

Permethrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06.04.2024
4.0	28.09.2024	10831038-00005	Date of first issue: 15.08.2022

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

1.1	Product identifier Trade name	:	Permethrin Liquid Formulation
1.2	Relevant identified uses of th	ne s	ubstance or mixture and uses advised against
	Use of the Sub- stance/Mixture	:	Veterinary product
	Recommended restrictions on use	:	Not applicable
1.3	Details of the supplier of the	saf	ety 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 Acute toxicity, Category 4	H226: Flammable liquid and vapour. H302: Harmful if swallowed.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Germ cell mutagenicity, Category 1B	H340: May cause genetic defects.
Carcinogenicity, Category 1B	H350: May cause cancer.
Specific target organ toxicity - single exposure, Category 3	H336: May cause drowsiness or dizziness.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Short-term (acute) aquatic hazard, Cate- gory 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Cat- egory 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Hazar	rd pictograms		
Signa	l word	: Danger	• • •
Hazar	rd statements	H302 Harmful H304 May be H317 May cau H336 May cau H340 May cau H350 May cau	ble liquid and vapour. if swallowed. fatal if swallowed and enters airways. use an allergic skin reaction. use drowsiness or dizziness. use genetic defects. use cancer. ic to aquatic life with long lasting effects.
Preca	utionary statements	Prevention:	
		P210 Keep av flames and othe P273 Avoid re	pecial instructions before use. /ay from heat, hot surfaces, sparks, open r ignition sources. No smoking. lease to the environment. otective gloves/ protective clothing/ eye protec- tion.
		Response: P301 + P310 CENTER/ docto P391 Collect s	
	rdous components whi ethrin (ISO)		

Permethrin (ISO) Hydrocarbons, C10, aromatics, <1% naphthalene Solvent naphtha (petroleum), light aromatic Restricted to professional users.

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.



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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Permethrin (ISO)	52645-53-1 258-067-9 613-058-00-2	Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10.000 M-Factor (Chronic aquatic toxicity): 10.000 Acute toxicity esti- mate Acute oral toxicity: 500 mg/kg Acute inhalation toxicity (dust/mist): 2,3 mg/l	>= 25 - < 30
Hydrocarbons, C10, aromatics, <1% naphthalene	64742-94-5	STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066	>= 10 - < 20
Solvent naphtha (petroleum), light aromatic	64742-95-6 265-199-0 649-356-00-4	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Muta. 1B; H340 Carc. 1B; H350 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 2,5 - < 10

For explanation of abbreviations see section 16.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

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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 ad- vice 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. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.		
In case of eye contact	:	Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.		
If swallowed	:	If swallowed, DO NOT induce vomiting. 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 a	nd e	effects, both acute and delayed		
Risks	:	Harmful if swallowed. May be fatal if swallowed and enters airways. May cause an allergic skin reaction. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. This product contains a pyrethroid.		
		Durothroid poisoning should not be confused with corbometer		

or organophosphate poisoning.

Pyrethroid poisoning should not be confused with carbamate

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



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				Alcohol-resistant Carbon dioxide (C Dry chemical	
	Jnsuita nedia	ble extinguishing	:	High volume wate	er jet
5.2 Sj	pecial	hazards arising from	the	substance or mi	xture
	Specific hazards during fire- fighting		:	fire. Flash back possib Vapours may form	d water stream as it may scatter and spread ble over considerable distance. In explosive mixtures with air. Dustion products may be a hazard to health.
	Hazardo ucts	ous combustion prod-	:	Chlorine compour Carbon oxides	nds
5.3 A	dvice f	or firefighters			
	Special or firefi	protective equipment ghters	:		e, wear self-contained breathing apparatus. tective equipment.
	Specific ods	extinguishing meth-	:	cumstances and t Use water spray t	measures that are appropriate to local cir- he surrounding environment. o cool unopened containers. ged containers from fire area if it is safe to do

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 pro- tective 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

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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		ment to keep m be pumped, sto Clean up remai bent. Local or nationa posal of this ma employed in the mine which reg Sections 13 and	provide dyking or other appropriate contain- aterial from spreading. If dyked material can re recovered material in appropriate container. ning materials from spill with suitable absor- al regulations may apply to releases and dis- aterial, as well as those materials and items a cleanup of releases. You will need to deter- ulations are applicable. d 15 of this SDS provide information regarding 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 equip-
Advice on safe handling	:	ment. Do not get on skin or clothing.
		Avoid breathing mist or vapours. Do not swallow.
		Avoid contact with eyes.
		Wash skin thoroughly after handling.
		Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-
		sessment
		Non-sparking tools should be used.
		Keep container tightly closed.
		Keep away from heat, hot surfaces, sparks, open flames and
		other ignition sources. No smoking.
		Take precautionary measures against static discharges.
		Do not eat, drink or smoke when using this product.
		Take care to prevent spills, waste and minimize release to the environment.
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.

Commission Regulation (EU) 2020/878



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7.2 Condi Requ areas		 10831038-00005 Date of first issue: 15.08.2022 ncluding any incompatibilities Keep in properly labelled containers. Store locked up tightly closed. Keep in a cool, well-ventilated place. S accordance with the particular national regulations. Keep in a cool, well-ventilated place. S accordance with the following product types: Strong oxidizing agents Self-reactive substances and mixtures Organic peroxides Flammable solids Pyrophoric liquids 	
		Self-heating substances and n Substances and mixtures, whi flammable gases Explosives Gases Very acutely toxic substances	ch in contact with water, emit

7.3 Specific end use(s)

: No data available

SECTION 8: Exposure controls/personal protection

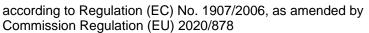
8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
White mineral oil (petroleum)	8042-47-5	TWA (Vapour)	50 mg/m3	FOR-2011- 12-06-1358
		TWA (Mist and particles)	1 mg/m3	FOR-2011- 12-06-1358
Permethrin (ISO)	52645-53-1	TWA	80 µg/m3 (OEB 3)	Internal
		Wipe limit	800 µg/100 cm²	Internal
Hydrocarbons, C10, aromatics, <1% naphthalene	64742-94-5	TWA	25 ppm 120 mg/m3	FOR-2011- 12-06-1358
Solvent naphtha (petroleum), light aromatic	64742-95-6	TWA	25 ppm 120 mg/m3	FOR-2011- 12-06-1358

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

Substance name	End Use	Exposure routes	Potential health ef-	Value
			fects	
Hydrocarbons, C10, aromatics, <1% naph- thalene	Workers	Inhalation	Long-term systemic effects	151 mg/m3





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		Workers	Skin cont	act	Long-term systemic effects	12,5 mg/kg bw/day
		Consumers	Inhalatior	า	Long-term systemic effects	32 mg/m3
		Consumers	Skin cont	act	Long-term systemic effects	7,5 mg/kg bw/day
		Consumers	Ingestion		Long-term systemic effects	7,5 mg/kg bw/day

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 flam- mable, 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
Respiratory protection	:	contaminated clothing. If adequate local exhaust ventilation is not available or expo- sure assessment demonstrates exposures outside the rec-
		ommended 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

amber

:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Od	our	:	aromatic	
Od	our Threshold	:	No data available	
Me	Iting point/freezing point	:	No data available)
Init ran	ial boiling point and boiling ge	:	No data available	
Fla	mmability (solid, gas)	:	Not applicable	
Fla	mmability (liquids)	:	Ignitable (see flas	sh point)
	per explosion limit / Upper nmability limit	:	No data available	
	wer explosion limit / Lower nmability limit	:	No data available	
Fla	sh point	:	46 °C	
Aut	to-ignition temperature	:	No data available)
De	composition temperature	:	No data available)
pН		:	No data available)
	cosity Viscosity, kinematic	:	No data available)
	ubility(ies) Water solubility	:	No data available	
	rtition coefficient: n- anol/water	:	Not applicable	
Va	pour pressure	:	No data available)
Re	lative density	:	No data available)
De	nsity	:	No data available)
Re	lative vapour density	:	No data available	9
	rticle characteristics Particle size	:	Not applicable	

9.2 Other information



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Explo	sives	: Not explosi	ve
Oxidiz	zing properties	: The substa	nce or mixture is not classified as oxidizing.
Evapo	pration rate	: No data ava	ailable
Molec	cular weight	: No data av	ailable

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
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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: 1.965 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method

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<u>Comp</u>	oonents:		
Perm	ethrin (ISO):		
	oral toxicity	: LD50 (Rat):	480 - 554 mg/kg
Acute	inhalation toxicity	: LC50 (Rat): Exposure tir Test atmosp	
Acute	dermal toxicity	: LD50 (Rabb	it): > 2.000 mg/kg
Hydro	ocarbons, C10, arom	atics, <1% naphth	alene:
Acute	oral toxicity	Method: OE	> 5.000 mg/kg CD Test Guideline 420 ased on data from similar materials
Acute	inhalation toxicity	Exposure tir Test atmosp Method: OE	> 4,778 mg/l ne: 4 h ohere: dust/mist CD Test Guideline 403 ased on data from similar materials
Acute	dermal toxicity	Method: OE Assessmen toxicity	it): > 2.000 mg/kg CD Test Guideline 402 t: The substance or mixture has no acute dermal ased on data from similar materials
II Solve	ent naphtha (petroleu	um), light aromatic	:
	oral toxicity		> 5.000 mg/kg
Acute	inhalation toxicity	Exposure tir	
Acute	dermal toxicity	: LD50 (Rabb	it): > 2.000 mg/kg
-	corrosion/irritation assified based on ava	ailable information.	
Comp	oonents:		
Perm	ethrin (ISO):		
Speci Resul	es	: Rabbit : No skin irrita	ation
Hydro	ocarbons, C10, arom	atics, <1% naphth	alene:
Asses		· · · · ·	xposure may cause skin dryness or cracking.

Solvent naphtha (petroleum), light aromatic:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Speci Metho Resu	bd	: Rabbit : OECD Test Gu : Skin irritation	iideline 404
	us eye damage/eye		
	lassified based on ava ponents:	ailable information.	
	ethrin (ISO):		
Speci Resu	ies	: Rabbit : No eye irritatio	n
Hydro	ocarbons, C10, arom	atics, <1% naphthale	ene:
Spec		: Rabbit	
Resu Rema		: No eye irritatio	n from similar materials
		. Dubba on data	
Solve	ent naphtha (petrole	um), light aromatic:	
Speci		: Rabbit	
Metho Resu		: OECD Test Gu : No eye irritatio	
Skin May o Resp	iratory or skin sensi sensitisation cause an allergic skin iratory sensitisation lassified based on ava	reaction.	
Com	ponents:		
Perm	ethrin (ISO):		
Test	Туре	: Buehler Test	
Expo: Speci	sure routes	: Skin contact : Guinea pig	
Resu		: positive	
Asses	ssment	: Probability or e	vidence of skin sensitisation in humans
Hydro	ocarbons, C10, arom	atics, <1% naphthale	ene:
Test		: Maximisation T	est
Expo	sure routes	: Skin contact	
Speci Resu		: Guinea pig : negative	
Rema			from similar materials
	ent naphtha (petrolei		
Test	Туре	: Buehler Test	

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Expo Spec Resu		:	Skin contact Guinea pig negative	
May	cell mutagenicity cause genetic defects.			
	ponents:			
	ethrin (ISO): toxicity in vitro	:	Test Type: Bacte Result: negative	rial reverse mutation assay (AMES)
			Test Type: In vitro Result: negative	o mammalian cell gene mutation test
			Test Type: Chron Result: negative	nosome aberration test in vitro
			Test Type: DNA o thesis in mamma Result: negative	damage and repair, unscheduled DNA syn- lian cells (in vitro)
			Test Type: Chron Result: positive	nosome aberration test in vitro
Genc	toxicity in vivo	:	Test Type: Mamn cytogenetic assay Species: Mouse Result: negative	nalian erythrocyte micronucleus test (in vivo /)
				jenicity (in vivo mammalian bone-marrow chromosomal analysis)
			Test Type: Roder Species: Mouse Result: negative	nt dominant lethal test (germ cell) (in vivo)
			cytogenetic assay Species: Rat	nalian erythrocyte micronucleus test (in vivo /) e: Intraperitoneal injection
				jenicity (in vivo mammalian bone-marrow chromosomal analysis) e: Ingestion
Germ	cell mutagenicity- As-	:	Weight of evidend	ce does not support classification as a germ



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sessi	ment		cell mutagen.	
Hydr	ocarbons, C10, aromat	tics,	<1% naphthalene	
Geno	otoxicity in vitro	:	malian cells Result: negative	o sister chromatid exchange assay in mam- on data from similar materials
	otoxicity in vivo	:	cytogenetic test, of Species: Rat Application Route Result: negative Remarks: Based	enicity (in vivo mammalian bone-marrow chromosomal analysis) e: inhalation (vapour) on data from similar materials
Solv	ent naphtha (petroleun	n), li	ght aromatic:	
Geno	otoxicity in vitro	:	Test Type: Bacter Result: negative	rial reverse mutation assay (AMES)
			Test Type: In vitro Result: positive	o mammalian cell gene mutation test
Geno	otoxicity in vivo	:	gonia Species: Mouse	chromatid exchange analysis in spermato- :: Intraperitoneal injection
Germ sessi	n cell mutagenicity- As- ment	:	Positive result(s) tests in mammals	from in vivo heritable germ cell mutagenicity
Carc	inogenicity			
	cause cancer.			
,	ponents:			
Perm	nethrin (ISO):			
Spec		:	Rat	
Resu		:	negative	
Spec Resu		:	Mouse negative	
Solv	ent naphtha (petroleun	n), li	ght aromatic:	
Spec		:	Mouse	
Appli	cation Route	:	Skin contact	
Expo Resu	sure time Ilt	:	2 Years positive	
Carci	inogenicity - Assess-	:	Sufficient evidence	e of carcinogenicity in animal experiments



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ment

Reproductive toxicity

Not classified based on available information.

Components:

Permethrin (ISO):

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on foetal develop- ment	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: Ingestion Result: negative

Hydrocarbons, C10, aromatics, <1% naphthalene:

Effects on fertility	:	Test Type: Three-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative Remarks: Based on data from similar materials
Effects on foetal develop- ment	:	Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: negative Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light aromatic:

Effects on fertility	:	Test Type: Reproduction/Developmental toxicity screening test Species: Rat Application Route: inhalation (vapour) Result: negative
Effects on foetal develop- ment	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour) Result: negative

STOT - single exposure

May cause drowsiness or dizziness.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Assessment Remarks	:	May cause drowsiness or dizziness. Based on data from similar materials
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Solvent naphtha (petroleum), light aromatic:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

Permethrin (ISO):

Species NOAEL Application Route	: Rat	
NOAEL	: 0,22	01 mg/l
Application Route	: Inha	lation
Exposure time	: 90 D	ays

Species	:	Rat
NOAEL	:	175 mg/kg
Application Route	:	Ingestion
Species NOAEL Application Route Exposure time	:	90 Days

Hydrocarbons, C10, aromatics, <1% naphthalene:

Species NOAEL Application Route Exposure time Remarks	: Rat
NOAEL	: 300 mg/kg
Application Route	: Ingestion
Exposure time	: 13 Weeks
Remarks	: Based on data from similar materials

Solvent naphtha (petroleum), light aromatic:

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

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

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.

Solvent naphtha (petroleum), light aromatic:

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



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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.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Permethrin	(ISO):
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Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,00079 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,0001 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1,13 mg/l Exposure time: 72 h
		EC10 (Pseudokirchneriella subcapitata (green algae)): 0,0023 mg/l Exposure time: 72 h
M-Factor (Acute aquatic tox- icity)	:	10.000
Toxicity to microorganisms	:	EC50 : > 1.000 mg/l Exposure time: 3 h
Toxicity to fish (Chronic tox- icity)	:	NOEC: 0,00041 mg/l Exposure time: 35 d Species: Danio rerio (zebra fish) Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chron- ic toxicity)	:	NOEC: 0,0047 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	10.000

Hydrocarbons, C10, aromatics, <1% naphthalene:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Toxici	ty to fish	:	Exposure time: 96 Test substance: V Method: OECD T	hus mykiss (rainbow trout)): 2 - 5 mg/l 5 h Vater Accommodated Fraction est Guideline 203 on data from similar materials
	ty to daphnia and other ic invertebrates	:	Exposure time: 44 Test substance: V Method: OECD T	agna (Water flea)): 3 - 10 mg/l 3 h Vater Accommodated Fraction est Guideline 202 on data from similar materials
Toxici plants	ty to algae/aquatic	:	mg/l Exposure time: 72 Test substance: V Method: OECD T	Vater Accommodated Fraction
Solve	nt naphtha (petroleum). li	ght aromatic:	
	ty to fish		LC50 (Pimephale Exposure time: 9	s promelas (fathead minnow)): 8,2 mg/l 5 h Vater Accommodated Fraction
	ty to daphnia and other ic invertebrates	:	Exposure time: 48 Test substance: V	agna (Water flea)): 4,5 mg/l 3 h Vater Accommodated Fraction est Guideline 202
Toxici plants	ty to algae/aquatic	:	Exposure time: 9	Vater Accommodated Fraction
			mg/l Exposure time: 90 Test substance: \	kirchneriella subcapitata (microalgae)): 0,5 5 h Vater Accommodated Fraction est Guideline 201
	ty to daphnia and other ic invertebrates (Chron- city)	:	Test substance: \	1 d magna (Water flea) Vater Accommodated Fraction est Guideline 211
12.2 Persi	stence and degradabil	itv		
		,		

Components:

Permethrin (ISO):

Biodegradability

: Result: Not readily biodegradable.



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			Method: OECD	Test Guideline 301F
	ocarbons, C10, arom	atics,	<1% naphthalen	le:
	egradability	:	Result: Not read Biodegradation: Exposure time: 2	ily biodegradable. 49,56 %
Solve	ent naphtha (petroleu	m), li	ght aromatic:	
Biode	egradability	:	Result: Inherentl Biodegradation: Exposure time: 2	
12.3 Bioa	ccumulative potentia	I		
Com	ponents:			
Perm	nethrin (ISO):			
Bioad	ccumulation	:		is macrochirus (Bluegill sunfish) n factor (BCF): 570
	ion coefficient: n- nol/water	:	: log Pow: 4,67	
	ility in soil ata available			
12.5 Resu	Its of PBT and vPvB	asse	ssment	
Prod	uct:			
Asse	ssment	:	to be either pers	mixture contains no components considered istent, bioaccumulative and toxic (PBT), or and very bioaccumulative (vPvB) at levels of
12.6 Endo	ocrine disrupting pro	pertie	S	
Prod	uct:			
Asse	ssment	:	ered to have end REACH Article 5	nixture does not contain components consid- docrine disrupting properties according to 57(f) or Commission Delegated regulation or Commission Regulation (EU) 2018/605 at r higher.
12.7 Othe	er adverse effects			

No data available



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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 han- dling site for recycling or disposal. Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or ex- pose 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	
	ΙΑΤΑ	:	UN 1993	
14.2	2 UN proper shipping name			
	ADN	:	FLAMMABLE LIQUID (Solvent naphtha (per	D, N.O.S. troleum), light aromatic)
	ADR	:	FLAMMABLE LIQUID (Solvent naphtha (pet	D, N.O.S. troleum), light aromatic)
	RID	:		D, N.O.S. troleum), light aromatic)
	IMDG	:		D, N.O.S. troleum), light aromatic, Permethrin
	ΙΑΤΑ	:		o.s. troleum), light aromatic)
14.:	3 Transport hazard class(es)			
			Class	Subsidiary risks
	ADN	:	3	
	ADR	:	3	
	RID	:	3	

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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	MDG ATA		:	3 3	
14.4 P	ackin	g group			
A Pa C H	DN acking lassifi	g group cation Code Identification Number	: :	III F1 30 3	
Pa Cl Ha La	lassifi lazard abels	g group cation Code Identification Number restriction code	: : : : : : : : : : : : : : : : : : : :	III F1 30 3 (D/E)	
Pa Ci Hi	lassifi	g group cation Code Identification Number	: :	III F1 30 3	
Pa La	NDG acking abels mS C	g group ode	:	III 3 F-E, <u>S-E</u>	
Pa ai Pa Pa	acking ircraft) acking	Cargo) g instruction (cargo g instruction (LQ) g group	:	366 Y344 III Flammable Liquic	ls
Pa ge Pa Pa	acking er airc acking	Passenger) g instruction (passen- raft) g instruction (LQ) g group	:	355 Y344 III Flammable Liquic	ls
14.5 E	inviro	nmental hazards		·	
	DN nviror	mentally hazardous	:	yes	
	DR nviror	mentally hazardous	:	yes	
E	ID nviror MDG	mentally hazardous	:	yes	
		pollutant	:	yes	



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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 fol- lowing entries should be considered: Number on list 3
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)		Number on list 28: Solvent naphtha (petroleum), light aromatic
		Number on list 29: Solvent naphtha (petroleum), light aromatic
		Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)		
		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 condi- tions in corresponding Regulation to determine whether an entry is appli- cable 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 pollu- tants (recast)	:	Not applicable
Regulation (EU) No 649/2012 of the European Parlia- ment and the Council concerning the export and import of dangerous chemicals	:	Permethrin (ISO)

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



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P5c		FLAMMABLE LI	QUIDS	Quantity 1 5.000 t	Quantity 2 50.000 t
E1		ENVIRONMENT	AL	100 t	200 t
34		Petroleum produ gasolines and na (b) kerosenes (in fuels), (c) gas oil ing diesel fuels, I heating oils and blending streams heavy fuel oils (e tive fuels serving purposes and wi properties as reg flammability and mental hazards a	HAZARDS Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (includ- ing diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alterna- tive fuels serving the same purposes and with similar properties as regards flammability and environ- mental hazards as the products referred to in		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
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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.
		intes.

Full text of H-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.
H332 :	Harmful if inhaled.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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H336 H340 H350 H400 H410 H411 EUH0	66		May cause genet May cause cance Very toxic to aqua Very toxic to aqua Toxic to aquatic I	er.
Full text of other abbreviations		, , , ,		
Aquat Asp. T Carc. Flam. Muta. Skin I Skin S STOT FOR-2	ic Acute ic Chronic Tox. Liq. rrit. Sens.		Aspiration hazard Carcinogenicity Flammable liquid Germ cell mutage Skin irritation Skin sensitisation Specific target or	nic) aquatic hazard s enicity gan toxicity - single exposure tional Exposure limits

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



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- 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	:		data from raw material SDSs, OECD sults and European Chemicals Agen- u/
Classification of the mixture:			Classification procedure:
Flam. Liq. 3	H2	26	Based on product data or assessment
Acute Tox. 4	H3	02	Calculation method
Skin Sens. 1	H3	17	Calculation method
Muta. 1B	H3	40	Calculation method
Carc. 1B	H3	50	Calculation method
STOT SE 3	H3	36	Calculation method
Asp. Tox. 1	H3	04	Calculation method
Aquatic Acute 1	H4	00	Calculation method
Aquatic Chronic 1	H4	10	Calculation method

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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