Deltamethrin (5%) Formulation

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8.1	28.09.2024	2334772-00023	Date of first issue: 12.12.2017

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Deltamethrin (5%) Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Veterinary product

Recommended restrictions on use : Not applicable

1.3 Details of the supplier of the safety data sheet

Company : MSD
Kilsheelan
Clonmel Tipperary, IE

Telephone : 353-51-601000

E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number

+1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity - single exposure, Category 3	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - single exposure, Category 3	H335: May cause respiratory irritation.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Short-term (acute) aquatic hazard, Cate-	H400: Very toxic to aquatic life.

gory 1	
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
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.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
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/ doctor.
P391 Collect spillage.

Hazardous components which must be listed on the label:

Hydrocarbons, C9, aromatics
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts
2-Methyl-1-propanol
deltamethrin (ISO)

2.3 Other hazards

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

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).
Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Hydrocarbons, C9, aromatics	Not Assigned	Flam. Liq. 3; H226 STOT SE 3; H336 STOT SE 3; H335 Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066	>= 30 - < 50
2-Methoxy-1-methylethyl acetate	108-65-6 203-603-9 607-195-00-7	Flam. Liq. 3; H226 STOT SE 3; H336	>= 20 - < 30
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts	Not Assigned 271-529-4	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 3 - < 10
2-Methyl-1-propanol	78-83-1 201-148-0 603-108-00-1	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 STOT SE 3; H336	>= 3 - < 10
deltamethrin (ISO)	52918-63-5 258-256-6 607-319-00-X	Acute Tox. 3; H301 Acute Tox. 3; H331 Eye Irrit. 2; H319 Skin Sens. 1A; H317	>= 3 - < 10

		Repr. 2; H361fd STOT SE 3; H335 STOT RE 1; H372 (Central nervous system, Immune system) STOT RE 1; H372 (Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1.000.000 M-Factor (Chronic aquatic toxicity): 1.000.000	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

If inhaled : If inhaled, remove to fresh air.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately.

If swallowed : If swallowed, DO NOT induce vomiting.

If vomiting occurs have person lean forward.
Call a physician or poison control centre immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed.
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.
May cause damage to organs through prolonged or repeated exposure.

This product contains a pyrethroid.
Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.
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
Nitrogen oxides (NOx)
Bromine compounds
Sulphur oxides
Metal oxides

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

6.2 Environmental precautions

Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	If sufficient ventilation is unavailable, use with local exhaust ventilation. 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. Already sensitised individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitisers. 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. 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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.
Advice on common storage	:	Do not store with the following product types: 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

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Hydrocarbons, C9, aromatics	Not Assigned	TWA	25 ppm 120 mg/m3	FOR-2011-12-06-1358
2-Methoxy-1-methylethyl acetate	108-65-6	TWA	50 ppm 270 mg/m3	FOR-2011-12-06-1358
	Further information: Chemicals that can be absorbed through the skin.			
		STEL	100 ppm 550 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		TWA	50 ppm 275 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
2-Methyl-1-propanol	78-83-1	T	25 ppm 75 mg/m3	FOR-2011-12-06-1358
	Further information: Chemicals that can be absorbed through the skin.			
deltamethrin (ISO)	52918-63-5	TWA	15 µg/m3 (OEB 3)	Internal
	Further information: DSEN, Skin			
		Wipe limit	100 µg/100 cm²	Internal

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
2-Methyl-1-propanol	Workers	Inhalation	Long-term local effects	310 mg/m3
	Consumers	Inhalation	Long-term local effects	55 mg/m3
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts	Workers	Skin contact	Long-term systemic effects	1,7 mg/kg bw/day

	Consumers	Skin contact	Long-term systemic effects	85 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	89 mg/kg bw/day
2-Methoxy-1-methylethyl acetate	Workers	Inhalation	Long-term systemic effects	275 mg/m3
	Workers	Inhalation	Acute local effects	550 mg/m3
	Workers	Skin contact	Long-term systemic effects	796 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	33 mg/m3
	Consumers	Inhalation	Long-term local effects	33 mg/m3
	Consumers	Skin contact	Long-term systemic effects	320 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	36 mg/kg bw/day
	Consumers	Ingestion	Acute local effects	500 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts	Fresh water	0,023 mg/l
	Marine water	0,002 mg/l
	Sewage treatment plant	3 mg/l
	Fresh water sediment	0,174 mg/kg dry weight (d.w.)
	Marine sediment	0,017 mg/kg dry weight (d.w.)
	Soil	0,62 mg/kg dry weight (d.w.)
2-Methoxy-1-methylethyl acetate	Fresh water	0,635 mg/l
	Freshwater - intermittent	6,35 mg/l
	Marine water	0,0635 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	3,29 mg/kg dry weight (d.w.)
	Marine sediment	0,329 mg/kg dry weight (d.w.)
	Soil	0,29 mg/kg dry weight (d.w.)

8.2 Exposure controls

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

Eye/face 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.
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.
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.
Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Equipment should conform to NS EN 14387
Filter type	:	Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	yellow
Odour	:	No data available
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	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

flammability limit

Flash point	:	45 - 51 °C
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	3 - 5
Viscosity		
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Density	:	0,963 - 0,967 g/cm³
Relative vapour density	:	No data available
Particle characteristics		
Particle size	:	Not applicable

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Evaporation rate	:	No data available
Molecular weight	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Flammable liquid and vapour.

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

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate: 1.334 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

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: vapour
Assessment: The substance or mixture has no acute inhalation 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: vapour
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
Acute inhalation toxicity	:	LC50 (Rat): > 18,18 mg/l Exposure time: 6 h Test atmosphere: vapour
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):

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

2-Methyl-1-propanol:

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

deltamethrin (ISO):

Species : Rabbit
Result : Moderate eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:

Hydrocarbons, C9, aromatics:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative

2-Methoxy-1-methylethyl acetate:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative

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

Test Type : Magnusson-Kligman-Test
Exposure routes : 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
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative
Remarks : Based on data from similar materials

deltamethrin (ISO):

Test Type : Maximisation Test
Exposure routes : Dermal
Species : Guinea pig
Result : negative

Test Type : Human repeat insult patch test (HRIPT)
Exposure routes : 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 (vapour)
Result: negative

Germ cell mutagenicity- Assessment : Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

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 synthesis 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, 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

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:

Hydrocarbons, C9, aromatics:

Carcinogenicity - Assessment : Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

2-Methoxy-1-methylethyl acetate:

Species : Rat
Application Route : inhalation (vapour)
Exposure time : 2 Years

Method	:	OECD Test Guideline 453
Result	:	negative
Remarks	:	Based on data from similar materials

deltamethrin (ISO):

Species	:	Mouse, male and female
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 (vapour) Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Mouse Application Route: inhalation (vapour) Result: negative

2-Methoxy-1-methylethyl acetate:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Method: OECD Test Guideline 416 Result: negative Remarks: Based on data from similar materials
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour)

Result: negative

2-Methyl-1-propanol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapour)
Method: OPPTS 870.3800
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: inhalation (vapour)
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-foetal 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-foetal 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 foetal development : Test Type: Development
Species: Mouse
Application Route: oral (gavage)
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 foetal development

Test Type: Development
Species: Rabbit, female

Application Route: oral (gavage)
Developmental Toxicity: NOAEL: 16 mg/kg body weight
Symptoms: No effects on foetal development

Reproductive toxicity - Assessment : 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

May cause damage to organs through prolonged or repeated exposure.

Components:

deltamethrin (ISO):

Exposure routes : Ingestion
Target Organs : Central nervous system, Immune system
Assessment : Causes damage to organs through prolonged or repeated exposure.

Exposure routes : inhalation (dust/mist/fume)
Target Organs : Central nervous system
Assessment : Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Hydrocarbons, C9, aromatics:

Species : Rat, female

NOAEL	:	900 mg/m3
Application Route	:	inhalation (vapour)
Exposure time	:	12 Months
Remarks	:	Based on data from similar materials

2-Methoxy-1-methylethyl acetate:

Species	:	Rat
NOAEL	:	>= 1.000 mg/kg
Application Route	:	Ingestion
Exposure time	:	41 - 45 Days
Method	:	OECD Test Guideline 422

Species	:	Rat
NOAEL	:	> 1 mg/l
Application Route	:	inhalation (vapour)
Exposure time	:	2 yr
Method	:	OECD Test Guideline 453
Remarks	:	Based on data from similar materials

Species	:	Rabbit
NOAEL	:	> 200 mg/kg
Application Route	:	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/l
Application Route	:	inhalation (vapour)
Exposure time	:	17 Weeks

deltamethrin (ISO):

Species	:	Rat, male and female
NOAEL	:	1 mg/kg
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	:	Dog
NOAEL	:	0,1 mg/kg
LOAEL	:	1 mg/kg
Application Route	:	Oral
Exposure time	:	13 Weeks
Target Organs	:	Nervous system
Symptoms	:	Dilatation of the pupil, Vomiting, Tremors, Diarrhoea, 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.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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, Nausea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions
Ingestion	:	Symptoms: muscle pain, Small pupils

SECTION 12: Ecological information

12.1 Toxicity

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.
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): > 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 microorganisms	:	EC10 (activated sludge): > 1.000 mg/l Exposure time: 30 min
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: >= 100 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

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

Toxicity to fish	:	LC50 : > 1 - < 10 mg/l 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 - 1 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	:	NOEC: > 0,1 - 1 mg/l Exposure time: 72 d Species: Oncorhynchus mykiss (rainbow trout) Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 1 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Remarks: Based on data from similar materials

2-Methyl-1-propanol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 1.430 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia pulex (Water flea)): 1.100 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	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 microorganisms	:	EC50 : > 1.000 mg/l Exposure time: 16 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 20 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

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 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility
M-Factor (Acute aquatic toxicity)	:	1.000.000
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,000022 mg/l Exposure time: 36 d

Species: Pimephales promelas (fathead minnow)

NOEC: 0,000017 mg/l
Exposure time: 260 d
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0041 µg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1.000.000

12.2 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)

12.3 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-octanol/water : log Pow: 1,2

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

Partition coefficient: n-octanol/water : log Pow: 2,89

2-Methyl-1-propanol:

Partition coefficient: n-octanol/water : log Pow: 1
Method: OECD Test Guideline 117

deltamethrin (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1.800

Partition coefficient: n-octanol/water : log Pow: 4,6

12.4 Mobility in soil

Components:

deltamethrin (ISO):

Distribution among environmental compartments : log Koc: 7,2

12.5 Results of PBT and vPvB assessment

Product:

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

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. Do not dispose of waste into sewer.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	UN 1993
ADR	:	UN 1993
RID	:	UN 1993
IMDG	:	UN 1993
IATA	:	UN 1993

14.2 UN proper shipping name

ADN	:	FLAMMABLE LIQUID, N.O.S. (Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl acetate)
ADR	:	FLAMMABLE LIQUID, N.O.S. (Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl acetate)
RID	:	FLAMMABLE LIQUID, N.O.S. (Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl acetate)
IMDG	:	FLAMMABLE LIQUID, N.O.S. (Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl acetate, deltamethrin (ISO))
IATA	:	Flammable liquid, n.o.s. (Hydrocarbons, C9, aromatics, 2-Methoxy-1-methylethyl acetate)

14.3 Transport hazard class(es)

Class	Subsidiary risks

ADN : 3

ADR : 3

RID : 3

IMDG : 3

IATA : 3

14.4 Packing group

ADN

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

ADR

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

RID

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

IMDG

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

IATA (Cargo)

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

IATA (Passenger)

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

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG
Marine pollutant : yes

14.6 Special precautions for user

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

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 3

Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

Substance(s) or mixture(s) are listed here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or not.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
P5c	FLAMMABLE LIQUIDS	5.000 t	50.000 t

E1	ENVIRONMENTAL HAZARDS	100 t	200 t
34	Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2.500 t	25.000 t

Other regulations:

Note the Working Environment Act § 4-1 and § 4-2 on requirements for the employer to protect pregnant employees against discomfort and injury as a result of the work situation and the working environment.
Note the regulation on organization, leadership and participation, chapter 12 on the work of children and young people.

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

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

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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

Full text of H-Statements

H226	:	Flammable liquid and vapour.
H301	:	Toxic if swallowed.
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.
H319	:	Causes serious eye irritation.
H331	:	Toxic if inhaled.
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 through prolonged or repeated exposure if inhaled.
H372	:	Causes damage to organs through prolonged or repeated exposure if swallowed.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.
EUH066	:	Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Repr.	:	Reproductive toxicity
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
FOR-2011-12-06-1358	:	Norway. Occupational Exposure limits
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
FOR-2011-12-06-1358 / TWA	:	Long term exposure limit
FOR-2011-12-06-1358 / T	:	Ceiling

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified;

NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

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

Classification of the mixture:		**Classification procedure:**
Flam. Liq. 3	H226	Based on product data or assessment
Acute Tox. 4	H302	Calculation method
Skin Irrit. 2	H315	Calculation method
Eye Dam. 1	H318	Calculation method
Skin Sens. 1	H317	Calculation method
Repr. 2	H361fd	Calculation method
STOT SE 3	H336	Calculation method
STOT SE 3	H335	Calculation method
STOT RE 2	H373	Calculation method
Asp. Tox. 1	H304	Based on product data or assessment
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

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

NO / EN