

Safety Data Sheet

Precipitation solution with internal standard
for PEth from whole blood

according to Regulation (EC) No 1907/2006 (REACH)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product code: A371-010

Product name: Precipitation solution with internal standard
for PEth from whole blood

REACH

Registration number: not relevant (mixture)

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

Relevant identified use: Product for in vitro diagnostics

Uses advised against:

Do not use for private purposes.

1.3 Details of the supplier of the safety data sheet

Address: ARCHImedline GmbH
Leberstraße 20/2, 1110 Wien, Austria

E-Mail: info@archimedline.com

Tel: +43 1 3940020

Web: www.archimedline.com

1.4 Emergency telephone number

Austria:	0043 14064343	24 hours
Germany:	0049 3019240 (Berlin)	24 hours
	0049 22819240 (Bonn)	24 hours
	0049 361 730730 (Göttingen)	24 hours
	0049 613119240 (Mainz)	24 hours
	0049 8919240 (München)	24 hours
Switzerland:	0041 442515151 (Zürich) (abroad)	24 hours
	145 (national)	24 hours

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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	Flammable liquids	2	Flam. Liq. 2	H225
3.1O	Acute toxicity (oral)	4	Acute Tox. 4	H302
3.1D	Acute toxicity (dermal)	4	Acute Tox. 4	H312
3.1I	Acute toxicity (inhalation)	4	Acute Tox. 4	H332
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.6	Carcinogenicity	2	Carc. 2	H351
3.8R	Specific target organ toxicity - single exposure (respiratory tract irritation)	3	STOT SE 3	H335
3.8D	Specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336

Supplemental hazard information

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Code	Supplemental hazard information
EUH019	May form explosive peroxides

For the full text of abbreviations, see SECTION 16

The most important adverse physicochemical effects and adverse effects on human health and the environment

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Danger

Pictograms

GHS02, GHS07, GHS08



Hazard statements

H225	Highly flammable liquid and vapor
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233	Keep container tightly closed
P261	Avoid breathing mist/vapors
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312	Call a POISON CENTRE/doctor if you feel unwell
P370+P378	In case of fire: Use sand, carbon dioxide or dry powder to extinguish
P308+P313	IF exposed or concerned: Get medical advice/attention
P403+P235	Store in a well-ventilated place. Keep cool

Supplemental hazard information

EUH019	May form explosive peroxides.
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Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Hazard pictogram(s):

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H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
P280	Wear protective clothing/eye protection/face protection.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
EUH019	May form explosive peroxides.

Labelling of packages where the contents do not exceed 10 ml

Signal word: Not required

Hazard pictogram(s):



Hazard statements: Not required

Precautionary statements: Not required

2.3 Other hazards

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

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Substance name	Identifier	Wt.-%	Classification according to GHS	Pictograms	Note
Acetonitrile	CAS No 75-05-8 EC No 200-835-2 Index No 608-001-00-3 REACH Reg. No 01-2119471307- 38-xxxx	≥ 5	Flam. Liq. 2 / H225 Acute Tox. 4 / H302 Acute Tox. 4 / H312 Acute Tox. 4 / H332 Eye Irrit. 2 / H319	 	N/A
2-Propanol	CAS No 67-63-0 EC No 200-661-7 Index No 603-117-00-0 REACH Reg. No 01-2119457558- 25-xxxx	≥ 20- <60	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336 Concentration limits: ≥ 20 %: STOT SE 3, H336;	 	N/A
Tetrahydrofuran	CAS No 109-99-9 EC No 203-726-8 Index No 603-025-00-0 REACH Reg. No 01-2119444314- 46-xxxx	≥ 20- <60	Eye Irrit. 2; H319: C ≥ 25 % STOT SE 3; H335: C ≥ 25 %	  	N/A

Description of the mixture

Substance name	Specific concentration limits	M-factors	ATE	Route of exposure.
Acetonitrile	-	-	469 mg/kg 1,100 mg/kg 11 mg/l/4h	oral dermal inhalation: vapor

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Tetrahydrofuran	-	-	1650 mg/kg	oral
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SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General notes

Do not leave affected persons unattended. Remove the casualty from the danger area. Keep the affected person at rest, covered and warm. Remove contaminated, soaked clothing immediately. Seek medical advice if symptoms occur or if in doubt. If unconscious, place in the recovery position and do not give anything by mouth.

Following inhalation

If breathing is irregular or has stopped, seek medical assistance immediately and initiate first aid measures. Provide fresh air.

Following skin contact

Wash with plenty of soap and water. Consult a physician.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Hold eyelids open and rinse with plenty of clean, flowing water for at least 10 minutes and consult a physician.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described on the label

(see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water spray, alcohol-resistant foam, BC powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or during use, explosive/highly flammable vapor/air mixtures may form. Solvent vapors are heavier than air and may spread along floors. The presence of combustible substances or mixtures must be anticipated in areas not reached by ventilation, e.g. unventilated low-lying areas such as pits, ducts, basements and shafts.

Hazardous combustion products

Nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂)

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5.3 Advice for fire fighting

Do not breathe explosion and combustion gases. Coordinate firefighting measures with the surroundings. Do not allow firefighting water to enter drains or watercourses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Non-emergency personnel

Use the required personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapor/aerosol. Avoid ignition sources.

Emergency responders

Wear respiratory protection in the event of exposure to vapors, dusts, aerosols and gases.

6.2 Environmental precautions

Prevent entry into drains, surface water and groundwater. Retain and dispose of contaminated wash water.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spilled material using sawdust, kieselguhr (diatomite), sand or universal binder

Appropriate containment techniques

Use adsorbent materials.

Other information relating to spills and releases

Place in suitable containers for disposal. Ventilate the affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure adequate ventilation. Use a fume hood (laboratory). Open and handle containers with care. Clean contaminated surfaces thoroughly.

- Measures to prevent fire and aerosol and dust generation

Use local and general ventilation. Avoid ignition sources. Keep away from ignition sources - no smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to the risk of explosion, prevent vapors from entering basements, drains and pits. Ground the container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools.

- Specific notes/information

The presence of combustible substances or mixtures must be anticipated in areas not reached by ventilation, e.g. unventilated low-lying areas such as pits, ducts, basements and shafts. Vapors are heavier than air, spread along the floor and form an explosive mixture with air. Vapors may form an explosive mixture with air.

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Advice on general occupational hygiene

Wash hands after use. Do not eat, drink or smoke in work areas. Remove contaminated clothing and protective equipment before entering areas where food is consumed. Do not store food and beverages together with chemicals. Do not use containers normally intended for food for chemicals. Keep away from food, drink and animal feeding stuffs.

7.2 Conditions for safe storage, including any incompatibilities

Management of the following risks

- Explosive atmospheres

Keep container tightly closed in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from ignition sources - no smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

Control of effects

Protect from sunlight. Protect from moisture.

- Ventilation requirements

Where possible, store hazardous substances that emit harmful vapors in areas with continuous extraction. Use local and general ventilation. Ground the container and receiving equipment.

- Suitable packaging

Only approved packaging (e.g. in accordance with ADR) may be used

7.3 Specific end use(s)

For a general overview, see section 16.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values (workplace exposure limits)											
Country	Substance	CAS No	Identifier	SMW [ppm]	SMW [mg/m ³]	KZW [ppm]	KZW [mg/m ³]	Mow [ppm]	Mow [mg/m ³]	Note	Source
DE	Acetonitrile	75-05-8	MAK	10	17	20	34				DFG
DE	Acetonitrile	75-05-8	AGW	10	17	20	34			H, Y	TRGS 900
EU	Acetonitrile	75-05-8	IO-ELV	40	70						2006/15/EC
DE	2-Propanol	67-63-0	AGW	200	500	400	1000			Y	TRGS 900

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BE	Tetrahydr o-furan	109 -99- 9	VLEP/ G WBB	50	150	100	300			Be- D	Moniteur Blege
EU	Tetrahydr o-furan	109 -99- 9	VLEP/ G WBB	50	150	100	300			H	2000/39/ EC

Note

BE-D Uptake of the agent through the skin, mucous membranes or eyes constitutes an important part of total exposure. Such uptake may occur both through direct contact and as a result of the presence of the agent in the air.

H skin absorption

KZW short-term exposure limit: limit value that should not be exceeded, related to a period of 15 minutes (unless otherwise specified)

Mow ceiling value: limit value that should not be exceeded

SMW shift average value (long-term exposure limit): time-weighted average measured or calculated over a reference period of eight hours (unless otherwise specified)

Y a risk of damage to the unborn child need not be feared if the occupational exposure limit and biological limit value (BGW) are complied with

Relevant DNELs of components of the mixture

Substance name	CAS No	Endpoint	Threshold value	Protection target, route of exposure	Used by	Exposure duration
Acetonitrile	75-05-8	DNEL	68 mg/m ³	Human, inhalation	Workers (industrial)	Acute - local effect
Acetonitrile	75-05-8	DNEL	68 mg/m ³	Human, inhalation	Workers (industrial)	Acute - systemic effect
Acetonitrile	75-05-8	DNEL	68 mg/m ³	Human, inhalation	Workers (industrial)	Chronic - local effect
Acetonitrile	75-05-8	DNEL	32.2 mg/m ³	Human, dermal	Workers (industrial)	Chronic - systemic effect
Acetonitrile	75-05-8	DNEL	68 mg/m ³	Human, inhalation	Workers (industrial)	Chronic - systemic effect
2-Propanol	67-63-0	DNEL	500 mg/m ³	Human, inhalation	Workers (industrial)	Chronic - systemic effect
2-Propanol	67-63-0	DNEL	1000 mg/m ³	Human, inhalation	Workers (industrial)	Acute - systemic effect
2-Propanol	67-63-0	DNEL	888 mg/kg bw/day	Human, dermal	Workers (industrial)	Chronic - systemic effect
Tetrahydrofuran	109-99-9	DNEL	72.4 mg/m ³	Human, inhalation	Workers (industrial)	Chronic - systemic effect
Tetrahydrofuran	109-99-9	DNEL	96 mg/m ³	Human, inhalation	Workers (industrial)	Acute - systemic effect

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Tetrahydrofuran	109-99-9	DNEL	150 mg/m ³	Human, inhalation	Workers (industrial)	Chronic - local effect
Tetrahydrofuran	109-99-9	DNEL	300 mg/m ³	Human, inhalation	Workers (industrial)	Acute - local effect
Tetrahydrofuran	109-99-9	DNEL	12.6 mg/kg bw/day	Human, dermal	Workers (industrial)	Chronic - systemic effect

Relevant PNECs of components of the mixture

Substance name	CAS No	Endpoint	Threshold value	Organism	Environmental compartment	Exposure duration
Acetonitrile	75-05-8	PNEC	32 mg/L	Microorganisms	Sewage treatment plant (STP)	Short-term (single)
Acetonitrile	75-05-8	PNEC	7.53 mg/kg	Benthic organisms	Sediment	Short-term (single)
Acetonitrile	75-05-8	PNEC	10 mg/L	Aquatic organisms	Fresh water	Short-term (single)
Acetonitrile	75-05-8	PNEC	1mg/L	Aquatic organisms	Marine water	Short-term (single)
Acetonitrile	75-05-8	PNEC	32 mg/L	Aquatic organisms	Sewage treatment plant (STP)	Short-term (single)
Acetonitrile	75-05-8	PNEC	2.41 mg/kg	Aquatic organisms	Soil	Short-term (single)
Acetonitrile	75-05-8	PNEC	7.53 mg/kg	Aquatic organisms	Freshwater sediment	Short-term (single)
Acetonitrile	75-05-8	PNEC	10 mg/L	Aquatic organisms	Water	Intermittent release
2-Propanol	67-63-0	PNEC	140.9 mg/L	Aquatic organisms	Fresh water	Short-term (single)
2-Propanol	67-63-0	PNEC	140.9 mg/L	Aquatic organisms	Marine water	Short-term (single)
2-Propanol	67-63-0	PNEC	2251 mg/L	Aquatic organisms	Sewage treatment plant (STP)	Short-term (single)
2-Propanol	67-63-0	PNEC	552 mg/kg	Aquatic organisms	Freshwater sediment	Short-term (single)
2-Propanol	67-63-0	PNEC	552 mg/kg	Aquatic organisms	Marine sediment	Short-term (single)
2-Propanol	67-63-0	PNEC	28 mg/kg	Terrestrial organisms	Soil	Short-term (single)
Tetrahydrofuran	109-99-9	PNEC	4.32 mg/L	Aquatic organisms	Fresh water	Short-term (single)
Tetrahydrofuran	109-99-9	PNEC	0.432 mg/L	Aquatic organisms	Marine water	Short-term (single)
Tetrahydrofuran	109-99-9	PNEC	4.6 mg/L	Aquatic organisms	Sewage treatment plant (STP)	Short-term (single)
Tetrahydrofuran	109-99-9	PNEC	23.3 mg/kg	Aquatic organisms	Freshwater sediment	Short-term (single)

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Tetrahydrofuran	109-99-9	PNEC	2.33 mg/kg	Aquatic organisms	Marine sediment	Short-term (single)
Tetrahydrofuran	109-99-9	PNEC	2.13 mg/kg	Terrestrial organisms	Soil	Short-term (single)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear safety goggles/face protection.

Skin protection

- Hand protection

Wear suitable protective gloves. Chemical protection gloves tested in accordance with EN 374 are suitable. Check for leaks/impermeability before use. If reuse is intended, clean gloves before removing them and ventilate them thoroughly afterwards. It is recommended to clarify the chemical resistance of the protective gloves stated above for specific applications with the glove manufacturer.

- Other protective measures

Allow recovery periods for skin regeneration. Preventive skin protection (protective creams/ointments) is recommended. Wash hands thoroughly after use.

Respiratory protection

Wear respiratory protection if ventilation is inadequate.

Environmental exposure controls

Use an appropriate container to avoid environmental contamination. Prevent entry into drains, surface water and groundwater.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Color	Colorless
Odor	No data available
Melting point/freezing point	No data available
Boiling point or initial boiling point and boiling range	No data available
Flammability	No data available
Lower and upper explosion limit	No data available
Flash point	No data available
Auto-ignition temperature	No data available

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Decomposition temperature	No data available
pH	No data available
Kinematic viscosity	No data available

Solubility

Solubility in water	miscible in all proportions
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Partition coefficient

Partition coefficient n-octanol/water (log value)	no information available
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Vapor pressure	No data available
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Density and/or relative density

Density	No data available
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Particle characteristics	No additional information is available
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9.2 Other information

Information with regard to physical hazard classes	No additional information is available
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Other safety characteristics

Miscibility	Completely miscible with water
Solvent content	100%
Solids content	0%
Temperature class (EU according to ATEX)	No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

This is a reactive substance. Risk of ignition. Vapors may form an explosive mixture with air. May form explosive peroxides.

When heated

Risk of ignition.

10.2 Chemical stability

The material is stable under normal ambient conditions and under the temperature and pressure conditions anticipated during storage and handling.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidizing agents, peroxides, strong acids

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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10.5 Incompatible materials

Rubber products, oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products that may reasonably be expected to arise as a result of use, storage, spillage or heating are known. Hazardous combustion products: see section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.

Substance name	CAS No	Endpoint	Species	Route of exposure	Value	Source
Tetrahydrofuran	109-99-9	LD50	Rat	Oral	1650 mg/kg	ECHA
Tetrahydrofuran	109-99-9	LD50	Rat	Dermal	>2,000 mg/kg	ECHA

- Acute toxicity estimate (ATE)

Acute toxicity estimate (ATE) of components of the mixture			
Substance name	CAS No	Route of exposure	ATE
Acetonitrile	75-05-8	Oral	469 mg/kg
Acetonitrile	75-05-8	Dermal	1,100 mg/kg
Acetonitrile	75-05-8	Inhalation: vapor	11 mg/l/4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as toxic for reproduction.

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Specific target organ toxicity - single exposure

Shall not be classified as specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Endocrine-disrupting properties

Does not contain an endocrine disruptor (EDC) at a concentration of $\geq 0.1\%$.

11.3 Information on other hazards

No additional information is available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

According to Regulation (EC) No 1272/2008: shall not be classified as hazardous to the aquatic environment.

(Acute) aquatic toxicity

Substance name	CAS No	Endpoint	Species	Value	Exposure duration	Source
Tetrahydrofuran	109-99-9	LC50	Fish	2,160 mg/L	96 h	ECHA
Tetrahydrofuran	109-99-9	EC50	Fish	1,930 mg/L	96 h	ECHA
Acetonitrile	75-05-8	LC50	Fish	1.640 mg/L	96 h	ECHA
Acetonitrile	75-05-8	EC50	Algae	9,696 mg/L	72 h	ECHA
2-Propanol	67-63-0	LC50	Fish	10,000 mg/L	96 h	ECHA

Chronic aquatic toxicity

Substance name	CAS No	Endpoint	Species	Value	Exposure duration	Source
Tetrahydrofuran	109-99-9	EC50	Microorganisms	>1,000 mg/L	30 min	ECHA
Tetrahydrofuran	109-99-9	NOEC	Fish	102 mg/L	21 d	ECHA
Acetonitrile	75-05-8	NOEC	Fish	216 mg/L	33 d	ECHA
Acetonitrile	75-05-8	LOEC	Algae	367 mg/L	33d	ECHA
2-Propanol	67-63-0	NOELR	Fish	>1,000 mg/L	28 d	ECHA

12.2 Persistence and degradability

No data are available.

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12.3 Bioaccumulative potential

No data are available.

12.4 Mobility in soil

No data are available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is neither a PBT nor a vPvB substance.

12.6 Endocrine-disrupting properties

Does not contain an endocrine disruptor (EDC) at a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

No data are available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of this product and its container as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packaging

This is hazardous waste; only approved packaging (e.g. in accordance with ADR) may be used

13.2 Relevant provisions relating to waste

Waste code numbers/waste descriptions must be assigned on an industry- and process-specific basis in accordance with the EAKV. Waste Catalogue Ordinance (the AVV replaces the EAK Ordinance/European Waste Catalogue Ordinance).

13.3 Remarks

Waste must be separated so that it can be treated separately by municipal or national waste disposal facilities. Please observe the relevant national or regional provisions.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID/ADN	UN 2056
IMDG-Code	UN 2056
ICAO-TI	UN 2056

14.2 UN proper shipping name

ADR/RID/ADN	TETRAHYDROFURAN
IMDG-Code	TETRAHYDROFURAN
ICAO-TI	Tetrahydrofuran

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14.3 Transport hazard class(es)

ADR/RID/ADN	3
IMDG-Code	3
ICAO-TI	3

14.4 Packing group

ADR/RID/ADN	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazards

Not environmentally hazardous according to the dangerous goods regulations.

14.6 Special precautions for user

The dangerous goods regulations (ADR) must also be observed within company premises.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not transported in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

- Additional information

UN proper shipping name	TETRAHYDROFURAN
Entries in the transport document	UN2056, TETRAHYDROFURAN, 3, II, (D/E)
Classification code	F1
Hazard label	3



Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D/E
Hazard identification number	33

International Maritime Dangerous Goods Code (IMDG) -

Additional information

UN proper shipping name	TETRAHYDROFURAN
Information in the transport document (shipper's declaration)	UN2056, Tetrahydrofuran 3, II, -21.2°C c.c.
Marine pollutant	-
Hazard label	3

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Excepted quantities (EQ) E2
Limited quantities (LQ) 1 L
EmS F-E, S-D
Stowage category B

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

UN proper shipping name TETRAHYDROFURAN
Information in the transport document UN2056, Tetrahydrofuran, 3, II
(shipper's declaration)
Hazard label 3



Excepted quantities (EQ) E2
Limited quantities (LQ) 1 L

SECTION 15: REGULATORY INFORMATION

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Restricted substances (REACH, Annex XVII)				
Substance name	Name as listed	CAS No	Restriction	No.
Tetrahydrofuran	this product meets the criteria for classification in accordance with Regulation (EC) No 1272/2008	109-99-9	R3	3
Tetrahydrofuran	flammable / self-igniting (pyrophoric)	109-99-9	R40	40
Tetrahydrofuran	Substances in tattoo inks and permanent make-up	109-99-9	R75	75

Legend

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according to Regulation (EC) No 1907/2006 (REACH)

- R3
1. Shall not be used
 - in ornamental articles intended to produce light or color effects by means of different phases, for example in mood lamps and ashtrays;
 - in tricks and jokes;
 - in games for one or more participants, or in any article intended to be used as such, even with ornamental aspects.
 2. Articles that do not comply with paragraph 1 shall not be placed on the market.
 3. Shall not be placed on the market if they contain a coloring agent, unless required for fiscal reasons, and/or perfume, if
 - they can be used as fuel in decorative oil lamps intended for supply to the general public, and
 - they present an aspiration hazard and are labelled with H304.
 4. Decorative oil lamps intended for supply to the general public shall not be placed on the market unless they comply with the European Standard on decorative oil lamps (EN 14059) adopted by the European Committee for Standardization (CEN).
 5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before placing them on the market, that the following requirements are met:
 - a) lamp oils labelled with H304 and intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, from 1 December 2010: 'Just a sip of lamp oil — or even sucking the wick of a lamp — may lead to life-threatening lung damage';
 - b) grill lighter fluids labelled with H304 and intended for supply to the general public are, from 1 December 2010, legibly and indelibly marked as follows: 'Just a sip of grill lighter fluid may lead to life-threatening lung damage';
 - c) lamp oils and grill lighter fluids labelled with H304 and intended for supply to the general public are, from 1 December 2010, packaged in black opaque containers with a capacity not exceeding 1 liter.
- R40
1. Shall not be used, as substances or in mixtures, in aerosol dispensers intended for supply to the general public for entertainment and decorative purposes, such as for
 - metallic glitter intended mainly for decoration, particularly for festivities,
 - artificial snow and frost,
 - indecent noises,
 - streamers,
 - imitation excrement,
 - horns for entertainment,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure, before placing them on the market, that the packaging of the aerosol dispensers referred to above is visibly, legibly and indelibly marked with the following wording:

"For professional users only".
 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to in Article 8(1a) of Council Directive 75/324/EEC (2).
 4. The aerosol dispensers referred to in paragraphs 1 and 2 may be placed on the market only if they comply with the requirements set out therein.
- R75
1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing such substances shall not be used for tattooing purposes after 4 January 2022, if the substance or substances in question are present under any of the following circumstances:
 - a) in the case of substances classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogenic category 1A, 1B or 2 or as germ cell mutagenic category 1A, 1B or 2, where the concentration of the substance in the mixture is equal to or greater than 0.00005 % by weight;
 - b) in the case of substances classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as toxic to reproduction category 1A, 1B or 2, where the concentration of the substance in the mixture is equal to or greater than 0.001 % by weight;
 - c) in the case of substances classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitizing category 1, 1A or 1B, where the concentration of the substance in the mixture is equal to or greater than 0.001 % by weight;
 - d) in the case of substances classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1A, 1B or 1C, skin irritant category 2, causing serious eye damage category 1 or eye irritant category 2, where the concentration of the substance in the mixture
 - i) is equal to or greater than 0.1 % by weight where it is used solely as a pH regulator, and
 - ii) is equal to or greater than 0.01 % by weight in all other cases;
 - e) in the case of substances listed in Annex II to Regulation (EC) No 1223/2009 (*1), where the concentration of the substance in the mixture is equal to or greater than 0.00005 % by weight;

f) in the case of substances for which one or more of the following conditions are specified in column g (Product type, body parts) of the table in Annex IV to Regulation (EC) No 1223/2009:

- i) 'rinse-off products',
- ii) 'Not to be used in products applied on mucous membranes',
- iii) 'Not to be used in eye products', where the concentration of the substance in the mixture is equal to or greater than 0.00005 % by weight;

g) in the case of substances for which a condition is specified in column h (Maximum concentration in ready-for-use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, where the substance is present in the mixture at a concentration or in another manner that does not comply with the condition specified in the relevant column;

h) in the case of substances listed in Appendix 13 to this Annex, where the substance is present in the mixture at a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.

2. For the purposes of this entry, use of a mixture 'for tattooing purposes' means injection or introduction of the mixture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, microblading and micropigmentation), with the aim of making a mark or design on the person's body.

3. Where a substance not listed in Appendix 13 falls under more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the relevant points shall apply to that substance. Where a substance listed in Appendix 13 also falls under one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.

4. By way of derogation, paragraph 1 shall not apply until 4 January 2023 to the following substances:

- a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
- b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).

5. Where Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or reclassify a substance so that it falls under point (a), (b), (c) or (d) of paragraph 1 of this entry, or under a different one of those points than previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as applicable, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of the new or revised classification.

6. Where Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list a substance or amend the entry for a substance so that it falls under point (e), (f) or (g) of paragraph 1 of this entry, or under a different one of those points than previously, and the amendment takes effect after the date referred to in paragraph 1 or, as applicable, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect 18 months after entry into force of the act by which the amendment was made.

7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, it bears a label containing the following information:

- a) the statement 'Mixture for use in tattoos or permanent make-up';
- b) a reference number to uniquely identify the batch;
- c) the list of ingredients according to the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009 or, in the absence of a common ingredient name, the IUPAC name. Where neither a common ingredient name nor an IUPAC name is available, the CAS and EC numbers shall be used. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. 'Ingredient' means any substance added during formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. Where the name of a substance used as an ingredient within the meaning of this entry is already required to appear on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be indicated in accordance with this Regulation;
- d) the additional statement "pH regulator" for substances to which point (d)(i) of paragraph 1 applies;
- e) the statement 'Contains nickel. May cause allergic reactions.' where the mixture contains nickel below the concentration limit specified in Appendix 13;
- f) the statement 'Contains chromium (VI). May cause allergic reactions.' where the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
- g) safety instructions for use, insofar as they are not already required to appear on the label under Regulation (EC) No 1272/2008. The information shall be clearly visible, readily legible and indelibly marked. The information shall be written in the official language or languages of the Member State or States where the mixture is placed on the market, unless the Member State or States concerned provide otherwise. Where necessary because of the size of the package, the information listed in the first subparagraph, except point (a), shall instead be included in the instructions for use.

Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.

8. Mixtures that do not bear the statement 'Mixture for use in tattoos or permanent make-up' shall not be used for tattooing purposes.

9. This entry shall not apply to substances that are gases at a temperature of 20 °C and a pressure of 101.3 kPa, or that generate a vapor pressure greater than 300 kPa at a temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry shall not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, where it is placed on the market exclusively as a medical device or an accessory to a medical device within the meaning of Regulation (EU) 2017/745, or is used exclusively as a medical device or an accessory to a medical device within that meaning. Where the mixture may not be placed on the market or used exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

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Decopaint Directive (2004/42/EC)

VOC content	100%
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Industrial Emissions Directive (VOCs, 2010/75/EU)

VOC content	100%
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National regulations (Germany)

Water hazard class (WGK) 2 clearly hazardous to water

Technical Instructions on Air Quality Control (Germany)

Number	Substance group	Class	Conc.	Mass flow	Mass concentration	Note
5.2.5	Organic substances	Class I	≥ 25 Wt.-%	0.1 kg/h	20 mg/m ³	3)

Note

3) the mass flow of 0.50 kg/h or the mass concentration of 50 mg/m³, each stated as total carbon, must not be exceeded overall (excluding particulate organic substances)

Storage of hazardous substances in non-stationary containers (TRGS 510) (Germany)

Storage class (LGK)

3 (flammable liquids)

15.2 Chemical safety assessment

Chemical safety assessments have not been carried out for substances in this mixture.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road
ADR/RID/ADN	Agreement concerning the International Carriage of Dangerous Goods by road/rail/inland waterway (ADR/RID/ADN)
AGW	Occupational exposure limit
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BSB	Biochemical oxygen demand
CAS	Chemical Abstracts Service (database of chemical compounds and their unique identifier, the CAS Registry Number)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

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CSB	Chemical oxygen demand
DGR	Dangerous Goods Regulations; rules for the transport of dangerous goods, see IATA/DGR
EC50	Effective Concentration 50 %. EC50 is the concentration of a tested substance that changes an effect (e.g. growth) by 50 % over a given period
EC No	The EC inventory (EINECS, ELINCS and the NLP list) is the source of the seven-digit EC number used to identify substances in the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, the concentration of the test substance that results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) compared with the control
Eye Dam.	Causes serious eye damage
Eye Irrit.	Eye irritant
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals", developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
Index No	The index number is the identification code specified in Annex VI, Part 3, to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
KZW	Short-term exposure limit
LC50	Lethal Concentration 50 %: LC50 is the concentration of a tested substance that causes 50 % lethality within a specified period
LD50	Lethal Dose 50 %: LD50 is the dose of a tested substance that causes 50 % lethality within a specified period
LGK	Storage class according to TRGS 510, Germany
log KOW	n-octanol/water
Mow	Ceiling value
NLP	No-Longer Polymer
PBT	Persistent, bioaccumulative and toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
Skin Corr.	Skin corrosive
Skin Irrit.	Skin irritant
SMW	Shift average value
SVHC	Substance of Very High Concern

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TRGS	Technical Rules for Hazardous Substances (Germany)
TRGS 900	Occupational exposure limits (TRGS 900)
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) 2020/878.

Transport of dangerous goods by road, rail or inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for air transport (IATA).

Classification procedure

Physical and chemical properties: the classification is based on test results for the mixture. Health hazards, environmental hazards: the classification method for the mixture is based on the components of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in sections 2 and 3)

Code	Text
H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.

Disclaimer

The information provided is based on our current state of knowledge. This SDS has been compiled exclusively for this product and is intended exclusively for this product.