

SAFETY DATA SHEET

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



OKS 2501

Version	Revision Date:	Date of last issue: 28.05.2026	Print Date:
5.1	07.08.2026	Date of first issue: 05.07.2016	07.08.2026

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

1.1 Product identifier

Product name : OKS 2501

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

Use of the Substance/Mixture : Lubricant spray

Recommended restrictions on use : Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Company : OKS Spezialschmierstoffe GmbH
Ganghoferstr. 47
82216 Maisach
Germany
Tel.: +49 8142 3051-500
info@oks-germany.com

E-mail address of person responsible for the SDS : mcm@oks-germany.com

National contact : Klüber Lubrication France S.A.S.
Z.I. des Auréats, 10 à 16 Allée Ducretet
26014 Valence Cedex
France
+33-4-75448426
Fax: +33-4-75449336
KLF.contact@fr.klueber.com

1.4 Emergency telephone number

Emergency telephone number : +33 1 45 42 59 59 ORFILA
+33 1 72 11 00 03 NCEC
+49 8142 3051 517

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.

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Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure, Category 2, Central nervous system	H373: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
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.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure.
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.
P260 Do not breathe mist.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

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

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

P331 Do NOT induce vomiting.

Storage:

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Hazardous components which must be listed on the label:

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

calcium dihydroxide

n-hexane

Additional Labelling

EUH208 Contains Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate. May produce an allergic reaction.

2.3 Other hazards

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

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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

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Chemical nature : Propellant
Synthetic hydrocarbon oil
solid lubricant

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	921-024-6 01-2119475514-35-XXXX	Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 (Central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411		>= 25 - < 30
propane	74-98-6 200-827-9 601-003-00-5 01-2119486944-21-XXXX	Flam. Gas 1; H220 Press. Gas Compr. Gas; H280	Note U (Table 3)	>= 10 - < 20
calcium dihydroxide	1305-62-0 215-137-3 01-2119475151-45-XXXX	Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system)		>= 3 - < 10
n-hexane	110-54-3 203-777-6 601-037-00-0 01-2119480412-44-XXXX	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Repr. 2; H361f STOT SE 3; H336 (Central nervous system) STOT RE 1; H372 (Central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411	** , ***	>= 1 - < 2,5
Amines, N-C16-C18- alkyl-(evennumbered, C18 unsaturated) propane-1,3- diaminium di[(9Z)- octadec-9-enoate]	800-362-7 01-2119974117-33-XXXX	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 2; H411	M-Factor: 10/1	>= 1 - < 2,5
Molybdenum trioxide, reaction products with	947-946-9	Skin Irrit. 2; H315 Skin Sens. 1B;		>= 0,1 - < 0,25

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bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate	01-2120772600-59-XXXX	H317 Aquatic Chronic 4; H413		
Substances with a workplace exposure limit :				
butane	106-97-8 203-448-7 601-004-00-0 01-2119474691-32-XXXX	Flam. Gas 1; H220 Press. Gas Compr. Gas; H280	Note U (Table 3), Note C, Note S	>= 20 - < 30
titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7 236-675-5 01-2119489379-17-XXXX	Not classified		>= 1 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- If inhaled : Call a physician or poison control centre immediately.
Remove person to fresh air. If signs/symptoms continue, get medical attention.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Take off all contaminated clothing immediately.
Get medical attention immediately if irritation develops and persists.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
Wash off immediately with plenty of water.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.
Get medical attention immediately.
- If swallowed : Move the victim to fresh air.
If accidentally swallowed obtain immediate medical attention.
Keep respiratory tract clear.
Do NOT induce vomiting.
Rinse mouth with water.

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Aspiration hazard if swallowed - can enter lungs and cause damage.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Aspiration may cause pulmonary oedema and pneumonitis.

Inhalation may provoke the following symptoms:

Unconsciousness

Dizziness

Drowsiness

Headache

Nausea

Tiredness

Skin contact may provoke the following symptoms:

Erythema

Risks : May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye damage.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.

Central nervous system depression

Risk of product entering the lungs on vomiting after ingestion.

Health injuries may be delayed.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : ABC powder

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire Hazard
Do not let product enter drains.
Contains gas under pressure; may explode if heated.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NOx)

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Oxides of phosphorus
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. Exposure to decomposition products may be a hazard to health.

Further information : Standard procedure for chemical fires.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Cool containers/tanks with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.
Ensure adequate ventilation.
Remove all sources of ignition.
Do not breathe vapours or spray mist.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Refer to protective measures listed in sections 7 and 8.
Only qualified personnel equipped with suitable protective equipment may intervene.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.
Non-sparking tools should be used.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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- Advice on safe handling : Do not use in areas without adequate ventilation.
Do not breathe vapours or spray mist.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid contact with skin and eyes.
For personal protection see section 8.
Keep away from fire, sparks and heated surfaces.
Smoking, eating and drinking should be prohibited in the application area.
Wash hands and face before breaks and immediately after handling the product.
Do not get in eyes or mouth or on skin.
Do not get on skin or clothing.
Do not ingest.
Do not use sparking tools.
These safety instructions also apply to empty packaging which may still contain product residues.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.
- Hygiene measures : Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects. Store in accordance with the particular national regulations.

7.3 Specific end use(s)

- Specific use(s) : Specific instructions for handling, not required.

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	VME	800 ppm 1.900 mg/m ³	FR VLE (2005-02-01)
Further information: Permissible limit values (circular)				
titanium dioxide; [in powder form containing <1 % of	13463-67-7	VME	10 mg/m ³ (Titanium)	FR VLE (2020-12-18)

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particles with aerodynamic diameter $\leq 10 \mu\text{m}$				
	Further information: Carcinogenic category 2 - Possibly carcinogenic to humans, Permissible limit values (circular)			
calcium dihydroxide	1305-62-0	TWA (Respirable fraction)	1 mg/m ³	2017/164/EU (2017-02-01)
	Further information: Indicative			
		STEL (Respirable fraction)	4 mg/m ³	2017/164/EU (2017-02-01)
	Further information: Indicative			
		VME (Alveolar fraction)	1 mg/m ³	FR VLE (2022-10-27)
	Further information: Regulatory indicative exposure limits			
		VLCT (VLE) (Alveolar fraction)	4 mg/m ³	FR VLE (2022-10-27)
	Further information: Regulatory indicative exposure limits			
n-hexane	110-54-3	TWA	20 ppm 72 mg/m ³	2006/15/EC (2006-02-09)
	Further information: Indicative			
		VME	20 ppm 72 mg/m ³	FR VLE (2012-07-01)
	Further information: Reprotoxic category 2 - Possibly reprotoxic to humans, Regulatory binding exposure limits			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Workers	Skin contact	Long-term systemic effects	773 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	2035 mg/m ³
Benzene, mono-C10-13-alkyl derivs., distn. residues	Workers	Inhalation	Long-term systemic effects	2,2 mg/m ³
	Workers	Skin contact	Long-term systemic effects	3,15 mg/kg bw/day
calcium dihydroxide	Workers	Inhalation	Long-term local effects	1 mg/m ³
	Workers	Inhalation	Acute local effects	4 mg/m ³
Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]	Workers	Skin contact	Long-term systemic effects	0,04 mg/kg
	Workers	Inhalation	Long-term systemic effects	0,29 mg/m ³

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Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate	Workers	Inhalation	Long-term systemic effects	4,93 mg/m3
	Workers	Dermal	Long-term systemic effects	1,4 mg/kg bw/day
n-hexane	Workers	Inhalation	Long-term systemic effects	75 mg/m3
	Workers	Skin contact	Long-term systemic effects	11 mg/kg

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

Substance name	Environmental Compartment	Value
Benzene, mono-C10-13-alkyl derivs., distn. residues	Fresh water	0,001 mg/l
	Intermittent use/release	0,001 mg/l
	Marine water	0 mg/l
	Microbiological Activity in Sewage Treatment Systems	2 mg/l
	Fresh water sediment	16,5 mg/kg
calcium dihydroxide	Marine sediment	1,65 mg/kg
	Soil	3,7 mg/kg
	Fresh water	0,49 mg/l
	Marine water	0,32 mg/l
	Intermittent use/release	0,49 mg/l
Amines, N-C16-C18-alkyl- (evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]	Microbiological Activity in Sewage Treatment Systems	3 mg/l
	Soil	1080 mg/kg
	Fresh water	0,00638 mg/l
	Marine water	0,000638 mg/l
	Intermittent use/release	0,00509 mg/l
	Microbiological Activity in Sewage Treatment Systems	98,6 mg/l
	Fresh water sediment	204 mg/kg
	Marine sediment	20,4 mg/kg
	Soil	9,93 mg/kg

8.2 Exposure controls

Engineering measures

Use only in an area equipped with explosion proof exhaust ventilation.
Handle only in a place equipped with local exhaust (or other appropriate exhaust).

Personal protective equipment

Eye/face protection : Tightly fitting safety goggles

Hand protection

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Material : butyl-rubber
Break through time : > 10 min
Protective index : Class 1

Remarks : Wear protective gloves. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.
The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Short term only

Filter type : Filter type A-P

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Environmental exposure controls

Air : Should not be released into the environment.
Soil : Do not allow contact with soil, surface or ground water. The product should not be allowed to enter drains, water courses or the soil.
Water : Do not allow contact with soil, surface or ground water. The product should not be allowed to enter drains, water courses or the soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : aerosol

Colour : white

Odour : solvent-like

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Odour Threshold	:	No data available
Melting point/ range	:	No data available
Boiling point/boiling range	:	-20 °C (1.013 hPa)
Flammability	:	Flammability (solid, gas): Extremely flammable aerosol.
Upper explosion limit / Upper flammability limit	:	15 %(V)
Lower explosion limit / Lower flammability limit	:	0,6 %(V)
Flash point	:	-20 °C Method: Abel-Pensky, closed cup
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	Not applicable substance/mixture is non-soluble (in water)
Viscosity Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	< 20,5 mm ² /s (40 °C)
Solubility(ies) Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n- octanol/water	:	No data available

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Vapour pressure	:	2.860 hPa (20 °C)
Relative density	:	0,775 (20 °C) Reference substance: Water The value is calculated
Density	:	0,78 g/cm ³ (20 °C)
Bulk density	:	No data available
Relative vapour density	:	No data available

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	No data available
Self-ignition	:	not auto-flammable
Metal corrosion rate	:	Not corrosive to metals
Evaporation rate	:	No data available
Sublimation point	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No dangerous reaction known under conditions of normal use.
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10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.
Strong sunlight for prolonged periods.
Risk of receptacle bursting.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Acute toxicity

Based on available data, the classification criteria are not met.

Product:

Acute oral toxicity	: Remarks: Effects due to ingestion may include: Symptoms: Central nervous system depression
Acute inhalation toxicity	: Remarks: Respiration of solvent vapour may cause dizziness. Symptoms: Inhalation may provoke the following symptoms:, Respiratory disorder, Dizziness, Drowsiness, Vomiting, Fatigue, Vertigo, Central nervous system depression
Acute dermal toxicity	: Symptoms: Redness, Local irritation

Components:

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

Acute oral toxicity	: LD50 (Rat): > 5.840 mg/kg Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	: LC50 (Rat): > 25,2 mg/l Exposure time: 4 h Test atmosphere: vapour Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	: LD50 (Rat): > 2,8 g/kg Assessment: The substance or mixture has no acute dermal toxicity

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calcium dihydroxide:

Acute oral toxicity : LD50 (Rat, female): > 2.000 mg/kg
Method: OECD Test Guideline 425
GLP: yes
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 6,04 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
GLP: yes

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.500 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

n-hexane:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 259,35 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): 3.350 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

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

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Acute dermal toxicity : Symptoms: Redness, Local irritation

butane:

Acute inhalation toxicity : LC50 (Rat): 658 mg/l
Exposure time: 4 h
Test atmosphere: gas

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titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : (Rat): > 5,09 mg/l
Method: OECD Test Guideline 403
GLP: no

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks : This information is not available.

Components:

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

Species : Rabbit
Assessment : Irritating to skin.
Method : OECD Test Guideline 404
Result : Irritating to skin.

calcium dihydroxide:

Species : human skin
Assessment : Irritating to skin.
Method : OECD Test Guideline 431
Result : Irritating to skin.
GLP : yes

Species : Rabbit
Assessment : Irritating to skin.
Method : OECD Test Guideline 404
Result : Irritating to skin.
GLP : yes

n-hexane:

Species : Rabbit
Assessment : Irritating to skin.
Method : OECD Test Guideline 404
Result : Irritating to skin.

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Species : Rabbit
Assessment : Irritating to skin.
Result : Irritating to skin.

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Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Species	: reconstructed human epidermis (RhE)
Exposure time	: 15 min
Assessment	: Irritating to skin.
Method	: OECD Test Guideline 439
Result	: Irritating to skin.
GLP	: yes

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

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

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : This information is not available.

Components:

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

Species	: Rabbit
Assessment	: No eye irritation
Result	: No eye irritation

calcium dihydroxide:

Species	: Rabbit
Assessment	: Risk of serious damage to eyes.
Method	: OECD Test Guideline 405
Result	: Risk of serious damage to eyes.
GLP	: yes

n-hexane:

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

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Species	: Rabbit
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Assessment	:	Irritating to eyes.
Method	:	OECD Test Guideline 405
Result	:	Irritating to eyes.

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Species	:	Bovine cornea
Exposure time	:	10 min
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 437
Result	:	No eye irritation
GLP	:	yes

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

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

Respiratory or skin sensitisation

Skin sensitisation

Based on available data, the classification criteria are not met.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Product:

Remarks	:	This information is not available.
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Components:

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

Test Type	:	Maximisation Test
Exposure routes	:	Dermal
Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

calcium dihydroxide:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.
GLP	:	yes

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n-hexane:

Species	: Mouse
Assessment	: Does not cause skin sensitisation.
Method	: OECD Test Guideline 429
Result	: Does not cause skin sensitisation.

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Assessment	: Does not cause skin sensitisation.
Result	: Does not cause skin sensitisation.

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Test Type	: Local lymph node assay (LLNA)
Species	: Mouse
Assessment	: The product is a skin sensitizer, sub-category 1B.
Method	: OECD Test Guideline 429
Result	: The product is a skin sensitizer, sub-category 1B.
GLP	: yes

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Species	: Mouse
Assessment	: Does not cause skin sensitisation.
Method	: OECD Test Guideline 429
Result	: Does not cause skin sensitisation.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Product:

Genotoxicity in vitro	: Remarks: No data available
Genotoxicity in vivo	: Remarks: No data available

Components:

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

Genotoxicity in vitro	: Test Type: Chromosome aberration test in vitro Test system: Rodent cell line Method: OECD Test Guideline 473 Result: negative
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calcium dihydroxide:

Genotoxicity in vitro	: Test Type: Ames test
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Method: OECD Test Guideline 471

Result: negative

GLP: yes

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: negative

GLP: yes

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

GLP: yes

n-hexane:

Germ cell mutagenicity-
Assessment : Weight of evidence does not support classification as a germ
cell mutagen.

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show
mutagenic effects.

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: in vitro micronucleus test
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 490
Result: negative
GLP: yes

Germ cell mutagenicity- : Weight of evidence does not support classification as a germ

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Assessment cell mutagen.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

Based on available data, the classification criteria are not met.

Product:

Remarks : No data available

Components:

calcium dihydroxide:

Carcinogenicity -
Assessment : No evidence of carcinogenicity in animal studies.

n-hexane:

Carcinogenicity -
Assessment : Weight of evidence does not support classification as a carcinogen

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Carcinogenicity -
Assessment : No evidence of carcinogenicity in animal studies.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Carcinogenicity -
Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Product:

Effects on fertility : Remarks: No data available

Effects on foetal
development : Remarks: No data available

Components:

calcium dihydroxide:

Reproductive toxicity -
Assessment : - Fertility -

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No toxicity to reproduction
- Teratogenicity -
No effects on or via lactation

n-hexane:

Reproductive toxicity - : - Fertility -
Assessment
Suspected human reproductive toxicant

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Reproductive toxicity - : - Fertility -
Assessment
No toxicity to reproduction
- Teratogenicity -
No toxicity to reproduction

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Reproductive toxicity - : - Fertility -
Assessment
Animal testing did not show any effects on fertility.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Reproductive toxicity - : - Fertility -
Assessment
No toxicity to reproduction
- Teratogenicity -
No effects on or via lactation

STOT - single exposure

May cause drowsiness or dizziness.

Product:

Remarks : No data available

Components:

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

Assessment : May cause drowsiness or dizziness.

calcium dihydroxide:

Assessment : May cause respiratory irritation.

n-hexane:

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Exposure routes : Inhalation
Target Organs : Central nervous system
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

Product:

Remarks : No data available

Components:

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

Exposure routes : inhalation (vapour)
Assessment : No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

n-hexane:

Target Organs : Central nervous system
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Exposure routes : Ingestion
Assessment : May cause damage to organs through prolonged or repeated exposure.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Product:

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Remarks : This information is not available.

Components:

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Species	: Rat, male and female
NOAEL	: 100 mg/kg
Application Route	: oral (gavage)
Exposure time	: 28 d
Number of exposures	: daily
Method	: OECD Test Guideline 422
GLP	: yes
Remarks	: Not classified due to data which are conclusive although insufficient for classification.

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

May be fatal if swallowed and enters airways.

Components:

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

May be fatal if swallowed and enters airways.

n-hexane:

May be fatal if swallowed and enters airways.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Based on available data, the classification criteria are not met.

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.

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Further information

Product:

Remarks : Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

Components:

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Remarks : Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

Components:

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 22 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 3 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EbC50 (Pseudokirchneriella subcapitata (green algae)): 26 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

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Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

calcium dihydroxide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 50,6 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 49,1 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 184,57 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

n-hexane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 12,51 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 21,85 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 9,285 mg/l
Exposure time: 72 h

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 0,1 - 1 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 0,1 - 1 mg/l
Exposure time: 48 h

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Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 0,01 - 0,1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC50: 1,41 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Remarks: May cause long-term adverse effects in the aquatic environment.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition

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Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

Components:

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

Biodegradability : Result: Readily biodegradable.

calcium dihydroxide:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

n-hexane:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: rapidly biodegradable
Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge

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Result: rapidly biodegradable
Biodegradation: 65 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
GLP: yes

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Biodegradability : Result: Not rapidly biodegradable
Biodegradation: 11 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

propane:

Partition coefficient: n-octanol/water : log Pow: 2,36

calcium dihydroxide:

Partition coefficient: n-octanol/water : log Pow: 0,05

n-hexane:

Bioaccumulation : Bioconcentration factor (BCF): 501,19

Partition coefficient: n-octanol/water : log Pow: 3,42 - 5,8 (20 °C)
pH: 7

Amines, N-C16-C18-alkyl-(evennumbered, C18 unsaturated) propane-1,3-diaminium di[(9Z)-octadec-9-enoate]:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

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

butane:

Partition coefficient: n-octanol/water : log Pow: 2,89
Method: OECD Test Guideline 107

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12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: 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.

Components:

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Assessment : Non-classified vPvB substance. Non-classified PBT substance

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

Product:

Additional ecological information : Toxic to aquatic life with long lasting effects.

Components:

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Additional ecological information : May cause long lasting harmful effects to aquatic life.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Product : Do not dispose of with domestic refuse.
Dispose of as hazardous waste in compliance with local and national regulations.
- Waste codes should be assigned by the user based on the application for which the product was used.
- Contaminated packaging : Packaging that is not properly emptied must be disposed of as the unused product.
Offer empty spray cans to an established disposal company.
Pressurized container: Do not pierce or burn, even after use.
- The following Waste Codes are only suggestions:
- Waste Code : unused product, packagings not completely emptied
16 05 04*, gases in pressure containers (including halons)
containing hazardous substances

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
(naphtha (petroleum), hydrotreated light, fatty amine derivative)
- IATA : Aerosols, flammable

14.3 Transport hazard class(es)

Class	Subsidiary risks
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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
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

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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 must be considered:: Number on list 40 This substance/mixture shall not be used in aerosol dispensers intended for supply to the general public for entertainment and decorative purposes. Number on list 75 If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). (EU SVHC)	: n-hexane
Regulation (EU) No 2024/590 on substances that deplete the ozone layer (EC 2024/590)	: Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast) (EU POP)	: Not applicable
Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	: Not applicable

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(EU PIC)

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

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : 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. P3a FLAMMABLE AEROSOLS

E2 ENVIRONMENTAL HAZARDS

18 Liquefied flammable gases (including LPG) and natural gas

P2

Installations classified for the protection of the environment (Environment Code R511-9) : 4320, 4511, 4718, 4310, 4734

Occupational Illnesses (R-461-3, France) : 84, 36, 59, 49, 49 bis, 25

Reinforced medical supervision (R4624-23) : The product has no CMR properties category 1, 1A or 1B

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 69,64 %

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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

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H220	: Extremely flammable gas.
H225	: Highly flammable liquid and vapour.
H280	: Contains gas under pressure; may explode if heated.
H304	: May be fatal if swallowed and enters airways.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
H361f	: Suspected of damaging fertility.
H372	: Causes damage to organs through prolonged or repeated exposure.
H373	: May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	: Very toxic to aquatic life.
H411	: Toxic to aquatic life with long lasting effects.
H413	: May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

**	: Route of exposure cannot be excluded: For certain hazard classes, e.g. STOT, the route of exposure should be indicated in the hazard statement only if it is conclusively proven that no other route of exposure can cause the hazard in accordance to the criteria in Annex I. Under Directive 67/548/EEC the route of exposure was indicated for classifications with R48 when there was data justifying the classification for this route of exposure. The classification under 67/548/EEC indicating the route of exposure has been translated into the corresponding class and category according to this Regulation, but with a general hazard statement not specifying the route of exposure as the necessary information is not available.
***	: Hazard statements for reproductive toxicity: Hazard statements H360 and H361 indicate a general concern for effects on fertility and/or development: 'May damage/Suspected of damaging fertility or the unborn child'. According to the criteria, the general hazard statement can be

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replaced by the hazard statement indicating the specific effect of concern in accordance with Section 1.1.2.1.2. When the other differentiation is not mentioned, this is due to evidence proving no such effect, inconclusive data or no data and the obligations in Article 4(3) shall apply for that differentiation. In order not to lose information from the harmonised classifications for fertility and developmental effects under Directive 67/548/EEC, the classifications have been translated only for those effects classified under that Directive

Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Asp. Tox. : Aspiration hazard
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Flam. Gas : Flammable gases
Flam. Liq. : Flammable liquids
Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Note S : This substance may not require a label according to Article 17 (see Section 1.3 of Annex I) (Table 3).

Note U (Table 3) : When put on the market gases have to be classified as "Gases under pressure", in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case. The following codes are assigned: Press. Gas (Comp.) Press. Gas (Liq.) Press. Gas (Ref. Liq.) Press. Gas (Diss.) Aerosols shall not be classified as gases under pressure (See Annex I, Part 2, Section 2.3.2.1, Note 2).

Press. Gas : Gases under pressure
Repr. : Reproductive toxicity
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT RE : Specific target organ toxicity - repeated exposure
STOT SE : Specific target organ toxicity - single exposure
2006/15/EC : Europe. Indicative occupational exposure limit values
2017/164/EU : Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values

FR VLE : France. Occupational Exposure Limits
2006/15/EC / TWA : Limit Value - eight hours
2017/164/EU / STEL : Short term exposure limit
2017/164/EU / TWA : Limit Value - eight hours
FR VLE / VME : Time Weighted Average
FR VLE / VLCT (VLE) : Short Term Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; BGW - Biological Limit Values; bw - Body weight; CLP - Classification

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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 Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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); LSPN - List of Hazardous Notified Substances (Chile); 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 - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Aerosol 1	H222, H229
Skin Irrit. 2	H315
Eye Dam. 1	H318
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 1	H304
Aquatic Chronic 2	H411

Classification procedure:

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

|| Relevant changes compared to the last edition are highlighted at the left margin. This version replaces all previous editions.

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