

# SAFETY DATA SHEET

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



## OKS 241

Version	Revision Date:	Date of last issue: 14.12.2022	Print Date:
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Product name : OKS 241

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

Use of the Substance/Mixture : Lubricant spray

Recommended restrictions on use : Restricted to professional users.

### 1.3 Details of the supplier of the safety data sheet

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

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

### 1.4 Emergency telephone number

Emergency telephone number : CIAV - Information Centre of Antipoison  
(+351) 800 250 250 (free 24/7 service)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Aerosols, Category 1	H222: Extremely flammable aerosol. H229: Pressurised container: May burst if heated.
Skin irritation, Category 2	H315: Causes skin irritation.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.

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Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :    

Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.  
H229 Pressurised container: May burst if heated.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H336 May cause drowsiness or dizziness.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P273 Avoid release to the environment.  
**Response:**  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P331 Do NOT induce vomiting.  
**Storage:**  
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

### Hazardous components which must be listed on the label:

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

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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.

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

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

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Active substance with propellant  
Solvent mixture

#### Components

Chemical name	CAS-No. EC-No.  Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	921-024-6  01-2119475514-35- XXXX	Flam. Liq.2; H225 Skin Irrit.2; H315 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411		>= 25 - < 30
copper	7440-50-8 231-159-6  029-019-01-X 01-2119480154-42- XXXX	Acute Tox.4; H302 Eye Irrit.2; H319 Aquatic Acute1; H400 Aquatic Chronic1; H410	M-Factor: 10/10  ATE (Oral): 500 mg/kg; ATE (Inhalation):	>= 2,5 - < 10

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			0,733 mg/l;	
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 workplace exposure limit :				
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
tin	7440-31-5 231-141-8	Not classified		>= 1 - < 10
molybdenum disulphide	1317-33-5 215-263-9	Not classified		>= 1 - < 10

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

If inhaled : Call a physician or poison control centre immediately.  
Remove person to fresh air. If signs/symptoms continue, get medical attention.  
Keep patient warm and at rest.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.  
If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact : Take off all contaminated clothing immediately.  
Get medical attention immediately if irritation develops and persists.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.  
Wash off immediately with plenty of water.

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- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.  
If eye irritation persists, consult a specialist.
- If swallowed : Move the victim to fresh air.  
If accidentally swallowed obtain immediate medical attention.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Rinse mouth with water.  
Aspiration hazard if swallowed - can enter lungs and cause damage.

### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Aspiration may cause pulmonary oedema and pneumonitis.

Inhalation may provoke the following symptoms:

Unconsciousness

Dizziness

Drowsiness

Headache

Nausea

Tiredness

Skin contact may provoke the following symptoms:

Erythema

Risks : Central nervous system depression  
Risk of product entering the lungs on vomiting after ingestion.  
Health injuries may be delayed.  
Causes skin irritation.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : ABC powder

Unsuitable extinguishing media : High volume water jet

### 5.2 Special hazards arising from the substance or mixture

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

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concentrations. Vapours can accumulate in low areas.

Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides  
Oxides of phosphorus  
Metal oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment. Exposure to decomposition products may be a hazard to health.

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

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

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

### 6.2 Environmental precautions

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

### 6.3 Methods and material for containment and cleaning up

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

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### 6.4 Reference to other sections

For personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

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

### 7.2 Conditions for safe storage, including any incompatibilities

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

### 7.3 Specific end use(s)

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

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

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Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
dimethyl ether	115-10-6	TWALimit Value - eight hours	1.000 ppm 1.920 mg/m <sup>3</sup>	2000/39/EC (2000-06-16)
Further information: Indicative				
		TWA8 Hour limit value	1.000 ppm 1.920 mg/m <sup>3</sup>	PT DL 305/2007 (2007-08-24)
copper	7440-50-8	VLE-MPTime Weighted Average (Dust and mist)	1 mg/m <sup>3</sup> (Copper)	PT OEL (2007-03-26)
		VLE-MPTime Weighted Average (Fumes)	0,2 mg/m <sup>3</sup> (Copper)	PT OEL (2007-03-26)
n-butyl acetate	123-86-4	VLE-MPTime Weighted Average	150 ppm	PT OEL (2007-03-26)
		VLE_CDSshort Term Exposure Limit	200 ppm	PT OEL (2007-03-26)
		STELShort term exposure limit	150 ppm 723 mg/m <sup>3</sup>	2019/1831/EU (2019-10-31)
Further information: Indicative				
		TWALimit Value - eight hours	50 ppm 241 mg/m <sup>3</sup>	2019/1831/EU (2019-10-31)
Further information: Indicative				
		TWA8 Hour limit value	50 ppm 241 mg/m <sup>3</sup>	PT DL 305/2007 (2021-01-06)
		STELShort term limit value	150 ppm 723 mg/m <sup>3</sup>	PT DL 305/2007 (2021-01-06)
tin	7440-31-5	VLE-MPTime Weighted Average	2 mg/m <sup>3</sup>	PT OEL (2014-11-14)
		TWA8 Hour limit value	2 mg/m <sup>3</sup> (Tin)	PT DL 305/2007 (2007-08-24)
		TWALimit Value - eight hours	2 mg/m <sup>3</sup> (Tin)	91/322/EEC (1991-07-05)
Further information: Indicative				
molybdenum disulphide	1317-33-5	VLE-MPTime Weighted Average (Inhalable fraction)	10 mg/m <sup>3</sup> (Molybdenum)	PT OEL (2014-11-14)
		VLE-MPTime	3 mg/m <sup>3</sup>	PT OEL



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		Weighted Average (Respirable fraction)	(Molybdenum)	(2014-11-14)
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### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
dimethyl ether	Workers	Inhalation	Long-term exposure	1894 mg/m <sup>3</sup>
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Workers	Skin contact	Long-term systemic effects	773 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	2035 mg/m <sup>3</sup>
Benzene, mono-C10-13-alkyl derivs., distn. residues	Workers	Inhalation	Long-term systemic effects	2,2 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	3,15 mg/kg bw/day
n-butyl acetate	Workers	Inhalation	Long-term systemic effects	300 mg/m <sup>3</sup>
	Workers	Inhalation	Acute systemic effects	600 mg/m <sup>3</sup>
	Workers	Dermal	Long-term local effects	11 mg/cm <sup>2</sup>

### 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
Benzene, mono-C10-13-alkyl derivs., distn. residues	Fresh water	0,001 mg/l
	Intermittent use/release	0,001 mg/l
	Marine water	0 mg/l
	Microbiological Activity in Sewage Treatment Systems	2 mg/l
	Fresh water sediment	16,5 mg/kg
	Marine sediment	1,65 mg/kg
n-butyl acetate	Soil	3,7 mg/kg
	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

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	Soil	0,09 mg/kg
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### 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 : butyl-rubber  
Break through time : > 10 min  
Protective index : Class 1

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

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

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

Filter type : Filter type A-P

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

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : aerosol  
Colour : red brown  
Odour : solvent-like

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Odour Threshold : No data available

Melting point/range : No data available

Boiling point/boiling range : < -20 °C (1.013 hPa)

Flammability (solid, gas) : Extremely flammable aerosol.

Upper explosion limit / Upper flammability limit : 26,2 %(V)

Lower explosion limit / Lower flammability limit : 0,6 %(V)

Flash point : -20 °C  
Method: Abel-Pensky

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : Not applicable  
substance/mixture is non-soluble (in water)

Viscosity

    Viscosity, dynamic : No data available

    Viscosity, kinematic : < 20,5 mm<sup>2</sup>/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 : 4.600 hPa (20 °C)

Relative density : 0,818 (20 °C)  
Reference substance: Water  
The value is calculated

Density : 0,82 g/cm<sup>3</sup>  
(20 °C)

Bulk density : No data available

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Relative vapour density : No data available

### 9.2 Other information

Explosives : Not explosive

Oxidizing properties : No data available

Self-ignition : No data available

Metal corrosion rate : Not corrosive to metals

Evaporation rate : No data available

Sublimation point : No data available

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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.  
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.

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## 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 toxicity estimate: > 2.000 mg/kg  
Method: Calculation method
- Acute inhalation toxicity : Symptoms: Inhalation may provoke the following symptoms:,  
Respiratory disorder, Dizziness, Drowsiness, Vomiting,  
Fatigue, Vertigo, Central nervous system depression  
Remarks: Respiration of solvent vapour may cause dizziness.  
Harmful by inhalation.
- Acute dermal toxicity : Symptoms: Redness, Local irritation

##### Components:

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

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

##### **copper:**

- Acute oral toxicity : Acute toxicity estimate: 500 mg/kg  
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008  
LD50 Oral (Rat): > 300 - 2.000 mg/kg  
Assessment: The component/mixture is moderately toxic after single ingestion.

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Acute inhalation toxicity : Acute toxicity estimate: 0,733 mg/l  
Test atmosphere: dust/mist  
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Assessment: The substance or mixture has no acute dermal 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

### **tin:**

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

Acute inhalation toxicity : LC50 (Rat): > 5 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

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

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### **molybdenum disulphide:**

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

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

### **Skin corrosion/irritation**

#### **Product:**

Remarks : Irritating to skin.

#### **Components:**

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

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

##### **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  
Result : No skin irritation

##### **tin:**

Assessment : No skin irritation  
Result : No skin irritation

##### **molybdenum disulphide:**

Assessment : No skin irritation  
Result : No skin irritation

### **Serious eye damage/eye irritation**

#### **Product:**

Remarks : Irritating to eyes.

#### **Components:**

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

Species : Rabbit

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Assessment : No eye irritation  
Result : No eye irritation

### **copper:**

Result : Eye irritation

### **n-butyl acetate:**

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

### **dimethyl ether:**

Assessment : No eye irritation  
Result : No eye irritation

### **tin:**

Assessment : No eye irritation  
Result : No eye irritation

### **molybdenum disulphide:**

Assessment : No eye irritation  
Result : No eye irritation

## **Respiratory or skin sensitisation**

### **Product:**

Remarks : This information is not available.

### **Components:**

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

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

#### **n-butyl acetate:**

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



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

### dimethyl ether:

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

### molybdenum disulphide:

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

### Germ cell mutagenicity

#### Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

#### Components:

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

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

#### 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:

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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

### **molybdenum disulphide:**

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

### **Carcinogenicity**

#### **Product:**

Remarks : No data available

#### **Components:**

##### **n-butyl acetate:**

Carcinogenicity -  
Assessment : Not classifiable as a human carcinogen.

##### **dimethyl ether:**

Species : Rat  
Application Route : inhalation (gas)  
Exposure time : 2 Years  
: 47 mg/l  
Method : OECD Test Guideline 453  
Result : negative

##### **molybdenum disulphide:**

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

### **Reproductive toxicity**

#### **Product:**

Effects on fertility : Remarks: No data available

Effects on foetal  
development : Remarks: No data available

#### **Components:**

##### **n-butyl acetate:**

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

### STOT - single exposure

#### Product:

Remarks : No data available

#### Components:

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

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.

##### molybdenum disulphide:

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

### STOT - repeated exposure

#### Product:

Remarks : No data available

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### Components:

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

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

#### **n-butyl acetate:**

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

#### **molybdenum disulphide:**

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

### **Repeated dose toxicity**

#### Product:

Remarks : This information is not available.

### Components:

#### **n-butyl acetate:**

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

### **Aspiration toxicity**

#### Product:

May be fatal if swallowed and enters airways.

May be fatal if swallowed and enters airways.

### Components:

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

May be fatal if swallowed and enters airways.

#### **n-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. Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

**Components:**

**molybdenum disulphide:**

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

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## SECTION 12: Ecological information

### 12.1 Toxicity

**Product:**

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

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

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

Toxicity to microorganisms : Remarks: No data available

**Components:**

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

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

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GLP: yes

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

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

### Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

#### copper:

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 10

### 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

Toxicity to daphnia and other : NOEC: 23 mg/l

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aquatic invertebrates  
(Chronic toxicity)                      Exposure time: 21 d  
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            : EC50 (Daphnia magna (Water flea)): > 4.400 mg/l  
aquatic invertebrates                      Exposure time: 48 h  
Test Type: static test

Toxicity to algae/aquatic                 : EC50 (green algae): 154,9 mg/l  
plants    Exposure time: 96 h

### tin:

Toxicity to fish                                : LC50 (Pimephales promelas (fathead minnow)): > 0,0124 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic                 : EC50 (Pseudokirchneriella subcapitata (green algae)): >  
plants    0,0192 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility

### molybdenum disulphide:

Toxicity to fish                                : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other            : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
aquatic invertebrates                      Exposure time: 48 h

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

## 12.2 Persistence and degradability

### Product:

Biodegradability                            : Remarks: No data available

Physico-chemical                           : Remarks: No data available

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removability

### Components:

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

Biodegradability : Result: Readily biodegradable.

#### **copper:**

Biodegradability : Result: Not 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: 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

#### **dimethyl ether:**

Partition coefficient: n-octanol/water : log Pow: 0,07 (25 °C)



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### 12.4 Mobility in soil

**Product:**

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

### 12.5 Results of PBT and vPvB assessment

**Product:**

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

**Components:**

**n-butyl acetate:**

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

**dimethyl ether:**

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

**tin:**

Assessment : Remarks: Not applicable

### 12.6 Endocrine disrupting properties

**Product:**

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

### 12.7 Other adverse effects

**Product:**

Additional ecological information : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

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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

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

### 14.2 UN proper shipping name

ADR : AEROSOLS  
RID : AEROSOLS  
IMDG : AEROSOLS  
(naphtha (petroleum), hydrotreated light, copper)  
IATA : Aerosols, flammable

### 14.3 Transport hazard class(es)

ADR : 2  
RID : 2  
IMDG : 2.1  
IATA : 2.1

### 14.4 Packing group

ADR  
Packing group : Not assigned by regulation

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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

### ADR

Environmentally hazardous : yes

### RID

Environmentally hazardous : yes

### IMDG

Marine pollutant : yes

## 14.6 Special precautions for user

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

## 14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

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- 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  
copper (Number on list 75)  
tin (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
- Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals (EU PIC) : Not applicable
- Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : Not applicable

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

E1 ENVIRONMENTAL HAZARDS

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)  
Volatile organic compounds (VOC) content: 70,39 %

### Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national

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regulations, where applicable.

### 15.2 Chemical safety assessment

This information is not available.

## SECTION 16: Other information

### Full text of H-Statements

EUH066	:	Repeated exposure may cause skin dryness or cracking.
H220	:	Extremely flammable gas.
H225	:	Highly flammable liquid and vapour.
H226	:	Flammable liquid and vapour.
H280	:	Contains gas under pressure; may explode if heated.
H302	:	Harmful if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H319	:	Causes serious eye irritation.
H336	:	May cause drowsiness or dizziness.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
EUH066	:	Repeated exposure may cause skin dryness or cracking.

### Full text of other abbreviations

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
91/322/EEC	:	Europe. Commission Directive 91/322/EEC on establishing indicative limit values
PT DL 305/2007	:	Portugal. Indicative Occupational Exposure Limits
PT OEL	:	Portugal. Security and Health at the Workplace - Occupational exposure limits of chemical agents

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2000/39/EC / TWA	:	Limit Value - eight hours
2019/1831/EU / TWA	:	Limit Value - eight hours
2019/1831/EU / STEL	:	Short term exposure limit
91/322/EEC / TWA	:	Limit Value - eight hours
PT DL 305/2007 / TWA	:	8 Hour limit value
PT DL 305/2007 / STEL	:	Short term limit value
PT OEL / VLE-MP	:	Time Weighted Average
PT OEL / VLE_CD	:	Short Term Exposure Limit

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

### Further information

#### Classification of the mixture:

Aerosol 1	H222, H229
Skin Irrit. 2	H315
STOT SE 3	H336
Asp. Tox. 1	H304

#### Classification procedure:

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

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Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

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