

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

UNIMOLY C 220 Spray

Version	Revision Date:	Date of last issue: 18.05.2020	Print Date:
3.2	04.12.2020	Date of first issue: 07.11.2016	04.12.2020

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

1.1 Product identifier

Product name : UNIMOLY C 220 Spray
Article-No. : 081053

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

Use of the Sub-
stance/Mixture : Lubricant spray
Recommended restrictions : For professional users only.
on use

1.3 Details of the supplier of the safety data sheet

Company : Klüber Lubrication München
Geisenhausenerstr. 7
81379 München
Deutschland
Tel: +49 (0) 89 7876 0
Fax: +49 (0) 89 7876 333
info@klueber.com
E-mail address of person
responsible for the SDS : mcm@klueber.com
Material Compliance Management
National contact : Klüber Lubrication Deutschland
Geisenhausenerstraße 7
81379 München
Deutschland
Tel.: +49 89 7876 0
Fax: +49 89 7876 565
customer.service.de@klueber.com
www.klueber.com

1.4 Emergency telephone number

Emergency telephone num-
ber : +49 89 7876 700 (24 hrs)

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

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

H336: May cause drowsiness or dizziness.

Long-term (chronic) aquatic hazard, Category 3

H412: Harmful 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.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.
H412 Harmful 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.
P280 Wear eye protection/ face protection.

Response:

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

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:

n-butyl acetate

titanium tetrabutanolate

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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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Propellant
inorganic binding agent
Solvent mixture
solid lubricant

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration limits M-Factor Notes	Concentration (% w/w)
n-butyl acetate	123-86-4 204-658-1 607-025-00-1 01-2119485493-29-XXXX	Flam. Liq.3; H226 STOT SE3; H336		>= 10 - < 20
titanium tetrabutanolate	5593-70-4 227-006-8 01-2119967423-33-XXXX	Flam. Liq.3; H226 Skin Irrit.2; H315 Eye Dam.1; H318 STOT SE3; H336 STOT SE3; H335		>= 3 - < 10
butan-1-ol	71-36-3 200-751-6 603-004-00-6 01-2119484630-38-XXXX	Flam. Liq.3; H226 Acute Tox.4; H302 Skin Irrit.2; H315 Eye Dam.1; H318 STOT SE3; H336 STOT SE3; H335		>= 1 - < 3
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	920-901-0 01-2119456810-40-XXXX	Asp. Tox.1; H304		>= 1 - < 10
Hydrocarbons, C9, aromatics	918-668-5	Flam. Liq.3; H226 STOT SE3; H336 STOT SE3; H335 Asp. Tox.1; H304	Note P	>= 1 - < 2,5

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	01-2119455851-35-XXXX	Aquatic Chronic2; H411		
zinc oxide	1314-13-2 215-222-5 030-013-00-7 01-2119463881-32-XXXX	Aquatic Acute1; H400 Aquatic Chronic1; H410	M-Factor: 1/1	$\geq 0,1 - < 0,25$
Substances with a workplace exposure limit :				
isobutane	75-28-5 200-857-2 601-004-00-0 01-2119485395-27-XXXX	Flam. Gas1A; H220 Press. GasCompr. Gas; H280	Note U (table 3.1), Note C	$\geq 50 - < 70$
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)	$\geq 1 - < 10$
butane	106-97-8 203-448-7 601-004-00-0 01-2119474691-32-XXXX	Flam. Gas1A; H220 Press. GasCompr. Gas; H280	Note U (table 3.1), Note C	$\geq 1 - < 10$
Graphite	7782-42-5 231-955-3	Not classified		$\geq 1 - < 10$

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.

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- In case of skin contact : Take off all contaminated clothing immediately.
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.
Get medical attention immediately.
- If swallowed : Move the victim to fresh air.
If accidentally swallowed obtain immediate medical attention.
Keep respiratory tract clear.
Do NOT induce vomiting.
Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Inhalation may provoke the following symptoms:
Unconsciousness
Dizziness
Drowsiness
Headache
Nausea
Tiredness
- Risks : Central nervous system depression

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-fighting : 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 prod- : Carbon oxides

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ucts Sulphur oxides
Metal oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. 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
isobutane	75-28-5	AGW	1.000 ppm 2.400 mg/m ³	DE TRGS 900 (2006-01-01)
Peak-limit: excursion factor (category)	4;(II)			

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ry)				
n-butyl acetate	123-86-4	AGW	62 ppm 300 mg/m ³	DE TRGS 900 (2012-09-13)
Peak-limit: excursion factor (category)	2;(I)			
Further information	When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
propane	74-98-6	AGW	1.000 ppm 1.800 mg/m ³	DE TRGS 900 (2006-01-01)
Peak-limit: excursion factor (category)	4;(II)			
butan-1-ol	71-36-3	AGW	100 ppm 310 mg/m ³	DE TRGS 900 (2006-01-01)
Peak-limit: excursion factor (category)	1;(I)			
Further information	When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
butane	106-97-8	AGW	1.000 ppm 2.400 mg/m ³	DE TRGS 900 (2006-01-01)
Peak-limit: excursion factor (category)	4;(II)			
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	Not Assigned	AGW	300 mg/m ³	DE TRGS 900 (2017-11-30)
Peak-limit: excursion factor (category)	2;(II)			
Further information	Group exposure limit for hydrocarbon solvent mixtures			
		AGW	600 mg/m ³	DE TRGS 900 (2009-02-16)
Peak-limit: excursion factor (category)	2;(II)			
Further information	Group exposure limit for hydrocarbon solvent mixtures, Commission for dangerous substances, See also No. 2.9 of the TRGS 900			
Hydrocarbons, C9, aromatics	Not Assigned	AGW	100 mg/m ³	DE TRGS 900 (2009-02-16)
Peak-limit: excursion factor (category)	2;(II)			
Further information	Group exposure limit for hydrocarbon solvent mixtures, Commission for dan-			

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	gerous substances, See also No. 2.9 of the TRGS 900			
Graphite	7782-42-5	AGW (Inhalable fraction)	10 mg/m ³	DE TRGS 900 (2014-04-02)
Peak-limit: excursion factor (category)	2;(II)			
		AGW (Alveolate fraction)	1,25 mg/m ³	DE TRGS 900 (2014-04-02)
Peak-limit: excursion factor (category)	2;(II)			

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
butan-1-ol	71-36-3	1-butanol: 2 mg/g Creatinine (Urine)	Before next shift	TRGS 903 (2013-09-19)
		1-butanol: 10 mg/g Creatinine (Urine)	Immediately after exposure or after working hours	TRGS 903 (2013-09-19)

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

Substance name	End Use	Exposure routes	Potential health effects	Value
n-butyl acetate	Workers	Inhalation	Long-term systemic effects	300 mg/m ³
	Workers	Inhalation	Acute systemic effects	600 mg/m ³
	Workers	Dermal	Long-term local effects	11 mg/cm ²
titanium tetrabutylate	Workers	Inhalation	Long-term systemic effects	127 mg/m ³
butan-1-ol	Workers	Inhalation	Long-term local effects	310 mg/m ³
Hydrocarbons, C9, aromatics	Workers	Skin contact	Long-term systemic effects	25 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	150 mg/m ³
zinc sulphide	Workers	Inhalation	Long-term systemic effects	5 mg/m ³
	Workers	Dermal	Long-term systemic effects	83 mg/kg bw/day
zinc oxide	Workers	Inhalation	Long-term systemic effects	5 mg/m ³
	Workers	Inhalation	Long-term local effects	0,5 mg/m ³
	Workers	Skin contact	Long-term systemic effects	83 mg/kg

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

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Substance name	Environmental Compartment	Value	
n-butyl acetate	Fresh water	0,18 mg/l	
	Marine water	0,018 mg/l	
	Microbiological Activity in Sewage Treatment Systems	35,6 mg/l	
	Fresh water sediment	0,981 mg/kg	
	Marine sediment	0,0981 mg/kg	
	Soil	0,09 mg/kg	
titanium tetrabutanolate	Fresh water	0,08 mg/l	
	Intermittent use/release	2,25 mg/l	
	Marine water	0,008 mg/l	
	Sewage treatment plant	65 mg/l	
	Fresh water sediment	0,069 mg/kg	
	Marine sediment	0,007 mg/kg	
	Soil	0,017 mg/kg	
	butan-1-ol	Fresh water	0,082 mg/l
		Marine water	0,008 mg/l
Intermittent use/release		2,25 mg/l	
	Microbiological Activity in Sewage Treatment Systems	2476 mg/l	
	Fresh water sediment	0,324 mg/kg dry weight (d.w.)	
	Marine sediment	0,032 mg/kg dry weight (d.w.)	
	Soil	0,017 mg/kg dry weight (d.w.)	
	zinc sulphide	Fresh water	0,0206 mg/l
Marine water		0,0061 mg/l	
Microbiological Activity in Sewage Treatment Systems		0,1 mg/l	
Fresh water sediment		117,8 mg/kg	
Marine sediment		56,5 mg/kg	
	Soil	35,6 mg/kg	
	zinc oxide	Fresh water	0,0206 mg/l
		Marine water	0,0061 mg/l
Microbiological Activity in Sewage Treatment Systems		0,100 mg/l	
Fresh water sediment		117,8 mg/kg	
	Marine sediment	56,5 mg/kg	
	Soil	35,6 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 protection : Tightly fitting safety goggles

Hand protection
Material : Nitrile rubber

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Break through time : > 10 min
Protective index : Class 1

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

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. 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.
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : aerosol
Colour : grey
Odour : characteristic
Odour Threshold : No data available

Values refer to the propellant:

pH : Not applicable
Melting point/range : No data available
Boiling point/boiling range : < -10 °C
(1.013 hPa)
Flash point : -80 °C
Method: closed cup
Evaporation rate : No data available

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Flammability (solid, gas) : Extremely flammable aerosol.

Upper explosion limit / Upper flammability limit : 11,2 %(V)

Lower explosion limit / Lower flammability limit : 1,5 %(V)

Vapour pressure : 2.700 hPa (20 °C)

Relative vapour density : No data available

Relative density : 0,60 (20 °C)
Reference substance: Water
The value is calculated

Density : 0,60 g/cm³
(20 °C)

Bulk density : No data available

Solubility(ies)
Water solubility : insoluble

Solubility in other solvents : No data available

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

Auto-ignition temperature : > 350 °C

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : No data available

9.2 Other information

Sublimation point : No data available

Self-ignition : No data available

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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.

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 toxicological effects

Acute toxicity

Product:

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

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, Fa-
tigue, Vertigo, Central nervous system depression

Components:

n-butyl acetate:

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

Acute inhalation toxicity : LC50 (Rat): > 21 mg/l
Exposure time: 4 h
Test atmosphere: vapour

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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

titanium tetrabutanoate:

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

Acute inhalation toxicity : LC50 (Mouse): > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Test substance: Butan-1-ol
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : (Rabbit): 5.300 mg/kg

butan-1-ol:

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

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

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

Hydrocarbons, C9, aromatics:

Acute oral toxicity : LD50 (Rat): 4.200 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is minimally toxic after single contact with skin.

zinc oxide:

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

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Acute inhalation toxicity : LC50 (Rat): > 5,7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

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

isobutane:

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

butane:

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

Graphite:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 423
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 2.000 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Product:

Remarks : This information is not available.

Components:

n-butyl acetate:

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

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titanium tetrabutanolate:

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

butan-1-ol:

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

Hydrocarbons, C11-C13, isoalkanes, <2% aromatics:

Result : Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C9, aromatics:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Mild skin irritation

Result : Repeated exposure may cause skin dryness or cracking.

zinc oxide:

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

Graphite:

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

Serious eye damage/eye irritation

Product:

Remarks : Risk of serious damage to eyes.

Components:

n-butyl acetate:

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

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titanium tetrabutanoate:

Species : Rabbit
Assessment : Risk of serious damage to eyes.
Result : Risk of serious damage to eyes.

butan-1-ol:

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

Hydrocarbons, C9, aromatics:

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

zinc oxide:

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

Graphite:

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

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

n-butyl acetate:

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

titanium tetrabutanoate:

Species : Mouse
Assessment : Did not cause sensitisation on laboratory animals.

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Method : Regulation (EC) No. 440/2008, Annex, B.42 (LLNA)
Result : Did not cause sensitisation on laboratory animals.
GLP : yes

butan-1-ol:

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

Hydrocarbons, C9, aromatics:

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

zinc oxide:

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

Graphite:

Species : Mouse
Method : OECD Test Guideline 429
Result : negative

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Components:

n-butyl acetate:

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

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster cells

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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.

titanium tetrabutanolate:

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

Hydrocarbons, C9, aromatics:

Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects.

zinc oxide:

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

Graphite:

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)
Method: OECD Test Guideline 471
Result: negative

Test Type: gene mutation test
Method: OECD Test Guideline 476
Result: negative

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative

Carcinogenicity

Product:

Remarks : No data available

Components:

n-butyl acetate:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

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Hydrocarbons, C9, aromatics:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

zinc oxide:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Components:

n-butyl acetate:

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

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

titanium tetrabutanolate:

Reproductive toxicity - Assessment : No toxicity to reproduction

Hydrocarbons, C9, aromatics:

Reproductive toxicity - Assessment : No toxicity to reproduction

zinc oxide:

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

Graphite:

Effects on fertility : Species: Rat
Application Route: Oral

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General Toxicity F1: NOAEL: 813 mg/kg body weight
Method: OECD Test Guideline 422

STOT - single exposure

Components:

n-butyl acetate:

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

titanium tetrabutanolate:

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

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

butan-1-ol:

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

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

Hydrocarbons, C9, aromatics:

Exposure routes : Inhalation
Target Organs : Respiratory system
Assessment : May cause respiratory irritation.

Exposure routes : Inhalation
Target Organs : Central nervous system
Assessment : May cause drowsiness or dizziness.

zinc oxide:

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

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organ toxicant, single exposure.

STOT - repeated exposure

Components:

n-butyl acetate:

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

butan-1-ol:

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

Hydrocarbons, C9, aromatics:

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

zinc oxide:

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

Hydrocarbons, C9, aromatics:

Repeated dose toxicity - Assessment : Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Graphite:

Species : Rat
NOAEL : 813 mg/kg
Application Route : Oral
Method : OECD Test Guideline 422

Species : Rat
NOAEL : > 2 mg/l
Application Route : inhalation (dust/mist/fume)

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Method : OECD Test Guideline 412

Aspiration toxicity

Product:

This information is not available.

Components:

n-butyl acetate:

No aspiration toxicity classification

titanium tetrabutanoate:

No aspiration toxicity classification

butan-1-ol:

No aspiration toxicity classification

Hydrocarbons, C11-C13, isoalkanes, <2% aromatics:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Hydrocarbons, C9, aromatics:

May be fatal if swallowed and enters airways.

zinc oxide:

No aspiration toxicity classification

Further information

Product:

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

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

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

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

Toxicity to microorganisms :
Remarks: No data available

Components:

n-butyl acetate:

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

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

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

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

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

titanium tetrabutanolate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1.740 mg/l
Exposure time: 96 h
Test substance: Butan-1-ol

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.983 mg/l
Exposure time: 48 h
Test substance: Butan-1-ol

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 225 mg/l
Exposure time: 96 h
Test substance: Butan-1-ol
Method: OECD Test Guideline 201

butan-1-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1.376 mg/l
Exposure time: 96 h
Test Type: static test

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Method: OECD Test Guideline 203

GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.328 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 225 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC10 (Pseudomonas putida): 2.476 mg/l
Exposure time: 17 h
Test Type: static test
Method: DIN 38 412 Part 8

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 4,1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

Hydrocarbons, C9, aromatics:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 9,22 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 6,14 mg/l
Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

zinc oxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1,55 mg/l
Exposure time: 96 h
Test Type: static test

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

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,136

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plants mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 0,04 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

Graphite:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

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

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

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

Components:

n-butyl acetate:

Biodegradability : Test Type: Primary biodegradation
Result: rapidly biodegradable
Biodegradation: 83 %

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Exposure time: 28 d
Method: OECD Test Guideline 301D

titanium tetrabutanolate:

Biodegradability : Result: Readily biodegradable.
Test substance: Butan-1-ol
Remarks: The organic components of the product are biodegradable.

butan-1-ol:

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

Hydrocarbons, C9, aromatics:

Biodegradability : Result: rapidly biodegradable

zinc oxide:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Graphite:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Product:

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

Components:

n-butyl acetate:

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

titanium tetrabutanolate:

Partition coefficient: n-octanol/water : log Pow: 0,84 (25 °C)

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butan-1-ol:

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

Hydrocarbons, C9, aromatics:

Partition coefficient: n-octanol/water : log Pow: 3,7 - 4,5

isobutane:

Partition coefficient: n-octanol/water : log Pow: 2,88
Method: OECD Test Guideline 107

propane:

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

butane:

Partition coefficient: n-octanol/water : log Pow: 2,89
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..

Components:

n-butyl acetate:

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

zinc oxide:

Assessment : Remarks: Not applicable

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12.6 Other adverse effects

Product:

Additional ecological information : Harmful 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

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

14.2 UN proper shipping name

ADN : AEROSOLS
ADR : AEROSOLS
RID : AEROSOLS
IMDG : AEROSOLS
IATA : Aerosols, flammable

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

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

14.5 Environmental hazards

ADN		
Environmentally hazardous	:	no

ADR		
Environmentally hazardous	:	no

RID		
Environmentally hazardous	:	no

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IMDG

Marine pollutant : no

IATA (Passenger)

Environmentally hazardous : no

IATA (Cargo)

Environmentally hazardous : no

14.6 Special precautions for user

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

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

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 - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

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

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

P2

P5c

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

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- flammable gases (including LPG) and natural gas
- Water contaminating class (Germany) : WGK 1 slightly hazardous to water
Classification according to AwSV, Annex 1 (5.2)
- TA Luft List (Germany) : Total dust:
others: 6,77 %
- Inorganic substances in powdered form:
Not applicable
Inorganic substances in vapour or gaseous form:
Not applicable
Organic Substances:
others: 93,16 %
- Carcinogenic substances:
portion Class 3: 0,06 %
- Mutagenic:
others: 0,06 %
- Toxic to reproduction:
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: 93,16 %

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.
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.
H318 : Causes serious eye damage.
H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.

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H411 : Toxic to aquatic life with long lasting effects.

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 classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (Einecs No 200-753-7). When the substance is not classified as a carcinogen at least the precautionary statements (P102-)P260- P262-P301 + P310-P331 shall apply. This note applies only to certain complex oil-derived substances in Part 3.
- 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).
- DE TRGS 900 : Germany. TRGS 900 - Occupational exposure limit values.
TRGS 903 : TRGS 903 - Biological limit values
DE TRGS 900 / AGW : Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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 Organisa-

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



UNIMOLY C 220 Spray

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tion 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Aerosol 1	H222, H229
Eye Dam. 1	H318
STOT SE 3	H336
Aquatic Chronic 3	H412

Classification procedure:

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

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