

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - ES
(Commission Regulation (EU) 2020/878)



OKS 589

Version	Revision Date:	Date of last issue: 20.08.2018	Print Date:
1.2	11.05.2022	Date of first issue: 09.07.2016	12.05.2022

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

1.1 Product identifier

Product name : OKS 589

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

Use of the Sub-
stance/Mixture : Lubricant

Recommended restrictions : Restricted to professional users.
on use

1.3 Details of the supplier of the safety data sheet

Company : OKS Spezialschmierstoffe GmbH
Ganghoferstr. 47
D-82216 Maisach-Gernlinden
Tel.: +49 8142 3051 500
Fax.: +49 8142 3051 599
info@oks-germany.com

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

National contact :

1.4 Emergency telephone number

Emergency telephone num- : +34 91 562 04 20
ber

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2 H225: Highly flammable liquid and vapour.

Serious eye damage, Category 1 H318: Causes serious eye damage.

Specific target organ toxicity - single ex- H336: May cause drowsiness or dizziness.
posure, Category 3, Central nervous
system

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:			
Signal word	:	Danger		
Hazard statements	:	H225 H318 H336	Highly flammable liquid and vapour. Causes serious eye damage. May cause drowsiness or dizziness.	
Supplemental Hazard Statements	:	EUH066	Repeated exposure may cause skin dryness or cracking.	
Precautionary statements	:	Prevention: P210 P233 P280	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Wear protective gloves/ protective clothing/ eye protection/ face protection.	
		Response: P305 + P351 + P338 + P310 P370 + P378	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. In case of fire: Use alcohol-resistant foam, carbon dioxide or water mist to extinguish.	
		Storage: P403 + P235	Store in a well-ventilated place. Keep cool.	

Hazardous components which must be listed on the label:

n-butyl acetate

butanone

ethyl acetate

butan-1-ol

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

Chemical nature : Solvent mixture
epoxy resin
solid lubricant
PTFE
Molybdenum disulfide

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
n-butyl acetate	123-86-4 204-658-1 607-025-00-1 01-2119485493-29-XXXX	Flam. Liq.3; H226 STOT SE3; H336; EUH066		>= 30 - < 50
butanone	78-93-3 201-159-0 606-002-00-3 01-2119457290-43-XXXX	Flam. Liq.2; H225 Eye Irrit.2; H319 STOT SE3; H336; EUH066		>= 20 - < 30
ethyl acetate	141-78-6 205-500-4 607-022-00-5 01-21119475103-46-XXXX	Flam. Liq.2; H225 Eye Irrit.2; H319 STOT SE3; H336; EUH066		>= 10 - < 20
butan-1-ol	71-36-3 200-751-6	Flam. Liq.3; H226 Acute Tox.4; H302 Skin Irrit.2; H315		>= 3 - < 10

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	603-004-00-6 01-2119484630-38-XXXX	Eye Dam.1; H318 STOT SE3; H336 STOT SE3; H335		
aluminium dihydrogen triphosphate	13939-25-8 237-714-9 01-2119970565-28-XXXX	Eye Irrit.2; H319		>= 1 - < 10
ethylene glycol mono-butyl ether	111-76-2 203-905-0 603-014-00-0 01-2119475108-36-XXXX	Acute Tox.4; H302 Acute Tox.4; H332 Skin Irrit.2; H315 Eye Irrit.2; H319	ATE (Oral): 1.200 mg/kg;	>= 1 - < 10
Substances with a workplace exposure limit :				
molybdenum disulphide	1317-33-5 215-263-9	Not classified		>= 1 - < 10
Graphite	7782-42-5 231-955-3	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 skin thoroughly with soap and water or use recognized

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skin cleanser.

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.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
Do NOT induce vomiting.
Rinse mouth with water.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Inhalation may provoke the following symptoms:
Unconsciousness
Dizziness
Drowsiness
Headache
Nausea
Tiredness
Skin contact may provoke the following symptoms:
Erythema

Risks : Central nervous system depression
Can be absorbed through skin.

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 : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not let product enter drains.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Hazardous combustion products : Carbon oxides
Sulphur oxides

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Oxides of phosphorus
Halogenated compounds
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. Use personal protective equipment. 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.

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). 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

- Advice on safe handling : Use only in an area containing explosion proof equipment.

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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.
Ensure all equipment is electrically grounded before beginning transfer operations.
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.
Do not enter areas where used or stored until adequately ventilated.
Do not repack.
Do not re-use empty containers.
These safety instructions also apply to empty packaging which may still contain product residues.
Keep container closed when not in use.

Advice on protection against fire and explosion : Keep away from heat and sources of ignition.

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 : Store in original container. Keep container closed when not in use. Keep in a cool place away from oxidizing agents. Keep in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with the particular national regulations. Keep in properly labelled containers.

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
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n-butyl acetate	123-86-4	VLA-ED	50 ppm 241 mg/m ³	ES VLA (2021-04-01)
		VLA-EC	150 ppm 724 mg/m ³	ES VLA (2021-04-01)
		STEL	150 ppm 723 mg/m ³	2019/1831/E U (2019-10-31)
Further information: Indicative				
		TWA	50 ppm 241 mg/m ³	2019/1831/E U (2019-10-31)
Further information: Indicative				
butanone	78-93-3	TWA	200 ppm 600 mg/m ³	2000/39/EC (2000-06-16)
Further information: Indicative				
		STEL	300 ppm 900 mg/m ³	2000/39/EC (2000-06-16)
Further information: Indicative				
		VLA-ED	200 ppm 600 mg/m ³	ES VLA (2011-03-03)
		VLA-EC	300 ppm 900 mg/m ³	ES VLA (2011-03-03)
ethyl acetate	141-78-6	VLA-ED	200 ppm 734 mg/m ³	ES VLA (2018-02-19)
		STEL	400 ppm 1.468 mg/m ³	2017/164/EU (2017-02-01)
Further information: Indicative				
		TWA	200 ppm 734 mg/m ³	2017/164/EU (2017-02-01)
Further information: Indicative				
		VLA-EC	400 ppm 1.468 mg/m ³	ES VLA (2018-02-19)
molybdenum di- sulphide	1317-33-5	VLA-ED (inhala- ble fraction)	10 mg/m ³ (Molybdenum)	ES VLA (2015-02-19)
		VLA-ED (respira- ble fraction)	3 mg/m ³ (Molybdenum)	ES VLA (2015-02-19)
butan-1-ol	71-36-3	VLA-EC	50 ppm 154 mg/m ³	ES VLA (2014-01-01)
		VLA-ED	20 ppm 61 mg/m ³	ES VLA (2014-01-01)
ethylene glycol monobutyl ether	111-76-2	TWA	20 ppm 98 mg/m ³	2000/39/EC (2000-06-16)
Further information: Identifies the possibility of significant uptake through the skin, Indicative				
		STEL	50 ppm 246 mg/m ³	2000/39/EC (2000-06-16)
Further information: Identifies the possibility of significant uptake through the skin, Indicative				
		VLA-ED	20 ppm 98 mg/m ³	ES VLA (2012-01-01)
Further information: Skin				

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		VLA-EC	50 ppm 245 mg/m ³	ES VLA (2012-01-01)
	Further information: Skin			
Graphite	7782-42-5	VLA-ED (respirable dust fraction)	2 mg/m ³	ES VLA (2017-02-01)

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
butanone	78-93-3	methyl ethyl ketone: 2 mg/l (Urine)	End of workday	ES VLB (2011-03-03)
ethylene glycol monobutyl ether	111-76-2	butoxy acetic acid: 200 mg/g Creatinine (Urine)	End of workday	ES VLB (2011-03-03)

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

Substance name	End Use	Exposure routes	Potential health effects	Value
n-butyl acetate	Workers	Inhalation	Long-term systemic effects	300 mg/m ³
	Workers	Inhalation	Acute systemic effects	600 mg/m ³
	Workers	Dermal	Long-term local effects	11 mg/cm ²
butanone	Workers	Inhalation	Long-term systemic effects	600 mg/m ³
	Workers	Skin contact	Long-term systemic effects	1161 mg/kg
butan-1-ol	Workers	Inhalation	Long-term local effects	310 mg/m ³
	Workers	Inhalation	Long-term systemic effects	98 mg/m ³
	Workers	Inhalation	Acute systemic effects	1091 mg/m ³
ethylene glycol monobutyl ether	Workers	Skin contact	Long-term systemic effects	125 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	89 mg/kg bw/day
	Workers	Inhalation	Acute local effects	246 mg/m ³
Graphite	Workers	Inhalation	Long-term local effects	1,2 mg/m ³

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

Substance name	Environmental Compartment	Value
n-butyl acetate	Fresh water	0,18 mg/l
	Marine water	0,018 mg/l
	Microbiological Activity in Sewage Treatment Systems	35,6 mg/l
	Fresh water sediment	0,981 mg/kg
	Marine sediment	0,0981 mg/kg
	Soil	0,09 mg/kg

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butanone	Fresh water	55,8 mg/l
	Marine water	55,8 mg/l
	Intermittent use/release	55,8 mg/l
	Sewage treatment plant	709 mg/l
	Fresh water sediment	284,7 mg/kg
	Marine sediment	284,7 mg/kg
butan-1-ol	Soil	22,5 mg/kg
	Fresh water	0,082 mg/l
	Marine water	0,008 mg/l
	Intermittent use/release	2,25 mg/l
	Microbiological Activity in Sewage Treatment Systems	2476 mg/l
	Fresh water sediment	0,324 mg/kg dry weight (d.w.)
ethylene glycol monobutyl ether	Marine sediment	0,032 mg/kg dry weight (d.w.)
	Soil	0,017 mg/kg dry weight (d.w.)
	Fresh water	8,8 mg/l
	Marine water	0,88 mg/l
	Sewage treatment plant	463 mg/l
	Fresh water sediment	34,6 mg/kg
	Marine sediment	3,46 mg/kg
	Soil	2,33 mg/kg
	Intermittent use/release	26,4 mg/l

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 protection : Tightly fitting safety goggles

Hand protection

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.

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : black

Odour : characteristic

Odour Threshold : No data available

Melting point/range : No data available

Boiling point/boiling range : 76 °C

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Flash point : 0,5 °C(1.013 hPa)
Method: Abel-Pensky, closed cup

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : Not applicable
substance/mixture is non-polar/aprotic

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

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Solubility(ies)
Water solubility : immiscible

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Vapour pressure : < 1.100 hPa (20 °C)

Relative density : 1,0 (20 °C)
Reference substance: Water
The value is calculated

Density : 1,00 g/cm³
(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 : No data available

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.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.
Strong sunlight for prolonged periods.

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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

Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Remarks: Effects due to ingestion may include:

Symptoms: Central nervous system depression

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Remarks: Respiration of solvent vapour may cause dizziness.

Symptoms: Inhalation may provoke the following symptoms: Dizziness, Drowsiness, Vomiting, Fatigue, Vertigo, Central nervous system depression

Acute dermal toxicity : Remarks: Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.

Symptoms: Skin disorders

Components:

n-butyl acetate:

Acute oral toxicity : LD50 (Rat): 10.768 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 21 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity

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Acute dermal toxicity : LD50 (Rabbit): > 17.600 mg/kg

butanone:

Acute oral toxicity : LD50 (Rat): 2.193 mg/kg
Method: OECD Test Guideline 423
GLP: yes

Acute inhalation toxicity : LC50 (Rat): 34 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg
Method: OECD Test Guideline 402

ethyl acetate:

Acute oral toxicity : LD50 (Rat): 5.620 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 20.000 mg/kg

butan-1-ol:

Acute oral toxicity : LD50 (Rat): 2.292 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat): > 17,76 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 3.430 mg/kg
Method: OECD Test Guideline 402
GLP: yes

aluminium dihydrogen triphosphate:

Acute oral toxicity : LD50 Oral (Rat): > 2.500 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 3,46 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

ethylene glycol monobutyl ether:

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Acute oral toxicity : Acute toxicity estimate: 1.200 mg/kg
Method: Converted acute toxicity point estimate

Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : Assessment: The component/mixture is moderately toxic after short term inhalation.

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

molybdenum disulphide:

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

Acute dermal toxicity : LD50 (Rat): > 16.000 mg/kg

Graphite:

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

Skin corrosion/irritation

Product:

Remarks : This information is not available.

Components:

n-butyl acetate:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : Repeated exposure may cause skin dryness or cracking.

butanone:

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

Result : Repeated exposure may cause skin dryness or cracking.

ethyl acetate:

Species : Rabbit
Result : Mild skin irritation

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Result : Repeated exposure may cause skin dryness or cracking.

butan-1-ol:

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

aluminium dihydrogen triphosphate:

Assessment : No skin irritation
Result : No skin irritation

ethylene glycol monobutyl ether:

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

molybdenum disulphide:

Assessment : No skin irritation
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Remarks : Risk of serious damage to eyes.

Components:

n-butyl acetate:

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

butanone:

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

ethyl acetate:

Assessment : Irritating to eyes.
Result : Irritating to eyes.

butan-1-ol:

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

aluminium dihydrogen triphosphate:

Assessment : Irritating to eyes.
Result : Irritating to eyes.

ethylene glycol monobutyl ether:

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

molybdenum disulphide:

Assessment : No eye irritation
Result : No eye irritation

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

n-butyl acetate:

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

butanone:

Test Type : Buehler Test
Species : Guinea pig
Assessment : Does not cause skin sensitisation.
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.
GLP : yes

ethyl acetate:

Test Type : Maximisation Test
Exposure routes : Dermal
Species : Guinea pig
Assessment : Does not cause skin sensitisation.

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Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.

butan-1-ol:

Species : Mouse
Assessment : Did not cause sensitisation on laboratory animals.
Method : OECD Test Guideline 429
Result : Did not cause sensitisation on laboratory animals.

aluminium dihydrogen triphosphate:

Assessment : Did not cause sensitisation on laboratory animals.
Result : Did not cause sensitisation on laboratory animals.

ethylene glycol monobutyl ether:

Test Type : Maximisation Test
Species : Guinea pig
Assessment : Did not cause sensitisation on laboratory animals.
Result : Did not cause sensitisation on laboratory animals.

molybdenum disulphide:

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

Germ cell mutagenicity

Product:

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

Components:

n-butyl acetate:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster cells
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity- As- : Tests on bacterial or mammalian cell cultures did not show

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Components:

n-butyl acetate:

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: inhalation (vapour)
General Toxicity - Parent: NOAEC: 750 mg/l
General Toxicity F1: NOAEC: 750 mg/l
General Toxicity F2: NOAEC: 750 mg/l
Method: OECD Test Guideline 416
Result: Embryotoxic effects and adverse effects on the offspring were detected.

Reproductive toxicity - Assessment : - Fertility -
No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.
- Teratogenicity -
No toxicity to reproduction

butanone:

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

aluminium dihydrogen triphosphate:

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

ethylene glycol monobutyl ether:

Reproductive toxicity - Assessment : - Fertility -
No toxicity to reproduction
- Teratogenicity -
Animal testing did not show any effects on foetal development.

STOT - single exposure

Components:

n-butyl acetate:

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.

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butanone:

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

ethyl acetate:

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

butan-1-ol:

Exposure routes : Inhalation
Target Organs : Respiratory system
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

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.

aluminium dihydrogen triphosphate:

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

ethylene glycol monobutyl ether:

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

molybdenum disulphide:

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

STOT - repeated exposure

Components:

n-butyl acetate:

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

butanone:

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

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ethyl acetate:

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

butan-1-ol:

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

aluminium dihydrogen triphosphate:

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

ethylene glycol monobutyl ether:

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

molybdenum disulphide:

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

Repeated dose toxicity

Product:

Remarks : This information is not available.

Components:

n-butyl acetate:

Species : Rat
NOAEL : 125 mg/kg
Application Route : Oral

Aspiration toxicity

Product:

This information is not available.

Components:

n-butyl acetate:

No aspiration toxicity classification

butanone:

No aspiration toxicity classification

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butan-1-ol:

No aspiration toxicity classification

aluminium dihydrogen triphosphate:

No aspiration toxicity classification

ethylene glycol monobutyl ether:

No aspiration toxicity classification

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.

Further information

Product:

Remarks : Information given is based on data on the components and the toxicology of similar products.

Components:

aluminium dihydrogen triphosphate:

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

molybdenum disulphide:

Remarks : Information given is based on data on the components and the toxicology of similar products.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: Harmful to aquatic organisms.

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

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

Toxicity to microorganisms :
Remarks: No data available

Components:

n-butyl acetate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 18 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 44 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 397 mg/l
Exposure time: 72 h
Test Type: static test

Toxicity to microorganisms : EC50 (Tetrahymena pyriformis): 356 mg/l
Exposure time: 40 h
Test Type: Growth inhibition

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 23 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: Reproduction Test
GLP: yes

butanone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2.993 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 308 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1.972 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (Pseudomonas putida): 1.150 mg/l
Exposure time: 16 h
Test Type: static test
Method: DIN 38 412 Part 8

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ethyl acetate:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 212,5 mg/l
Exposure time: 96 h
Test Type: static test
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 154 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 2.500 mg/l
Exposure time: 96 h

butan-1-ol:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1.376 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)): 1.328 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)): 225 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes
- Toxicity to microorganisms : EC10 (Pseudomonas putida): 2.476 mg/l
Exposure time: 17 h
Test Type: static test
Method: DIN 38 412 Part 8
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 4,1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

ethylene glycol monobutyl ether:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.474 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

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- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.550 mg/l
Exposure time: 48 h
Test Type: Immobilization
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1.840 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Toxicity to fish (Chronic toxicity) : NOEC: > 100 mg/l
Exposure time: 21 d
Species: Danio rerio (zebra fish)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 100 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: Reproduction Test
Method: OECD Test Guideline 211

molybdenum disulphide:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h

12.2 Persistence and degradability

Product:

- Biodegradability : Remarks: No data available
- Physico-chemical removability : Remarks: No data available

Components:

n-butyl acetate:

- Biodegradability : Test Type: Primary biodegradation
Result: rapidly biodegradable
Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

butanone:

- Biodegradability : Test Type: aerobic

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Inoculum: activated sludge
Result: rapidly biodegradable
Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
GLP: yes

ethyl acetate:

Biodegradability : Result: rapidly biodegradable

butan-1-ol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: rapidly biodegradable
Biodegradation: > 92 %
Exposure time: 28 d

ethylene glycol monobutyl ether:

Biodegradability : Test Type: aerobic
Result: rapidly biodegradable
Biodegradation: 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

Components:

n-butyl acetate:

Partition coefficient: n-octanol/water : log Pow: 2,3 (25 °C)
pH: 7
Method: OECD Test Guideline 117
GLP: yes

butanone:

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: 0,3 (40 °C)
Method: OECD Test Guideline 117
GLP: yes

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ethyl acetate:

Partition coefficient: n-octanol/water : log Pow: 0,68 (25 °C)

butan-1-ol:

Partition coefficient: n-octanol/water : log Pow: 1 (25 °C)
pH: 7
Method: OECD Test Guideline 117
GLP: yes

ethylene glycol monobutyl ether:

Bioaccumulation : Bioconcentration factor (BCF): 2,5

Partition coefficient: n-octanol/water : log Pow: 0,81 (25 °C)
Method: OECD Test Guideline 107

Graphite:

Partition coefficient: n-octanol/water : Remarks: No data available

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:

n-butyl acetate:

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

butanone:

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

12.6 Endocrine disrupting properties

Product:

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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 : No information on ecology is available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
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.
Dispose of waste product or used containers according to local regulations.

The following Waste Codes are only suggestions:

Waste Code : used product, unused product
08 01 11*, waste paint and varnish containing organic solvents or other hazardous substances

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

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 1263
RID : UN 1263
IMDG : UN 1263

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IATA : UN 1263

14.2 UN proper shipping name

ADR : PAINT

RID : PAINT

IMDG : PAINT

IATA : Paint

14.3 Transport hazard class(es)

ADR : 3

RID : 3

IMDG : 3

IATA : 3

14.4 Packing group

ADR

Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3
Tunnel restriction code : (D/E)

RID

Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3

IMDG

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

IATA (Cargo)

Packing instruction (cargo aircraft) : 364
Packing instruction (LQ) : Y341
Packing group : II
Labels : Flammable Liquids

IATA (Passenger)

Packing instruction (passenger aircraft) : 353
Packing instruction (LQ) : Y341
Packing group : II
Labels : Flammable Liquids

14.5 Environmental hazards

ADR

Environmentally hazardous : no

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RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

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

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

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

ethylene glycol monobutyl ether
(Number on list 3)
formaldehyde (Number on list 72, 28)
- REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). (EU SVHC) : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
- REACH - List of substances subject to authorisation (Annex XIV) (EU. REACH-Annex XIV) : Not applicable
- Regulation (EC) No 1005/2009 on substances that deplete the ozone layer (EC 1005/2009) : Not applicable
- Regulation (EU) 2019/1021 on persistent organic pollutants (recast) (EU POP) : Not applicable
- Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals (EU PIC) : Not applicable

: P5c

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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. P5c FLAMMABLE LIQUIDS

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 69,92 %
Volatile CMR compounds: 0,01 %

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

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

EUH066	: Repeated exposure may cause skin dryness or cracking.
H225	: Highly flammable liquid and vapour.
H226	: Flammable liquid and vapour.
H302	: Harmful if swallowed.
H315	: Causes skin irritation.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
EUH066	: Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2017/164/EU	: Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values

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2019/1831/EU	:	Europe. Commission Directive 2019/1831/EU establishing a fifth list of indicative occupational exposure limit values
ES VLA	:	Spain. Environmental Limits for exposure to Chemical agents - Table 1: Occupational Exposure Values
ES VLB	:	Occupational Exposure Limits for Chemical Agents in Spain - Biological Exposure Values
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
2017/164/EU / STEL	:	Short term exposure limit
2017/164/EU / TWA	:	Limit Value - eight hours
2019/1831/EU / TWA	:	Limit Value - eight hours
2019/1831/EU / STEL	:	Short term exposure limit
ES VLA / VLA-ED	:	Environmental Daily Limit Value
ES VLA / VLA-EC	:	Environmental Short Term Value

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 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:

Flam. Liq. 2 H225

Classification procedure:

Based on product data or assessment

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Eye Dam. 1	H318	Calculation method
STOT SE 3	H336	Calculation method

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