Components:

Hydrocarbons, C9, aromatics:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 78 % Exposure time: 28 d

Method: OECD Test Guideline 301F

2-Methoxy-1-methylethyl acetate:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 83 % Exposure time: 28 d

Method: OECD Test Guideline 301F

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 100 % Exposure time: 28 d

Method: OECD Test Guideline 301B

2-Methyl-1-propanol:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 74 % Exposure time: 28 d

Method: OECD Test Guideline 301D

Deltamethrin (ISO):

Stability in water : Hydrolysis: 0 %(30 d)

Bioaccumulative potential

Components:

Hydrocarbons, C9, aromatics:

Partition coefficient: n- : log Pow: 3.7 - 4.5

octanol/water

2-Methoxy-1-methylethyl acetate:

Partition coefficient: n- : log Pow: 1.2

octanol/water

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Partition coefficient: n- : log Pow: 2.89

octanol/water

2-Methyl-1-propanol:

Partition coefficient: n- : log Pow: 1

octanol/water Method: OECD Test Guideline 117

Deltamethrin (ISO):



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Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)

Bioconcentration factor (BCF): 1,800

Partition coefficient: n-

octanol/water

: log Pow: 4.6

Mobility in soil

Components:

Deltamethrin (ISO):

Distribution among environ-

mental compartments

: log Koc: 7.2

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.

Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste

handling site for recycling or disposal.

Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other

sources of ignition. They may explode and cause injury and/or

death.

If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 1993

Proper shipping name : FLAMMABLE LIQUID, N.O.S.

(Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl ace-

tate)

Class : 3
Packing group : III
Labels : 3
Environmentally hazardous : no

IATA-DGR

UN/ID No. : UN 1993

Proper shipping name : Flammable liquid, n.o.s.

(Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl

acetate)

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Class : 3 Packing group : III

Labels : Flammable Liquids

Packing instruction (cargo :

aircraft)

Packing instruction (passen: 355

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ger aircraft)

IMDG-Code

UN number : UN 1993

Proper shipping name : FLAMMABLE LIQUID, N.O.S.

(Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl ace-

tate, Deltamethrin (ISO))

Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : yes

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

Not applicable for product as supplied.

Domestic regulation

NOM-002-SCT

UN number : UN 1993

Proper shipping name : FLAMMABLE LIQUID, N.O.S.

(Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl ace-

tate)

Class : 3 Packing group : III Labels : 3

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

Federal Law for the control of chemical precursors,

essential chemical products and machinery for

Not applicable

producing capsules, tablets and pills.

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

AICS : not determined

DSL : not determined

IECSC : not determined

SECTION 16. OTHER INFORMATION

Revision Date : 06.07.2024 Date format : dd.mm.yyyy

Full text of other abbreviations



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ACGIH : USA. ACGIH Threshold Limit Values (TLV)

NOM-010-STPS-2014 : Mexico. Norm NOM-010-STPS-2014 on Chemicals Polluting

the Work Environment - Identification, Assessment and Con-

trol - Appendix 1 Occupational Exposure Limits

ACGIH / TWA : 8-hour, time-weighted average NOM-010-STPS-2014 / VLE- : Time weighted average limit value

PPT

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; 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

Sources of key data used to compile the Material Safety Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, 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.

The information is considered as correct, but not exhaustive, and will be used only as a guide, which is based in the current knowledge of the substance or mixture, and is applicable to proper safety precautions for the product.

MX / Z8