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

1.1 Product identifier

Product name : OKS 2101

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

Use of the : Anticorrosion additive

Substance/Mixture

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-Gernlinden

Deutschland

Tel.: +49 8142 3051 500 Fax: +49 8142 3051 599 info@oks-germany.com

E-mail address of person responsible for the SDS

mcm@oks-germany.com

National contact

1.4 Emergency telephone number

Emergency telephone

: +49 8142 3051 517

number

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aerosols, Category 1 H222: Extremely flammable aerosol.

H229: Pressurised container: May burst if heated.

Skin irritation, Category 2 H315: Causes skin irritation.

Specific target organ toxicity - single exposure, Category 3, Central nervous

system

H336: May cause drowsiness or dizziness.



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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

airwavs.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P210 Keep away from heat, hot surfaces, sparks,

open flames and other ignition sources. No

smoking.

P211 Do not spray on an open flame or other

ignition source.

P251 Do not pierce or burn, even after use.
P273 Avoid release to the environment.

Response:

P301 + P310 IF SWALLOWED: 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:

pentane

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics



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

2.3 Other hazards

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

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 : Active substance with propellant

Solvent

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
pentane	109-66-0 203-692-4 601-006-00-1 01-2119459286-30- XXXX	Flam. Liq.2; H225 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411		>= 10 - < 20
Hydrocarbons, C9- C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	265-150-3 01-2119463258-33	Flam. Liq.3; H226 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411; EUH066	Note P	>= 2,5 - < 10
Hydrocarbons, C11-		Flam. Liq.3; H226		>= 1 - < 10



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C12, isoalkanes, < 2% aromatics	918-167-1	Asp. Tox.1; H304; EUH066	Note P	
	01-2119472146-39- XXXX			
Hydrocarbons, C6, isoalkanes, <5% n-hexane	931-254-9 01-2119484651-34- XXXX	Flam. Liq.2; H225 Skin Irrit.2; H315 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411	Note P	>= 2,5 - < 10
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	926-605-8 01-2119486291-36- XXXX	Flam. Liq.2; H225 Skin Irrit.2; H315 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411	Note P	>= 2,5 - < 10
2-butoxyethanol	111-76-2 203-905-0 603-014-00-0 01-2119475108-36- XXXX	Acute Tox.4; H302 Acute Tox.3; H331 Skin Irrit.2; H315 Eye Irrit.2; H319	ATE (Oral): 1.200 mg/kg; ATE (Inhalation):	>= 1 - < 10
			3 mg/l;	
Substances with a work		T= : : : :		T
butane	106-97-8 203-448-7 601-004-00-0 01-2119474691-32- XXXX	Flam. Gas1; H220 Press. GasCompr. Gas; H280	Note U (table 3.1), Note C	>= 30 - < 50
propane	74-98-6 200-827-9 601-003-00-5 01-2119486944-21- XXXX	Flam. Gas1A; H220 Press. GasCompr. Gas; H280	Note U (table 3.1)	>= 10 - < 20
isobutane	75-28-5 200-857-2 601-004-00-0 01-2119485395-27-	Flam. Gas1A; H220 Press. GasCompr. Gas; H280	Note U (table 3.1), Note C	>= 1 - < 10



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XXXX

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.

Take off all contaminated clothing immediately. In case of skin contact

Wash off immediately with soap and plenty of water.

Get medical attention immediately if irritation develops and

persists.

Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact Rinse immediately with plenty of water, also under the eyelids,

for at least 10 minutes.

If eye irritation persists, consult a specialist.

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.

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:



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Erythema

Risks : Central nervous system depression

Risk of product entering the lungs on vomiting after ingestion.

Health injuries may be delayed.

Causes skin irritation.

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

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.

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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

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.

handling the product.

Wash hands and face before breaks and immediately after

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.



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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.

Storage class (TRGS 510) : 2B, Aerosol cans and lighters

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	AGW	1.000 ppm	DE TRGS		
			2.400 mg/m3	900		
				(2006-01-01)		
	Peak-limit: ex	cursion factor (categ	ory): 4;(II)			
		MAK	1.000 ppm	DE DFG MAK		
			2.400 mg/m3	(2008-07-01)		
	Further inform	nation: Either there a	re no data for an assessmen	t of damage to		
	the embryo or	foetus, including de	velopmental neurotoxicity, or	the currently		
	available data	are not sufficient for	r classification in one of the g	roups A - C		
pentane	109-66-0	TWA	1.000 ppm	2006/15/EC		
			3.000 mg/m3	(2006-02-09)		
	Further inform	nation: Indicative				
		AGW	1.000 ppm	DE TRGS		
			3.000 mg/m3	900		
				(2010-08-04)		
	Peak-limit: ex	cursion factor (categ	ory): 2;(II)			
			compliance with the OEL ar	nd biological		
	tolerance valu	tolerance values, there is no risk of harming the unborn child				
		MAK	1.000 ppm	DE DFG MAK		
			3.000 mg/m3	(2023-07-01)		
	Further inform	nation: Damage to th	e embryo or foetus is unlikely	y when the		
	MAK value or	MAK value or the BAT value is observed				
propane	74-98-6	MAK	1.000 ppm	DE DFG MAK		



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1			1.800 mg/m3	(2006-07-01)	
	Further inform	nation: Fither there a	re no data for an assessmen		
			velopmental neurotoxicity, or		
	available data are not sufficient for classification in one of the groups A - C				
		AGW	1.000 ppm	DE TRGS	
			1.800 mg/m3	900	
			g,g	(2006-01-01)	
	Peak-limit: ex	cursion factor (categ	ory): 4;(II)	(2000 0 : 0 :)	
Hydrocarbons, C9-	Not	MAK	50 ppm	DE DFG MAK	
C11, n-alkanes,	Assigned		300 mg/m3	(2009-07-01)	
isoalkanes, cyclics,					
<2% aromatics					
			re no data for an assessmen		
			velopmental neurotoxicity, or		
	available data		r classification in one of the g		
		AGW	300 mg/m3	DE TRGS	
				900	
				(2017-11-30)	
	Peak-limit: ex	cursion factor (categ	ory): 2;(II)		
	Further inform	nation: Group exposi	ure limit for hydrocarbon solv	ent mixtures	
Hydrocarbons, C6,	Not	AGW	1.500 mg/m3	DE TRGS	
isoalkanes, <5% n-	Assigned			900	
hexane				(2009-02-16)	
	Peak-limit: ex	cursion factor (categ	lory): 2:(II)		
			ure limit for hydrocarbon solv	ent mixtures	
isobutane	75-28-5	AGW	1.000 ppm	DE TRGS	
loobatario	10200	7.0	2.400 mg/m3	900	
			2. 100 1119/1110	(2006-01-01)	
	Peak-limit: ex	cursion factor (categ	ory): 4;(II)	(
		MAK	1.000 ppm	DE DFG MAK	
			2.400 mg/m3	(2008-07-01)	
	Further inform	nation: Either there a	re no data for an assessmen		
			velopmental neurotoxicity, o		
			r classification in one of the g		
Hydrocarbons, C6-	Not	AGW	1.500 mg/m3	DE TRGS	
C7, isoalkanes,	Assigned		3	900	
cyclics, <5% n-	3 3 3			(2009-02-16)	
hexane				,	
	Peak-limit: ex	cursion factor (categ	orv): 2:(II)	L.	
			ure limit for hydrocarbon solv	ent mixtures	
2-butoxyethanol	111-76-2	TWA	20 ppm	2000/39/EC	
2 batoxyotilarior			98 mg/m3	(2000-06-16)	
	Further inform	nation: Identifies the	possibility of significant uptak		
	skin, Indicativ		possisinty of organicalit apial	to anough the	
		STEL	50 ppm	2000/39/EC	
			246 mg/m3	(2000-06-16)	
			possibility of significant uptak		
	skin, Indicativ		140		
		MAK	10 ppm	DE DFG MAK	

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		49 mg/m3	(2023-07-01)	
Further information: Danger of absorption through the skin, Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed				
	AGW	10 ppm 49 mg/m3	DE TRGS 900 (2019-03-29)	
Peak-limit: excursion factor (category): 2;(I)				
Further information: Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child				

Further occupational exposure limits

Description	Value type	Control parameters	Basis
	AGW	550 mg/m3	DE TRGS 900
Calculated according to			
TRGS 900 RCP-method			

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
2-butoxyethanol	111-76-2	butoxy acetic acid: 150 mg/g creatinine (Urine)	end of shift, for long-term exposures after several previous shifts, Immediately after exposition or after working hours	DE DFG BAT (2023-07- 01)
		butoxy acetic acid: 150 mg/g creatinine (Urine)	In case of long- term exposure: after more than one shift, Immediately after exposure or after working hours	TRGS 903 (2021-01- 13)

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

Substance name	End Use	Exposure routes	Potential health effects	Value
pentane	Workers	Inhalation	Long-term systemic effects	3000 mg/m3
	Workers	Skin contact	Long-term systemic effects	432 mg/kg
Hydrocarbons, C11- C12, isoalkanes, < 2% aromatics	Workers	Inhalation	Acute systemic effects	1286,4 mg/m3
	Workers	Inhalation	Long-term local effects	837,5 mg/m3
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Workers	Inhalation	Acute systemic effects	1286,4 mg/m3
	Workers	Inhalation	Long-term local	837,5 mg/m3



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			effects	
Hydrocarbons, C6- C7, isoalkanes, cyclics, <5% n- hexane	Workers	Inhalation	Acute systemic effects	1286,4 mg/m3
	Workers	Inhalation	Long-term local effects	837,5 mg/m3
2-butoxyethanol	Workers	Inhalation	Long-term systemic effects	98 mg/m3
	Workers	Inhalation	Acute systemic effects	1091 mg/m3
	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/m3

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

Substance name	Environmental Compartment	Value
2-butoxyethanol	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/face protection : Safety glasses with side-shields

Hand protection

Material : Nitrile 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



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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 : yellow

Odour : characteristic

Odour Threshold : No data available

Melting point/range : No data available

Boiling point/boiling range : -161 °C (1.013 hPa)

a brand of

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Flammability (solid, gas) : Extremely flammable aerosol.

Upper explosion limit / Upper

flammability limit

9,4 %(V)

Lower explosion limit / Lower

flammability limit

0,6 %(V)

Flash point : 0 °C

Method: Abel-Pensky

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 mm2/s (40 °C)

Solubility(ies)

Water solubility : insoluble

Solubility in other solvents : No data available

Partition coefficient: n-

octanol/water

No data available

Vapour pressure : 8.327 hPa (20 °C)

Relative density : 0,638 (20 °C)

Reference substance: Water The value is calculated

Density : 0,64 g/cm3

(20 °C)

Bulk density : No data available

Relative vapour density : No data available

Particle characteristics

Particle size : No data available

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9.2 Other information

Explosives : Not explosive

Oxidizing properties : No data available

Self-ignition : No data available

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.

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

Product:

Acute oral toxicity : Remarks: Effects due to ingestion may include:



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Symptoms: Central nervous system depression

Acute toxicity estimate: > 2.000 mg/kg

Method: Calculation method

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 toxicity estimate: > 20 mg/l

Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Symptoms: Redness, Local irritation

Components:

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:

Acute inhalation toxicity : Assessment: The substance or mixture is classified as specific

target organ toxicant, single exposure, category 3 with

narcotic effects.

Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:

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

Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Method: OECD Test Guideline 402

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

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

2-butoxyethanol:

Acute oral toxicity : Acute toxicity estimate: 1.200 mg/kg

Method: Acute toxicity estimate according to Regulation (EC)

No. 1272/2008

LD50 (Guinea pig): 1.414 mg/kg Method: OECD Test Guideline 401

Acute inhalation toxicity : Acute toxicity estimate: 3 mg/l

Test atmosphere: vapour

Method: Acute toxicity estimate according to Regulation (EC)

No. 1272/2008



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LC50: 3 mg/l Exposure time: 4 h Test atmosphere: vapour

Assessment: The component/mixture is 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

butane:

Acute inhalation toxicity : LC50 (Rat): 658 mg/l

Exposure time: 4 h
Test atmosphere: gas

isobutane:

Acute inhalation toxicity : LC50 (Rat): 658 mg/l

Exposure time: 4 h
Test atmosphere: gas

Skin corrosion/irritation

Product:

Remarks : Irritating to skin.

Components:

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:

Result : Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:

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

Result : Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C6, isoalkanes, <5% n-hexane:
Result : Skin irritation

Species : Rabbit Result : Skin irritation

2-butoxyethanol:

Species : Rabbit

Assessment : Irritating to skin. Result : Irritating to skin.



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



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Serious eye damage/eye irritation

Product:

Remarks : Irritating to eyes.

Components:

2-butoxyethanol:

Species : Rabbit

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

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

2-butoxyethanol:

Test Type : Maximisation Test

Species : Guinea pig

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

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Components:

2-butoxyethanol:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Remarks: In vitro tests did not show mutagenic effects

Genotoxicity in vivo : Test Type: In vivo micronucleus test

Species: Rat

Method: OECD Test Guideline 474

Result: negative

Germ cell mutagenicity-

Assessment

: In vitro tests did not show mutagenic effects



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Carcinogenicity

Product:

Remarks : No data available

Components:

2-butoxyethanol:

Carcinogenicity - : Animal testing did not show any carcinogenic effects.

Assessment

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development

Remarks: No data available

Components:

2-butoxyethanol:

Reproductive toxicity -

: - Fertility -

Assessment

No toxicity to reproduction

- Teratogenicity -

Animal testing did not show any effects on foetal

development.

STOT - single exposure

Product:

Remarks : No data available

Components:

pentane:

Assessment : May cause drowsiness or dizziness.

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:

Exposure routes : Inhalation

Assessment : The substance or mixture is classified as specific target organ

toxicant, single exposure, category 3 with narcotic effects.

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



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Assessment : May cause drowsiness or dizziness.

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

Assessment : May cause drowsiness or dizziness.

2-butoxyethanol:

Assessment : The substance or mixture is not classified as specific target

organ toxicant, single exposure.

STOT - repeated exposure

Product:

Remarks : No data available

Components:

2-butoxyethanol:

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.

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

May be fatal if swallowed and enters airways.

Components:

pentane:

May be fatal if swallowed and enters airways.

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:

May be fatal if swallowed and enters airways.

Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:

May be fatal if swallowed and enters airways.



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

May be fatal if swallowed and enters airways.

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

May be fatal if swallowed and enters airways.

2-butoxyethanol:

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 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 : Remarks: No data available

aquatic invertebrates

Toxicity to algae/aquatic

plants

Remarks: No data available

Toxicity to microorganisms

Remarks: No data available

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Components:

pentane:

Ecotoxicology Assessment

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

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

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

Toxicity to daphnia and other :

EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l

aquatic invertebrates

Exposure time: 48 h

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

Ecotoxicology Assessment

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

2-butoxyethanol:

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

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

NOEC (Pseudokirchneriella subcapitata (green algae)): 286

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to fish (Chronic

toxicity)

NOEC: > 100 mg/l Exposure time: 21 d

Exposure time. 21 d

Species: Danio rerio (zebra fish)

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Toxicity to daphnia and other : NOEC: 100 mg/l aquatic invertebrates Exposure time: 21 d

(Chronic toxicity) Species: Daphnia magna (Water flea)

Test Type: Reproduction Test Method: OECD Test Guideline 211

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical removability

Remarks: No data available

Components:

Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:

Biodegradability : Result: Not readily biodegradable.

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

Biodegradability : Result: Not rapidly biodegradable

2-butoxyethanol:

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: No data available

Components:

Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-

octanol/water

Remarks: No data available

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

Bioaccumulation : Remarks: No data available

Partition coefficient: n- : log Pow: 4

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octanol/water

2-butoxyethanol:

Bioaccumulation Bioconcentration factor (BCF): 3,16

Partition coefficient: n-

octanol/water

log Pow: 0,81 (25 °C)

Method: OECD Test Guideline 107

butane:

Partition coefficient: n-

octanol/water

log Pow: 2,89

Method: OECD Test Guideline 107

propane:

Partition coefficient: n-

octanol/water

log Pow: 2,36

isobutane:

Partition coefficient: n-

octanol/water

log Pow: 2,88

Method: OECD Test Guideline 107

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.

12.6 Endocrine disrupting properties

Product:

The substance/mixture does not contain components Assessment

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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12.7 Other adverse effects

Product:

Additional ecological

information

Toxic to aquatic life with long lasting effects.

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

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IMDG : AEROSOLS

(naphtha (petroleum), hydrotreated light, cyclohexane)

IATA : Aerosols, flammable

(naphtha (petroleum), hydrotreated light)

14.3 Transport hazard class(es)

ADN : 2
ADR : 2
RID : 2
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 : 203

aircraft)

Packing instruction (LQ) : Y203

Packing group : Not assigned by regulation

Labels : Flammable Gas

IATA (Passenger)

Packing instruction : 203

(passenger aircraft)

Packing instruction (LQ) : Y203

Packing group : Not assigned by regulation

Labels : Flammable Gas

14.5 Environmental hazards



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ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

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

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

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

Number on list 75

If you intend to use this product as tattoo ink, please contact your

vendor.

2-butoxyethanol (Number on list 3)

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).

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



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Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

Not applicable

REACH - List of substances subject to authorisation

(Annex XIV)

(EU PIC)

(EU. REACH-Annex XIV)

: Not applicable

Regulation (EU) 2019/1148 on the marketing and use of : Not applicable

explosives precursors

P2

34

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

and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e)

alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to

Petroleum products: (a) gasolines

(d)

Water hazard class (Germany)

WGK 2 obviously hazardous to water

Classification according to AwSV, Annex 1 (5.2)

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TA Luft List (Germany) : 5.2.1: Total dust:

others: 0,2 %

5.2.2: Inorganic substances in powdered form:

Not applicable

5.2.4: Inorganic substances in gaseous form:

Not applicable

5.2.5: Organic Substances:

Class 1: 2,24 %

5.2.7.1.1: Carcinogenic substance:

Class 3: 0,05 %

5.2.7.1.1: Quartz fine dust PM4:

Not applicable

5.2.7.1.1: Formaldehyde:

Not applicable 5.2.7.1.1: fibres: Not applicable

5.2.7.2: Poorly degradable, easily enrichable and highly toxic

organic substances: Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial

emissions (integrated pollution prevention and control) Volatile organic compounds (VOC) content: 93,32 %

Other regulations:

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

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.
H226 : Flammable liquid and vapour.

H280 : Contains gas under pressure; may explode if heated.

H302 : Harmful if swallowed.

H304 : May be fatal if swallowed and enters airways.

H315 : Causes skin irritation.

H319 : Causes serious eye irritation.



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H331 : Toxic if inhaled.

H336 : May cause drowsiness or dizziness.

H411 : Toxic to aquatic life with long lasting effects.

EUH066 : Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

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 P : The harmonised classification as a carcinogen or mutagen

applies unless it can be shown that the substance contains less than 0,1 % w/w benzene (Einecs No 200-753-7), in which

case a classification in accordance with Title II of this

Regulation shall be performed also for those hazard classes. Where the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P260-

P262-P301 + P310-P331 shall apply.

Note U (table 3.1) : 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).

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first

list of indicative occupational exposure limit values

2006/15/EC : Europe. Indicative occupational exposure limit values

DE DFG BAT : Germany. MAK BAT Annex XIII
DE DFG MAK : Germany. MAK BAT Annex IIa

DE TRGS 900 : Germany. TRGS 900 - Occupational exposure limit values.

TRGS 903 : TRGS 903 - Biological limit values

2000/39/EC / TWA : Limit Value - eight hours 2000/39/EC / STEL : Short term exposure limit 2006/15/EC / TWA : Limit Value - eight hours

DE DFG MAK / MAK : MAK value

DE TRGS 900 / AGW : Time Weighted Average

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



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Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx -Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA -International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID -Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; 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: Classification procedure:

Aerosol 1	H222, H229	Based on product data or assessment
Skin Irrit. 2	H315	Calculation method
STOT SE 3	H336	Calculation method
Asp. Tox. 1	H304	Based on product data or assessment
Aquatic Chronic 2	H411	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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safety data sheets and any amendments contained therein to its own customers, employees and other users of the product. We provide no guarantee that safety data sheets received by users from third parties are up-to-date. All information and instructions in this safety data sheet have been compiled to the best of our knowledge and are based on the information available to us on the day of publication. The information provided is intended to describe the product in relation to the required safety measures; it is neither an assurance of characteristics nor a guarantee of the product's suitability for particular applications and does not justify any contractual legal relationship. The existence of a safety data sheet for a particular jurisdiction does not necessarily mean that import or use within that jurisdiction is legally permitted. If you have any questions, please contact your responsible sales contact or authorized trading partner.