

SAFETY DATA SHEET

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



arecal Thermo1200 lubricant 400 ml

Version	Revision Date:	SDS Number:	Date of last issue: 11.12.2023
3.0	17.04.2024	9822633-00007	Date of first issue: 11.10.2021

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

1.1 Product identifier

Trade name : arecal Thermo1200 lubricant 400 ml

Product code : 0896 512 400

Unique Formula Identifier (UFI) : 3J90-C0D5-600X-8DC6

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

Use of the Sub-stance/Mixture : Lubricant
Professional use product

Recommended restrictions on use : Not applicable

1.3 Details of the supplier of the safety data sheet

Company : RECA NORM GmbH
Am Wasserturm 4
DE-74635 Kupferzell

Telephone : +49 7944 61 0

E-mail address of person responsible for the SDS : sds@reca.com

1.4 Emergency telephone number

+49 (0)6132 – 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aerosols, Category 1	H222: Extremely flammable aerosol. H229: Pressurised container: May burst if heated.
Skin irritation, Category 2	H315: Causes skin irritation.
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 air-

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ways.

Long-term (chronic) aquatic hazard, Category 2

H411: 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 :

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H411	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.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.

Response:

P391	Collect spillage.
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Storage:

P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
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Hazardous components which must be listed on the label:

Hydrocarbons, C6, isoalkanes, <5% n-hexane
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics
Pentane
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

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.

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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.

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, C6, isoalkanes, <5% n-hexane	64742-49-0 01-2119484651-34	Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 20 - < 25
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	Not Assigned 649-328-00-1 01-2119473851-33	Flam. Liq. 2; H225 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066	>= 2,5 - < 10
Pentane	109-66-0 203-692-4 601-006-00-1 01-2119459286-30	Flam. Liq. 2; H225 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066	>= 2,5 - < 10
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	Not Assigned 01-2119486291-36	Flam. Liq. 2; H225 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066	>= 1 - < 2,5
Copper	7440-50-8 231-159-6 01-2119480154-42	Acute Tox. 4; H302 Acute Tox. 3; H331 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0,1 - < 0,25

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		M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	
		Acute toxicity estimate	
		Acute oral toxicity: 500 mg/kg Acute inhalation toxicity (dust/mist): 0,733 mg/l	

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 if symptoms occur.
- 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 : 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 and effects, both acute and delayed

- Risks : May be fatal if swallowed and enters airways.
Causes skin irritation.

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May cause drowsiness or dizziness.

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 : Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.

Hazardous combustion products : Carbon 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).

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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.
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.
Avoid breathing spray.
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 assessment
Keep container tightly closed.

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Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.
Do not spray on an open flame or other ignition source.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Do not pierce or burn, even after use. Keep cool. Protect from sunlight.

Advice on common storage : Do not store with the following product types:
Self-reactive substances and mixtures
Organic peroxides
Oxidizing agents
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures, which in contact with water, emit flammable gases
Explosives
Gases

Storage class (TRGS 510) : 2B

Recommended storage temperature : < 40 °C

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
Butane	106-97-8	AGW	1.000 ppm 2.400 mg/m ³	DE TRGS 900
	Peak-limit: excursion factor (category): 4;(II)			
		MAK	1.000 ppm	DE DFG MAK

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			2.400 mg/m3	
	Peak-limit: excursion factor (category): 4; II			
	Further information: Either there are no data for an assessment of damage to the embryo or foetus, including developmental neurotoxicity, or the currently available data are not sufficient for classification in one of the groups A - C			
Hydrocarbons, C6, isoalkanes, <5% n-hexane	64742-49-0	AGW	700 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: Group exposure limit for hydrocarbon solvent mixtures			
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	Not Assigned	AGW	300 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: Group exposure limit for hydrocarbon solvent mixtures			
Propane	74-98-6	AGW	1.000 ppm 1.800 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 4;(II)			
		MAK	1.000 ppm 1.800 mg/m3	DE DFG MAK
	Peak-limit: excursion factor (category): 4; II			
	Further information: Either there are no data for an assessment of damage to the embryo or foetus, including developmental neurotoxicity, or the currently available data are not sufficient for classification in one of the groups A - C			
Isobutane	75-28-5	AGW	1.000 ppm 2.400 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 4;(II)			
		MAK	1.000 ppm 2.400 mg/m3	DE DFG MAK
	Peak-limit: excursion factor (category): 4; II			
	Further information: Either there are no data for an assessment of damage to the embryo or foetus, including developmental neurotoxicity, or the currently available data are not sufficient for classification in one of the groups A - C			
Pentane	109-66-0	TWA	1.000 ppm 3.000 mg/m3	2006/15/EC
	Further information: Indicative			
		AGW	1.000 ppm 3.000 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		MAK	1.000 ppm 3.000 mg/m3	DE DFG MAK
	Peak-limit: excursion factor (category): 2; II			
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	Not Assigned	AGW	700 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			

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	Further information: Group exposure limit for hydrocarbon solvent mixtures			
Aluminium	7429-90-5	AGW (Inhalable fraction)	10 mg/m ³	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		AGW (Alveolate fraction)	1,25 mg/m ³	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
Copper	7440-50-8	MAK (measured as the alveolate fraction)	0,01 mg/m ³	DE DFG MAK
	Peak-limit: excursion factor (category): 2; II			
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Aluminium	7429-90-5	Aluminium: 50 µg/g creatinine (Urine)	In case of long-term exposure: after more than one shift	TRGS 903
		Aluminium: 50 µg/g creatinine (Urine)	end of shift, for long-term exposures after several previous shifts	DE DFG BAT

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	Workers	Inhalation	Long-term systemic effects	2035 mg/m ³
	Workers	Skin contact	Long-term systemic effects	773 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	608 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	699 mg/kg bw/day
Aluminium	Workers	Inhalation	Long-term local effects	3,72 mg/m ³
	Consumers	Ingestion	Long-term systemic effects	3,95 mg/kg bw/day
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Workers	Inhalation	Long-term systemic effects	5306 mg/m ³
	Workers	Skin contact	Long-term systemic	13964 mg/kg

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			effects	bw/day
	Consumers	Inhalation	Long-term systemic effects	1131 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	1377 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	1301 mg/kg bw/day
Pentane	Workers	Inhalation	Long-term systemic effects	3000 mg/m ³
	Workers	Skin contact	Long-term systemic effects	432 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	643 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	214 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	214 mg/kg bw/day
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	Workers	Inhalation	Long-term systemic effects	5306 mg/m ³
	Workers	Skin contact	Long-term systemic effects	13964 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	1131 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	1377 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	1301 mg/kg bw/day
Copper	Workers	Skin contact	Long-term systemic effects	137 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	273 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	1 mg/m ³
	Consumers	Inhalation	Acute systemic effects	1 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	137 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	237 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Aluminium	Sewage treatment plant	20 mg/l
Pentane	Fresh water	0,23 mg/l
	Marine water	0,23 mg/l
	Intermittent use/release	0,88 mg/l
	Sewage treatment plant	3,6 mg/l
	Fresh water sediment	1,2 mg/kg dry weight (d.w.)
	Marine sediment	1,2 mg/kg dry weight (d.w.)

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	Soil	0,55 mg/kg dry weight (d.w.)
Copper	Fresh water	7,8 µg/l
	Marine water	5,2 µg/l
	Sewage treatment plant	230 µg/l
	Fresh water sediment	87 mg/kg dry weight (d.w.)
	Marine sediment	676 mg/kg dry weight (d.w.)
	Soil	65 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

If sufficient ventilation is unavailable, use with local exhaust ventilation.

If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:
Safety glasses
Equipment should conform to DIN EN 166

Hand protection

Material : Nitrile rubber
Break through time : > 240 min
Glove thickness : $\geq 0,4$ mm
Directive : Equipment should conform to DIN EN 374

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Wear the following personal protective equipment:
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

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 DIN EN 137

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Filter type : Self-contained breathing apparatus

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Aerosol containing a dissolved gas

Propellant : Propane, Butane, Isobutane

Colour : silver

Odour : characteristic

Odour Threshold : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling range : Not applicable

Flammability (solid, gas) : Extremely flammable aerosol.

Upper explosion limit / Upper flammability limit : 10,9 %(V)

Lower explosion limit / Lower flammability limit : 0,9 %(V)

Flash point : Not applicable

Auto-ignition temperature : > 200 °C

Decomposition temperature : No data available

pH : substance/mixture is non-soluble (in water)

Viscosity

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Viscosity, kinematic	:	Not applicable
Solubility(ies) Water solubility	:	immiscible
Partition coefficient: n- octanol/water	:	Not applicable
Vapour pressure	:	3.400 hPa (20 °C)
Density	:	0,66 g/cm ³ (20 °C)
Relative vapour density	:	Not applicable
Particle characteristics Particle size	:	Not applicable

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Self-ignition	:	The substance or mixture is not classified as self heating.
Evaporation rate	:	Not applicable

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	:	Extremely flammable aerosol. Vapours may form explosive mixture with air. If the temperature rises there is danger of the vessels bursting
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due to the high vapor pressure.
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

Not classified based on available information.

Product:

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

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Acute oral toxicity : LD50 (Rat): 16.750 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): 259,354 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3.350 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 23,3 mg/l

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Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rat): > 2.800 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Pentane:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 3.350 mg/kg
Remarks: Based on data from similar materials

Copper:

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Method: Expert judgement

Acute inhalation toxicity : LC50 (Rat, male): 0,733 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Causes skin irritation.

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Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

Pentane:

Species : Rabbit
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

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

Assessment : Repeated exposure may cause skin dryness or cracking.

Copper:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Species : Rabbit
Result : No eye irritation
Remarks : Based on data from similar materials

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

Species : Rabbit
Result : No eye irritation

Pentane:

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Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Species : Rabbit
Result : No eye irritation
Remarks : Based on data from similar materials

Copper:

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

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Test Type : Local lymph node assay (LLNA)
Exposure routes : Skin contact
Species : Mouse
Result : negative
Remarks : Based on data from similar materials

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

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

Pentane:

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

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Test Type : Local lymph node assay (LLNA)
Exposure routes : Skin contact
Species : Mouse
Result : negative
Remarks : Based on data from similar materials

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Copper:

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

Germ cell mutagenicity

Not classified based on available information.

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative Remarks: Based on data from similar materials
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	Test Type: Chromosome aberration test in vitro Result: negative Remarks: Based on data from similar materials
--	---

	Test Type: In vitro mammalian cell gene mutation test Result: negative Remarks: Based on data from similar materials
--	--

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)
------------------------------------	--

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

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

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

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

Pentane:

Genotoxicity in vitro	: Test Type: Chromosome aberration test in vitro
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Method: Directive 67/548/EEC, Annex V, B.10.
Result: negative

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

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: inhalation (vapour)
Method: Directive 67/548/EEC, Annex V, B.12.
Result: negative

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

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

Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Result: negative
Remarks: Based on data from similar materials

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

Carcinogenicity

Not classified based on available information.

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Species : Rat
Application Route : inhalation (vapour)
Exposure time : 2 Years
Result : negative
Remarks : Based on data from similar materials

Species : Mouse
Application Route : inhalation (vapour)
Exposure time : 2 Years
Result : negative
Remarks : Based on data from similar materials

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

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Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

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

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Species : Rat
Application Route : inhalation (vapour)
Exposure time : 2 Years
Result : negative
Remarks : Based on data from similar materials

Species : Mouse
Application Route : inhalation (vapour)
Exposure time : 2 Years
Result : negative
Remarks : Based on data from similar materials

Reproductive toxicity

Not classified based on available information.

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapour)
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
Remarks: Based on data from similar materials

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapour)
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
Remarks: Based on data from similar materials

Pentane:

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

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapour)
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
Remarks: Based on data from similar materials

STOT - single exposure

May cause drowsiness or dizziness.

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Assessment : May cause drowsiness or dizziness.

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

Assessment : May cause drowsiness or dizziness.

Pentane:

Assessment : May cause drowsiness or dizziness.

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

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Species : Rat, male
NOAEL : 10,504 mg/l
Application Route : inhalation (vapour)
Exposure time : 90 Days
Remarks : Based on data from similar materials

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

Species : Rat
NOAEL : 5,8 mg/l
Application Route : inhalation (vapour)
Exposure time : 13 Weeks

Pentane:

Species : Rat
NOAEL : > 6700 ppm
Application Route : inhalation (gas)
Exposure time : 13 Weeks
Method : OECD Test Guideline 413

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Species : Rat, male
NOAEL : 10,504 mg/l
LOAEL : 31,652 mg/l
Application Route : inhalation (vapour)
Exposure time : 13 Weeks
Remarks : Based on data from similar materials

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

May be fatal if swallowed and enters airways.

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

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.

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

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.

Pentane:

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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Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

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.

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:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 100 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 1 - 10 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Selenastrum capricornutum (green algae)): > 10 - 100 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOELR (Selenastrum capricornutum (green algae)): 0,1 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: > 0,1 - 1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

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Remarks: Based on data from similar materials

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

- Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 3 - 10 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)): 4,6 - 10 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)): 10 - 30 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- NOELR (Pseudokirchneriella subcapitata (green algae)): 10 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,17 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 211

Pentane:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4,26 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,7 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Scenedesmus capricornutum (fresh water algae)): 10,7 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- NOEC (Scenedesmus capricornutum (fresh water algae)): 2,04 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Ecotoxicology Assessment

- Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.
Remarks: Based on national or regional regulation.

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Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 12 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 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction

Toxicity to algae/aquatic plants : EL50 (Selenastrum capricornutum (green algae)): > 10 - 100 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOELR (Selenastrum capricornutum (green algae)): 0,1 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Copper:

Toxicity to fish : LL50 (Pimephales promelas (fathead minnow)): > 0,01 - 0,1 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

M-Factor (Acute aquatic toxicity) : 10

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: > 0,001 - 0,01 mg/l
Species: Ceriodaphnia dubia (water flea)
Remarks: Based on data from similar materials

M-Factor (Chronic aquatic toxicity) : 10

12.2 Persistence and degradability

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

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Biodegradability : Result: Readily biodegradable.
Biodegradation: 81 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Pentane:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 87 %
Exposure time: 28 d

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 81 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Partition coefficient: n-
octanol/water : log Pow: 3,6

Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics:

Partition coefficient: n-
octanol/water : log Pow: > 4
Remarks: Expert judgement

Pentane:

Partition coefficient: n-
octanol/water : log Pow: 3,45

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:

Partition coefficient: n-
octanol/water : log Pow: > 3 - < 4
Remarks: Based on data from similar materials

12.4 Mobility in soil

No data available

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.

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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.
Please ensure aerosol cans are sprayed completely empty (including propellant)

Waste Code : The following Waste Codes are only suggestions:

used product
16 05 04, gases in pressure containers (including halons) containing hazardous substances

unused product
16 05 04, gases in pressure containers (including halons) containing hazardous substances

uncleaned packagings
15 01 10, packaging containing residues of or contaminated by hazardous substances
15 01 04, metallic packaging

Acc. Packaging Act properly emptied packaging:
Properly emptied, non-contaminated packaging of non-hazardous products can be supplied to a system for the collection of sales packaging.

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SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	UN 1950
ADR	:	UN 1950
RID	:	UN 1950
IMDG	:	UN 1950
IATA	:	UN 1950

14.2 UN proper shipping name

ADN	:	AEROSOLS
ADR	:	AEROSOLS
RID	:	AEROSOLS
IMDG	:	AEROSOLS (Copper, Hydrocarbons, C6, isoalkanes, <5% n-hexane)
IATA	:	Aerosols, flammable

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	: 2	2.1
ADR	: 2	2.1
RID	: 2	2.1
IMDG	: 2.1	
IATA	: 2.1	

14.4 Packing group

ADN		
Packing group	:	Not assigned by regulation
Classification Code	:	5F
Labels	:	2.1

ADR		
Packing group	:	Not assigned by regulation
Classification Code	:	5F
Labels	:	2.1
Tunnel restriction code	:	(D)

RID		
Packing group	:	Not assigned by regulation
Classification Code	:	5F
Hazard Identification Number	:	23
Labels	:	2.1

IMDG

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Packing group : Not assigned by regulation
Labels : 2.1
EmS Code : F-D, S-U

IATA (Cargo)

Packing instruction (cargo aircraft) : 203
Packing instruction (LQ) : Y203
Packing group : Not assigned by regulation
Labels : Flammable Gas

IATA (Passenger)

Packing instruction (passenger aircraft) : 203
Packing instruction (LQ) : Y203
Packing group : Not assigned by regulation
Labels : Flammable Gas

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 75

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

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||| determine whether an entry is applicable to the placing on the market or not.
If you intend to use this product as tattoo ink, please contact your vendor.

Copper (Number on list 75)

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

Regulation (EC) No 1005/2009 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

REACH - List of substances subject to authorisation (Annex XIV) : 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
P3a	FLAMMABLE AEROSOLS	150 t	500 t
E2	ENVIRONMENTAL HAZARDS	200 t	500 t
18	Liquefied flammable gases (including LPG) and natural gas	50 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

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Water hazard class (Germany) : WGK 2 obviously hazardous to water
Classification according to AwSV, Annex 1 (5.2)

TA Luft List (Germany) : 5.2.1: Total dust:
Not applicable
5.2.2: Inorganic substances in powdered form:
Class 3: 0,24 % Copper
5.2.4: Inorganic substances in gaseous form:
Not applicable
5.2.5: Organic Substances:
Not applicable
5.2.7.1.1: Carcinogenic substance:
Not applicable
5.2.7.1.1: Quartz fine dust PM4:
Not applicable
5.2.7.1.1: Formaldehyde:
Not applicable
5.2.7.1.1: fibres:
Not applicable
5.2.7.1.2: Germ cell mutagens:
Not applicable
5.2.7.1.3: Substances toxic to reproduction:
Not applicable
5.2.7.2: Poorly degradable, easily enrichable and highly toxic
organic substances:
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial
emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 76,01 %

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national
regulations, where applicable.

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

H225 : Highly flammable liquid and vapour.
H302 : Harmful if swallowed.
H304 : May be fatal if swallowed and enters airways.
H315 : Causes skin irritation.

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



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H319 : Causes serious eye irritation.
H331 : Toxic if inhaled.
H336 : May cause drowsiness or dizziness.
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.
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 Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Skin Irrit. : Skin irritation
STOT SE : Specific target organ toxicity - single exposure
2006/15/EC : Europe. Indicative occupational exposure limit values
DE DFG BAT : Germany. MAK BAT Annex XIII
DE DFG MAK : Germany. MAK BAT Annex IIa
DE TRGS 900 : Germany. TRGS 900 - Occupational exposure limit values.
TRGS 903 : TRGS 903 - Biological limit values
2006/15/EC / TWA : Limit Value - eight hours
DE DFG MAK / MAK : MAK value
DE TRGS 900 / AGW : Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - 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

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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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; 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:

Aerosol 1	H222, H229
Skin Irrit. 2	H315
STOT SE 3	H336
Asp. Tox. 1	H304
Aquatic Chronic 2	H411

Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Based on product data or assessment
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.

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