

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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

1.1 Product identifier

Product name : OKS 521

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 Spezialschmierstoffe GmbH
Ganghoferstr. 47
D-82216 Maisach-Gernlinden
Tel.: +49 8142 3051 500
Fax.: +49 8142 3051 599

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

1.4 Emergency telephone number

Emergency telephone number : 02/66101029 (Ospedale Niguarda - Milano)
0382/24444 (Istituto Maugeri - Pavia)
055/7947819 (Ospedale Careggi - Firenze)
06/3054343 (Policlinico Gemelli - Roma)
081/7472870 (Ospedale Cardarelli - Napoli)
035/269469 - 800.883300 (Ospedali Riuniti - Bergamo)

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.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Chronic aquatic toxicity, 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.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
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.

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.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

Hazardous components which must be listed on the label:

n-butyl acetate

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha

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 : Active substance with propellant
Solvent
Molybdenum disulfide
graphite

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration limits M-Factor Notes	Concentration (% w/w)
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha	64742-49-0 265-151-9 649-328-00-1	Flam. Liq.2; H225 Skin Irrit.2; H315 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411	Note P	≥ 10 - < 20
1-Butanol, titanium(4+) salt, homopolymer	9022-96-2	Eye Irrit.2; H319		≥ 1 - < 10
propane	74-98-6 200-827-9 601-003-00-5 01-2119486944-21-XXXX	Flam. Gas1; H220 Press. GasCompr. Gas; H280	Note U (table 3.1)	≥ 1 - < 10
n-hexane	110-54-3 203-777-6 601-037-00-0	Flam. Liq.2; H225 Skin Irrit.2; H315 Repr.2; H361f STOT SE3; H336 STOT RE2; H373 Asp. Tox.1; H304 Aquatic Chronic2;	≥ 5 % STOT RE2, H373 ** *** ,	≥ 1 - $< 2,5$

SAFETY DATA SHEET

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



OKS 521

Version
2.1

Revision Date:
08.08.2018

Date of last issue: 04.04.2018
Date of first issue: 09.07.2016

Print Date:
08.08.2018

		H411		
Substances with a workplace exposure limit :				
n-butyl acetate	123-86-4 204-658-1 607-025-00-1 01-2119485493-29-XXXX	Flam. Liq.3; H226 STOT SE3; H336		>= 20 - < 30
molybdenum disulphide	1317-33-5 215-263-9			>= 10 - < 20
butane	106-97-8 203-448-7 601-004-00-0	Flam. Gas1; H220 Press. GasCompr. Gas; H280	Note U (table 3.1), Note C	>= 10 - < 20
dimethyl ether	115-10-6 204-065-8 603-019-00-8 01-2119472128-37-XXXX	Flam. Gas1; H220 Press. GasLiquefied gas; H280	Note U (table 3.1)	>= 10 - < 20
isobutane	75-28-5 200-857-2 601-004-00-0 01-2119485395-27-XXXX	Flam. Gas1; H220 Press. GasCompr. Gas; H280	Note U (table 3.1), Note C	>= 1 - < 10
Graphite	7782-42-5 231-955-3			>= 1 - < 10

For explanation of abbreviations see section 16.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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.
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Get medical attention immediately if irritation develops and persists.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.
If easy to do, remove contact lens, if worn.
Seek medical advice.
- If swallowed : Move the victim to fresh air.
If accidentally swallowed obtain immediate medical attention.
Keep respiratory tract clear.
Do NOT induce vomiting.
Rinse mouth with water.
Aspiration hazard if swallowed - can enter lungs and cause damage.

4.2 Most important symptoms and effects, both acute and delayed

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

Aspiration may cause pulmonary oedema and pneumonitis.
- Risks : Central nervous system depression
Risk of product entering the lungs on vomiting after ingestion.
Health injuries may be delayed.
Causes skin irritation.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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 may cause evolution of:
Carbon oxides
Metal oxides
Sulphur oxides

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.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. In the case of respirable dust and/or fumes, use self-contained breathing apparatus. 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.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

Only qualified personnel equipped with suitable protective equipment may intervene.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

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

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not use in areas without adequate ventilation. Do not breathe vapours or spray mist. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid exposure - obtain special instructions before use. 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.

SAFETY DATA SHEET

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



OKS 521

Version 2.1 Revision Date: 08.08.2018 Date of last issue: 04.04.2018 Print Date: 08.08.2018
Date of first issue: 09.07.2016

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) : Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
dimethyl ether	115-10-6	TWA	1.000 ppm 1.920 mg/m ³	2000/39/EC (2000-06-16)
Further information	Indicative			
		TWA	1.000 ppm 1.920 mg/m ³	IT OEL (2009-08-05)
n-hexane	110-54-3	TWA	20 ppm 72 mg/m ³	2006/15/EC (2006-02-09)
Further information	Indicative			
		TWA	20 ppm 72 mg/m ³	IT OEL (2008-02-26)

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
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha	Workers	Inhalation	Long-term systemic effects	1300 mg/m ³
	Workers	Inhalation	Long-term local effects	840 mg/m ³
	Workers	Inhalation	Acute local effects	1100 mg/m ³
dimethyl ether	Workers	Inhalation	Long-term exposure	1894 mg/m ³

SAFETY DATA SHEET

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



OKS 521

Version 2.1 Revision Date: 08.08.2018 Date of last issue: 04.04.2018 Print Date: 08.08.2018
Date of first issue: 09.07.2016

n-hexane	Workers	Inhalation	Long-term systemic effects	75 mg/m ³
	Workers	Skin contact	Long-term systemic effects	11 mg/kg

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

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

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 : Safety glasses with side-shields conforming to EN166

Hand protection

Material : butyl-rubber
Protective index : Class 1

Remarks : Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. 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.

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.

SAFETY DATA SHEET

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



OKS 521

Version 2.1	Revision Date: 08.08.2018	Date of last issue: 04.04.2018 Date of first issue: 09.07.2016	Print Date: 08.08.2018
----------------	------------------------------	---	---------------------------

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	:	black
Odour	:	characteristic
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point/range	:	No data available
Boiling point/boiling range	:	-161,0 °C (1.013 hPa)
Flash point	:	-60 °C Method: Abel-Pensky
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Extremely flammable aerosol.
Upper explosion limit	:	18,6 %(V)
Lower explosion limit	:	1,1 %(V)
Vapour pressure	:	4.600 hPa (20 °C)
Relative vapour density	:	No data available
Density	:	0,79 g/cm ³ (20 °C)
Bulk density	:	No data available
Solubility(ies)	:	
Water solubility	:	insoluble
Solubility in other solvents	:	No data available

SAFETY DATA SHEET

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



OKS 521

Version 2.1	Revision Date: 08.08.2018	Date of last issue: 04.04.2018 Date of first issue: 09.07.2016	Print Date: 08.08.2018
----------------	------------------------------	---	---------------------------

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

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : No data available

 Viscosity, kinematic : < 20,5 mm²/s (40 °C)

Explosive properties : Not explosive

Oxidizing properties : No data available

9.2 Other information

Sublimation point : No data available

Metal corrosion rate : Not corrosive to metals

Self-ignition : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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 inhalation toxicity : Remarks: Respiration of solvent vapour may cause dizziness.
Symptoms: Inhalation may provoke the following symptoms:,
Respiratory disorder, Dizziness, Drowsiness, Vomiting,
Fatigue, Vertigo, Central nervous system depression
- Acute dermal toxicity : Symptoms: Redness, Local irritation

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

- Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
GLP: yes
- 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 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal
toxicity

n-hexane:

- Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC50 (Rat): 259,35 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
- Acute dermal toxicity : LD50 (Rabbit): 3.350 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal
toxicity

SAFETY DATA SHEET

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



OKS 521

Version 2.1	Revision Date: 08.08.2018	Date of last issue: 04.04.2018 Date of first issue: 09.07.2016	Print Date: 08.08.2018
----------------	------------------------------	---	---------------------------

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

molybdenum disulphide:

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

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

butane:

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

dimethyl ether:

Acute inhalation toxicity : LC50 (Rat): 309 mg/l
Exposure time: 4 h
Test atmosphere: gas

isobutane:

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

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

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

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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.

molybdenum disulphide:

Assessment: No skin irritation
Result: No skin irritation

dimethyl ether:

Assessment: No skin irritation
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Result: Eye irritation

Remarks: Irritating to eyes.

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

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

1-Butanol, titanium(4+) salt, homopolymer:

Result: Eye irritation

n-hexane:

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

n-butyl acetate:

Species: Rabbit

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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

molybdenum disulphide:

Assessment: No eye irritation
Result: No eye irritation

dimethyl ether:

Assessment: No eye irritation
Result: No eye irritation

Respiratory or skin sensitisation

Product:

Remarks: This information is not available.

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

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

n-hexane:

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

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.

molybdenum disulphide:

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

dimethyl ether:

Assessment: Does not cause skin sensitisation.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

Result: Does not cause skin sensitisation.

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Components:

n-butyl acetate:

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

: Test Type: Chromosome aberration test in vitro
Species: 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.

molybdenum disulphide:

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

dimethyl ether:

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

Genotoxicity in vivo : Species: Drosophila melanogaster (vinegar fly)
Application Route: inhalation (gas)
Method: OECD Test Guideline 477
Result: negative

Carcinogenicity

Product:

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

Remarks: No data available

Components:

n-butyl acetate:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

molybdenum disulphide:

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

dimethyl ether:

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

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Components:

n-hexane:

Reproductive toxicity - Assessment : Suspected human reproductive toxicant

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

SAFETY DATA SHEET

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



OKS 521

Version 2.1	Revision Date: 08.08.2018	Date of last issue: 04.04.2018 Date of first issue: 09.07.2016	Print Date: 08.08.2018
----------------	------------------------------	---	---------------------------

dimethyl ether:

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

STOT - single exposure

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

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

n-hexane:

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.

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

Components:

n-hexane:

Exposure routes: Inhalation
Target Organs: Central nervous system
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

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.

SAFETY DATA SHEET

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



OKS 521

Version 2.1	Revision Date: 08.08.2018	Date of last issue: 04.04.2018 Date of first issue: 09.07.2016	Print Date: 08.08.2018
----------------	------------------------------	---	---------------------------

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:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

May be fatal if swallowed and enters airways.

n-hexane:

May be fatal if swallowed and enters airways.

n-butyl acetate:

No aspiration toxicity classification

dimethyl ether:

No aspiration toxicity classification

Further information

Product:

Remarks: 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.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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

Toxicity to algae : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 10 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 4,5 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 3,1 mg/l
Exposure time: 72 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

n-hexane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 12,51 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 21,85 mg/l
Exposure time: 48 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 9,285 mg/l
Exposure time: 72 h

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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 : 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

molybdenum disulphide:

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

dimethyl ether:

- Toxicity to fish : LC50 (Poecilia reticulata (guppy)): > 4.100 mg/l
Exposure time: 96 h
Test Type: semi-static test
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 4.400 mg/l
Exposure time: 48 h
Test Type: static test
- Toxicity to algae : EC50 (green algae): 154,9 mg/l
Exposure time: 96 h

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical
removability : Remarks: No data available

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: rapidly biodegradable
Biodegradation: 90,35 %
Exposure time: 28 d

n-hexane:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: rapidly biodegradable
Biodegradation: 21 %
Exposure time: 28 d
GLP: yes

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).

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Partition coefficient: n-octanol/water : log Pow: 3,4 - 5,2

propane:

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

n-hexane:

Bioaccumulation : Bioconcentration factor (BCF): 501,19

Partition coefficient: n-octanol/water : log Pow: 4 (20 °C)
pH: 7

n-butyl acetate:

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

butane:

Partition coefficient: n-octanol/water : log Pow: 2,89
Method: OECD Test Guideline 107

dimethyl ether:

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

isobutane:

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

12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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.

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:

SECTION 14: Transport information

14.1 UN number

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

14.2 UN proper shipping name

SAFETY DATA SHEET

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



OKS 521

Version 2.1	Revision Date: 08.08.2018	Date of last issue: 04.04.2018 Date of first issue: 09.07.2016	Print Date: 08.08.2018
----------------	------------------------------	---	---------------------------

ADR : AEROSOLS
IMDG : AEROSOLS
IATA : Aerosols, flammable

14.3 Transport hazard class(es)

ADR : 2
IMDG : 2.1
IATA : 2.1

14.4 Packing group

ADR
Packing group : Not assigned by regulation
Classification Code : 5F
Labels : 2.1
Tunnel restriction code : (D)

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

14.5 Environmental hazards

ADR
Environmentally hazardous : no

IMDG
Marine pollutant : no

IATA (Passenger)
Environmentally hazardous : no

IATA (Cargo)
Environmentally hazardous : no

14.6 Special precautions for user

No special precautions required.

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

Remarks : Not applicable for product as supplied.

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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 (EC) No 850/2004 on persistent organic pollutants : 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

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

		Quantity 1	Quantity 2
P3a	FLAMMABLE AEROSOLS	150 t	500 t
P5c			
34	Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2.500 t	25.000 t

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

P2

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 74,95 %
Volatile CMR compounds: 19,84 %
Remarks: VOC content excluding water

Other regulations:

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

Legislative Decree April 9, 2008, 81 (Implementation of Article 1 of the Law of 3 August 2007, n. 123, concerning the protection of health and safety in the workplace.) and subsequent amendments

Legislative Decree April 3, 2006, n.152, (Environmental standards) and subsequent amendments

Legislative Decree February 6, 2009, 21 (Regulations for the execution of the provisions laid down in Regulation (EC) no. 648/2004 on detergents)

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H220 : Extremely flammable gas.
H225 : Highly flammable liquid and vapour.
H226 : Flammable liquid and vapour.
H280 : Contains gas under pressure; may explode if heated.
H304 : May be fatal if swallowed and enters airways.
H315 : Causes skin irritation.
H319 : Causes serious eye irritation.
H336 : May cause drowsiness or dizziness.
H361f : Suspected of damaging fertility.
H373 : May cause damage to organs through prolonged or repeated exposure.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

- ** : Route of exposure cannot be excluded: For certain hazard classes, e.g. STOT, the route of exposure should be indicated in the hazard statement only if it is conclusively proven that no other route of exposure can cause the hazard in accordance to the criteria in Annex I. Under Directive 67/548/EEC the route of exposure was indicated for classifications with R48 when there was data justifying the classification for this route of exposure. The classification under 67/548/EEC indicating the route of exposure has been translated into the corresponding class and category according to this Regulation, but with a general hazard statement not specifying the route of exposure as the necessary information is not available.
- *** : Hazard statements for reproductive toxicity: Hazard statements H360 and H361 indicate a general concern for effects on fertility and/or development: 'May damage/Suspected of damaging fertility or the unborn child'. According to the criteria, the general hazard statement can be replaced by the hazard statement indicating the specific effect of concern in accordance with Section 1.1.2.1.2. When the other differentiation is not mentioned, this is due to evidence proving no such effect, inconclusive data or no data and the obligations in Article 4(3) shall apply for that differentiation. In order not to lose information from the harmonised classifications for fertility and developmental effects under Directive 67/548/EEC, the classifications have been translated only for those effects classified under that Directive
- 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.

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

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

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; 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
Eye Irrit. 2	H319
STOT SE 3	H336
Asp. Tox. 1	H304
Aquatic Chronic 3	H412

Classification procedure:

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

This safety datasheet applies only to products originally packaged and labelled by OKS Spezialschmierstoffe. The information contained therein is protected by copyright and must not be reproduced or amended without the express written approval of OKS Spezialschmierstoffe. This document may be passed on only to the extent required by law. Any dissemination of our safety datasheets (e.g. as a document for download from the Internet) beyond this legally required extent is not permitted without express written consent. OKS Spezialschmierstoffe provides its customers with amended safety datasheets as prescribed by law. The customer is responsible for passing on safety datasheets and any amendments contained therein to its own customers, employees and other users of the product. OKS Spezialschmierstoffe provides no guarantee that safety datasheets received by users from third parties are up-to-date. All information and instructions in this safety datasheets were compiled to the best of our knowledge and are based on the information available to us. The data provided are intended to describe the product in relation to the required safety measures; they are neither an assurance of

SAFETY DATA SHEET

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



OKS 521

Version	Revision Date:	Date of last issue: 04.04.2018	Print Date:
2.1	08.08.2018	Date of first issue: 09.07.2016	08.08.2018

characteristics nor a guarantee of the product's suitability for particular applications and do not justify any contractual legal relationships.