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

1.1 Product identifier

Product name : OKS 2561

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

Use of the : Corrosion inhibitor

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.

Eye irritation, Category 2 H319: Causes serious eye irritation.

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

system

H336: May cause drowsiness or dizziness.



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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.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin

dryness or cracking.

Precautionary statements : Prevention:

P210 Keep away from heat, hot surfaces, sparks,

open flames and other ignition sources. No

smoking.

P211 Do not spray on an open flame or other

ignition source.

P251 Do not pierce or burn, even after use.

P261 Avoid breathing mist.

P273 Avoid release to the environment.

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:

butanone

acetone

n-butyl acetate

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 : Active agent with propellant and solvent.

Metal powder

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
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		>= 30 - < 50
acetone	67-64-1 200-662-2 606-001-00-8 01-2119471330-49- XXXX	Flam. Liq.2; H225 Eye Irrit.2; H319 STOT SE3; H336; EUH066		>= 10 - < 20
cyclopentanone	120-92-3 204-435-9 606-025-00-9 01-2119495595-21- xxxx	Flam. Liq.3; H226 Skin Irrit.2; H315 Eye Irrit.2; H319		>= 1 - < 10
zinc powder — zinc dust (stabilised)	7440-66-6 231-175-3	Aquatic Acute1; H400	M-Factor: 1/1	>= 2,5 - < 10

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	030-001-01-9 01-2119467174-37- XXXX	Aquatic Chronic1; H410		
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		>= 1 - < 10
Substances with a wor	kplace exposure limit:	1	•	
dimethyl ether	115-10-6 204-065-8 603-019-00-8 01-2119472128-37- XXXX	Flam. Gas1A; H220 Press. GasLiquefied gas; H280	Note U (table 3.1)	>= 30 - < 50
aluminium powder (stabilised)	7429-90-5 231-072-3 013-002-00-1 01-2119529243-45- XXXX	Flam. Sol.1; H228	Note T	>= 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. Seek medical advice.

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.

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 : ABC powder

Unsuitable extinguishing

media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during : Fire Hazard

firefighting 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

Halogenated compounds



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Metal oxides

5.3 Advice for firefighters

Special protective equipment :

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment. Exposure to decomposition products may be a hazard to health.

Further information : Standard procedure for chemical fires.

Collect contaminated fire extinguishing water separately. This

must not be discharged into drains. Cool containers/tanks with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.

Ensure adequate ventilation. Remove all sources of ignition.

Do not breathe vapours or spray mist.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Refer to protective measures listed in sections 7 and 8. Only qualified personnel equipped with suitable protective

equipment may intervene.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform

respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible

absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to

local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

Non-sparking tools should be used.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling



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Advice on safe handling : Do not use in areas without adequate ventilation.

Do not breathe vapours or spray mist.

In case of insufficient ventilation, wear suitable respiratory

equipment.

Avoid contact with skin and eyes. For personal protection see section 8.

Keep away from fire, sparks and heated surfaces. Smoking, eating and drinking should be prohibited in the

application area.

Wash hands and face before breaks and immediately after

handling the product.

Do not get in eyes or mouth or on skin.

Do not get on skin or clothing.

Do not ingest.

Do not use sparking tools.

These safety instructions also apply to empty packaging which

may still contain product residues.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or

burn, even after use.

Hygiene measures : Wash face, hands and any exposed skin thoroughly after

handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

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

national regulations.

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
butanone	78-93-3	STEL	300 ppm 900 mg/m3	2000/39/EC (2000-06-16)
	Further information: Indicative			



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		TWA	200 ppm	2000/39/EC				
			600 mg/m3	(2000-06-16)				
	Further inforr	mation: Indicative						
		MAK	200 ppm	DE DFG MAK				
			600 mg/m3	(2005-07-01)				
		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						
	observed							
		AGW	200 ppm	DE TRGS				
			600 mg/m3	900				
		<u> </u>		(2010-08-04)				
		cursion factor (cated						
			on, When there is complianc					
			nere is no risk of harming the					
dimethyl ether	115-10-6	TWA	1.000 ppm	2000/39/EC				
		1	1.920 mg/m3	(2000-06-16)				
	Further inforr	nation: Indicative	1	T = = = = :				
		MAK	1.000 ppm	DE DFG MAK				
			1.900 mg/m3	(2005-07-01)				
		Further information: Either there are no data for an assessment of damage to the embryo or foetus, including developmental neurotoxicity, or the currently						
	avaliable data	_	r classification in one of the					
		AGW	1.000 ppm	DE TRGS 900				
			1.900 mg/m3					
	Peak-limit: excursion factor (category): 8;(II)							
agatana	67-64-1	TWA	500 ppm	2000/39/EC				
acetone	07-04-1	IVVA	1.210 mg/m3	(2000-06-16)				
	Further inform	nation: Indicative	1.210 Hig/iii3	(2000-00-10)				
	i dittiei iiiioii	MAK	500 ppm	DE DFG MAK				
		IVIAN	1.200 mg/m3	(2023-07-01)				
	Further inform	nation: According to						
	Further information: According to currently available information damage to the embryo or foetus cannot be excluded after exposure to concentrations at							
		the level of the MAK and BAT values						
		AGW	500 ppm	DE TRGS				
			1.200 mg/m3	900				
			g,g	(2015-03-02)				
	Peak-limit: ex	cursion factor (cate	gory): 2;(I)					
			s compliance with the OEL a	nd biological				
			of harming the unborn child	Ü				
zinc powder —	7440-66-6	MAK (measured	0,1 mg/m3	DE DFG MAK				
zinc dust		as the alveolate		(2023-07-01)				
(stabilised)		fraction)		Í				
			peak limit I(1), Damage to the					
	foetus is unlikely when the MAK value or the BAT value is observed							
		MAK (inhalable	2 mg/m3	DE DFG MAK				
		fraction)		(2023-07-01)				
		Further information: Zinc chloride: peak limit I(1), Damage to the embryo or						
	foetus is unlil	foetus is unlikely when the MAK value or the BAT value is observed						

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aluminium powder (stabilised)	7429-90-5	AGW (Inhalable fraction)	10 mg/m3	DE TRGS 900 (2014-04-02)	
	Peak-limit: ex	cursion factor (categ	ory): 2;(II)	,	
	Further information: When there is compliance with the OEL and biological				
			of harming the unborn child	Ü	
		AGW (Alveolate fraction)	1,25 mg/m3	DE TRGS 900 (2014-04-02)	
	Peak-limit: ex	cursion factor (categ	ory): 2;(II)	,	
			s compliance with the OEL ar	nd biological	
			of harming the unborn child	J	
		BM (Alveolar dust fraction)	0,5 mg/m3	DE TRGS 527 (2020-02-19)	
n-butyl acetate	123-86-4	STEL	150 ppm 723 mg/m3	2019/1831/E U (2019-10-31)	
	Further inform	nation: Indicative		,	
		TWA	50 ppm 241 mg/m3	2019/1831/E U (2019-10-31)	
	Further inform	nation: Indicative	l	(
		MAK	100 ppm 480 mg/m3	DE DFG MAK (2005-07-01)	
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed				
		AGW	62 ppm 300 mg/m3	DE TRGS 900 (2022-06-23)	
		cursion factor (categ			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child				

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time Basis	
butanone	78-93-3	2-butanon: 5 mg/l (Urine)	Immediately after exposition or after working hours	DE DFG BAT (2023-07- 01)
		2-butanone: 2 mg/l (Urine)	Immediately after exposure or after working hours	TRGS 903 (2015-11- 06)
acetone	67-64-1	Acetone: 50 mg/l (Urine)	Immediately after exposition or after working hours	DE DFG BAT (2023-07- 01)
		Acetone: 50 mg/l (Urine)	Immediately after exposure or after working hours	TRGS 903 (2023-06- 12)



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aluminium powder (stabilised)	7429-90-5	Aluminium: 50 μg/g creatinine (Urine)	end of shift, for long-term exposures after several previous shifts	DE DFG BAT (2023-07- 01)
		Aluminium: 50 μg/g creatinine (Urine)	In case of long- term exposure: after more than one shift	TRGS 903 (2019-03- 29)

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

Substance name	End Use	Exposure routes	Potential health effects	Value
butanone	Workers	Inhalation	Long-term systemic effects	600 mg/m3
	Workers	Skin contact	Long-term systemic effects	1161 mg/kg
dimethyl ether	Workers	Inhalation	Long-term exposure	1894 mg/m3
acetone	Workers	Inhalation	Long-term systemic effects	1210 mg/m3
	Workers	Skin contact	Long-term systemic effects	186 mg/kg
cyclopentanone	Workers	Inhalation	Long-term systemic effects	61 mg/m3
	Workers	Skin contact	Long-term systemic effects	7 mg/kg
zinc powder — zinc dust (stabilised)	Workers	Inhalation	Long-term systemic effects	5 mg/m3
	Workers	Skin contact	Long-term systemic effects	83 mg/kg
aluminium powder (stabilised)	Workers	Inhalation	Long-term systemic effects	3,72 mg/m3
	Workers	Inhalation	Long-term local effects	3,72 mg/m3
n-butyl acetate	Workers	Inhalation	Long-term systemic effects	300 mg/m3
	Workers	Inhalation	Acute systemic effects	600 mg/m3
	Workers	Dermal	Long-term local effects	11 mg/cm2

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

Substance name	Environmental Compartment	Value
dimethyl ether	Fresh water	0,155 mg/l
	Marine water	0,016 mg/l
	Sewage treatment plant	160 mg/l
	Fresh water sediment	0,681 mg/kg
	Marine sediment	0,069 mg/kg
	Soil	0,045 mg/kg
acetone	Fresh water	10,6 mg/l



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	Marine water	1,06 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	30,4 mg/kg
	Marine sediment	3,04 mg/kg
	Soil	29,5 mg/kg
zinc powder — zinc dust (stabilised)	Fresh water	0,0206 mg/l
	Fresh water sediment	117,8 mg/kg
	Marine water	0,0061 mg/l
	Marine sediment	56,5 mg/kg
	Microbiological Activity in Sewage Treatment Systems	0,052 mg/l
	Soil	35,6 mg/kg
n-butyl acetate	Fresh water	0,18 mg/l
	Marine water	0,018 mg/l
	Microbiological Activity in Sewage	35,6 mg/l
	Treatment Systems	
	Fresh water sediment	0,981 mg/kg
	Marine sediment	0,0981 mg/kg
	Soil	0,09 mg/kg

8.2 Exposure controls

Engineering measures

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

Personal protective equipment

Eye/face protection : 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

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.

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Filter type : Recommended Filter type:

Organic gas and low boiling vapour type (AX)

Protective measures : The type of protective equipment must be selected according

to the concentration and amount of the dangerous substance

at the specific workplace.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : aerosol

Colour : silver

Odour : characteristic

Odour Threshold : No data available

Melting point/range : No data available

Boiling point/boiling range : No data available

Flammability (solid, gas) : Extremely flammable aerosol.

Upper explosion limit / Upper

flammability limit

15 %(V)

Lower explosion limit / Lower

flammability limit

1 %(V)

Flash point : -60 °C

Method: Abel-Pensky

Auto-ignition temperature : 365 °C

Decomposition temperature : No data available

pH : Not applicable

substance/mixture is non-soluble (in water)

Viscosity

Viscosity, dynamic : No data available

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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 : 5.500 hPa (20 °C)

Relative density : 0,69 (20 °C)

Reference substance: Water The value is calculated

Density : 0,69 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



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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:

Symptoms: Central nervous system depression

Acute inhalation toxicity : Remarks: Respiration of solvent vapour may cause dizziness.

Harmful by inhalation.

Symptoms: Inhalation may provoke the following symptoms:, Respiratory disorder, 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:

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

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acetone:

Acute oral toxicity : LD50 Oral (Rat): 5.800 mg/kg

cyclopentanone:

Acute oral toxicity : LD50 Oral (Rat): > 2.000 mg/kg

zinc powder — zinc dust (stabilised):

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg

Method: OECD Test Guideline 401

GLP: yes

Assessment: The substance or mixture has no acute oral

toxicity

Acute inhalation toxicity : LC50 (Rat): > 5,41 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

GLP: yes

Assessment: The substance or mixture has no acute

inhalation toxicity

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

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

dimethyl ether:

Acute inhalation toxicity : LC50 (Rat): 309 mg/l

Exposure time: 4 h Test atmosphere: gas

aluminium powder (stabilised):

Acute inhalation toxicity : LC50 (Rat): > 5,09 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute

inhalation toxicity

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Skin corrosion/irritation

Product:

Remarks This information is not available.

Components:

butanone:

Species Rabbit

Assessment No skin irritation

Method **OECD Test Guideline 404**

Result No skin irritation

Repeated exposure may cause skin dryness or cracking. Result

acetone:

Result Repeated exposure may cause skin dryness or cracking.

cyclopentanone:

Species Rabbit Result Skin irritation

zinc powder - zinc dust (stabilised):

Species

Assessment No skin irritation Result No skin irritation

n-butyl acetate:

Species Rabbit

Assessment No skin irritation

Method OECD Test Guideline 404

Result Repeated exposure may cause skin dryness or cracking.

dimethyl ether:

Assessment No skin irritation No skin irritation Result

aluminium powder (stabilised):

Species Rabbit

No skin irritation Assessment Result No skin irritation



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Serious eye damage/eye irritation

Product:

Remarks Irritating to eyes.

Components:

butanone:

Species Rabbit

Assessment Irritating to eyes.

OECD Test Guideline 405 Method

Result Irritating to eyes.

acetone:

Species Rabbit Result Eye irritation

cyclopentanone:

Species Rabbit Result Eye irritation

zinc powder — zinc dust (stabilised):

Species Rabbit 24 h Exposure time

Assessment No eye irritation

Method **OECD Test Guideline 405**

Result No eye irritation

GLP yes

n-butyl acetate:

Species Rabbit

No eye irritation Assessment

Method **OECD Test Guideline 405**

Result No eye irritation

GLP yes

dimethyl ether:

Assessment No eye irritation No eye irritation Result

aluminium powder (stabilised):

Species Rabbit

Assessment No eye irritation Result No eye irritation



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



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Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

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

zinc powder — zinc dust (stabilised):

Species : Guinea pig

Assessment : Did not cause sensitisation on laboratory animals.

Method : OECD Test Guideline 406

Result : Did not cause sensitisation on laboratory animals.

GLP : yes

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.

dimethyl ether:

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

aluminium powder (stabilised):

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

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Components:

butanone:

Germ cell mutagenicity-

Assessment

Tests on bacterial or mammalian cell cultures did not show

mutagenic effects.

zinc powder — zinc dust (stabilised):

Germ cell mutagenicity-

Assessment

Tests on bacterial or mammalian cell cultures did not show

mutagenic effects.

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-

Assessment

Tests on bacterial or mammalian cell cultures did not show

mutagenic effects., Animal testing did not show any mutagenic

effects.

dimethyl ether:

Genotoxicity in vitro : Test Type: Ames test

Method: OECD Test Guideline 471

Result: negative

Genotoxicity in vivo : Species: Drosophila melanogaster (vinegar fly)

Application Route: inhalation (gas) Method: OECD Test Guideline 477

Result: negative

Carcinogenicity

Product:

Remarks : No data available

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Components:

butanone:

Carcinogenicity -

: Not classifiable as a human carcinogen.

Assessment

zinc powder — zinc dust (stabilised):

Carcinogenicity - : No evidence of carcinogenicity in animal studies.

Assessment

n-butyl acetate:

Carcinogenicity - : Not classifiable as a human carcinogen.

Assessment

dimethyl ether:

Species : Rat

Application Route : inhalation (gas)

Exposure time : 2 Years : 47 mg/l

Method : OECD Test Guideline 453

Result : negative

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Effects on foetal : Remarks: No data available

development

Components:

butanone:

Reproductive toxicity - : - Fertility -

Assessment No toxicity to reproduction

- Teratogenicity -

No effects on or via lactation

zinc powder — zinc dust (stabilised):

Reproductive toxicity - : - Fertility -

Assessment

No toxicity to reproduction

- Teratogenicity -

No effects on or via lactation

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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

dimethyl ether:

Reproductive toxicity -

Fertility -

Assessment

Animal testing did not show any effects on fertility.

STOT - single exposure

Product:

Remarks : No data available

Components:

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.

acetone:

Exposure routes : Inhalation

Assessment : May cause drowsiness or dizziness.

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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STOT - repeated exposure

Product:

Remarks : No data available

Components:

butanone:

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

organ toxicant, repeated exposure.

n-butyl acetate:

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:

butanone:

No aspiration toxicity classification

zinc powder — zinc dust (stabilised):

No aspiration toxicity classification

n-butyl acetate:

No aspiration toxicity classification

dimethyl ether:

No aspiration toxicity classification



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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 : Risks of irreversible effects after a single exposure.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: Toxic to aquatic organisms, may cause long-term

adverse effects in the aquatic environment.

Toxicity to daphnia and other :

aquatic invertebrates

Remarks: No data available

Toxicity to algae/aquatic

plants

Remarks: No data available

Toxicity to microorganisms

Remarks: No data available

Components:

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

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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

zinc powder — zinc dust (stabilised):

Toxicity to fish : LC50 (Oncorhynchus kisutch (coho salmon)): 0,727 mg/l

Exposure time: 96 h Test Type: static test

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0,937 mg/l

Exposure time: 48 h Test Type: static test

Method: OECD Test Guideline 202

M-Factor (Acute aquatic

toxicity)

1

M-Factor (Chronic aquatic

toxicity)

1

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

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

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



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Toxicity to daphnia and other : NOEC: 23 mg/l aquatic invertebrates : Exposure time:

aquatic invertebrates Exposure time: 21 d

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

Test Type: Reproduction Test

GLP: yes

dimethyl ether:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): > 4.100 mg/l

Exposure time: 96 h Test Type: semi-static test

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 4.400 mg/l

Exposure time: 48 h Test Type: static test

Toxicity to algae/aquatic

plants

EC50 (green algae): 154,9 mg/l

Exposure time: 96 h

aluminium powder (stabilised):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,12 mg/l

Exposure time: 96 h Test Type: static test

Remarks: No toxicity at the limit of solubility

Ecotoxicology Assessment

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

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

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical

removability

Remarks: No data available

Components:

butanone:

Biodegradability : Test Type: aerobic

Inoculum: activated sludge Result: rapidly biodegradable Biodegradation: 98 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

GLP: yes

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acetone:

Biodegradability : Result: rapidly biodegradable

cyclopentanone:

Biodegradability : Result: rapidly biodegradable

n-butyl acetate:

Biodegradability : Test Type: Primary biodegradation

Result: rapidly biodegradable Biodegradation: 83 % Exposure time: 28 d

Method: OECD Test Guideline 301D

dimethyl ether:

Biodegradability : Test Type: aerobic

Inoculum: activated sludge Result: Not readily biodegradable.

Biodegradation: 5 % Exposure time: 28 d

Method: OECD Test Guideline 301D

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

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

acetone:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-

octanol/water

: log Pow: 0,2

cyclopentanone:

Bioaccumulation : Remarks: No data available

a brand of

FREUDENBERG

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n-butyl acetate:

Partition coefficient: nlog Pow: 2,3 (25 °C)

octanol/water pH: 7

Method: OECD Test Guideline 117

GLP: yes

dimethyl ether:

Partition coefficient: n-

octanol/water

log Pow: 0,07 (25 °C)

12.4 Mobility in soil

Product:

Mobility Remarks: No data available

Distribution among Remarks: No data available

environmental compartments

12.5 Results of PBT and vPvB assessment

Product:

This substance/mixture contains no components considered Assessment

to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of

0.1% or higher.

Components:

butanone:

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

n-butyl acetate:

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

dimethyl ether:

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

12.6 Endocrine disrupting properties

Product:

Assessment The substance/mixture does not contain components

considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.



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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

IATA Aerosols, flammable

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

Not assigned by regulation Packing group

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

ADN



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Environmentally hazardous : yes

ADR

Environmentally hazardous yes

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

: Not applicable for product as supplied. Remarks

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.

zinc powder — zinc dust (stabilised)

(Number on list 75)

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 : Not applicable

Parliament and the Council concerning the export and

import of dangerous chemicals

(EU PIC)

REACH - List of substances subject to authorisation : Not applicable

(Annex XIV)

(EU. REACH-Annex XIV)

Regulation (EU) 2019/1148 on the marketing and use of : acetone (ANNEX II)

explosives precursors

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

Seveso III: Directive 2012/18/EU of the European P3a FLAMMABLE AEROSOLS

Parliament and of the Council on the control of major-accident hazards involving dangerous

substances.

E2 ENVIRONMENTAL HAZARDS

P5c

Water hazard class : WGK 2 obviously hazardous to water

(Germany)

Classification according to AwSV, Annex 1 (5.2)

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

others: 10,67 %

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:

Not applicable

5.2.7.1.1: Carcinogenic substance:

Not applicable

5.2.7.1.1: Quartz fine dust PM4:

others: 0,03 %

5.2.7.1.1: Formaldehyde:

Not applicable 5.2.7.1.1: fibres: Not applicable



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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: 84,18 %

Other regulations:

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

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H220 : Extremely flammable gas.

H225 : Highly flammable liquid and vapour. H226 : Flammable liquid and vapour.

H228 : Flammable solid.

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

H315 : Causes skin irritation. H319 : Causes serious eye irritation.

H336 : May cause drowsiness or dizziness.

H400 : Very toxic to aquatic life.

H410 : Very toxic to aquatic life with long lasting effects.

EUH066 : Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Note T : This substance may be marketed in a form which does not

have the physical hazards as indicated by the classification in the entry in Part 3. If the results of the relevant method or methods in accordance with Part 2 of Annex I of this Regulation show that the specific form of substance marketed

does not exhibit this physical property or these physical hazards, the substance shall be classified in accordance with



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the result or results of this test or these tests. Relevant information, including reference to the relevant test method(s)

shall be included in the safety data sheet.

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

2019/1831/EU : Europe. Commission Directive 2019/1831/EU establishing a

fifth list of indicative occupational exposure limit values

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

DE TRGS 527 : Germany. TRGS 527 - Activities with nanomaterials
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 2019/1831/EU / TWA : Limit Value - eight hours 2019/1831/EU / STEL : Short term exposure limit

DE DFG MAK / MAK : MAK value
DE TRGS 527 / BM : Assessment scale
DE TRGS 900 / AGW : Time Weighted Average

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

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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
Eye Irrit. 2 H319 Calculation method
STOT SE 3 H336 Calculation method
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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