

SAFETY DATA SHEET

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



OKS 241

Version 2.0	Revision Date: 09.08.2018	Date of last issue: 21.06.2016 Date of first issue: 30.03.2013	Print Date: 09.08.2018
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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 Sub-
stance/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 : +49 8142 3051 517

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 ex-
posure, Category 3, Central nervous
system

H336: May cause drowsiness or dizziness.

Aspiration hazard, Category 1

H304: May be fatal if swallowed and enters air-
ways.

Acute aquatic toxicity, Category 1

H400: Very toxic to aquatic life.

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Chronic aquatic toxicity, Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H304 May be fatal if swallowed and enters air-ways.
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.
P391 Collect spillage.

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:

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.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Active substance with propellant
Solvent mixture

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 hy- drogen treated naph- tha	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	$\geq 25 - < 30$
copper flakes (coated with aliphatic acid)	7440-50-8 231-159-6 029-019-01-X	Aquatic Acute1; H400	M-Factor: 10/1	$\geq 2.5 - < 10$
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; H411	≥ 5 % STOT RE2, H373 ** *** ,	$\geq 1 - < 2.5$
Substances with a workplace exposure limit :				
dimethyl ether	115-10-6 204-065-8 603-019-00-8 01-2119472128-37- XXXX	Flam. Gas1; H220 Press. GasLique- fied gas; H280	Note U (table 3.1)	$\geq 30 - < 50$
n-butyl acetate	123-86-4 204-658-1 607-025-00-1 01-2119485493-29- XXXX	Flam. Liq.3; H226 STOT SE3; H336		$\geq 1 - < 10$
tin	7440-31-5			$\geq 1 - < 10$

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	231-141-8			
molybdenum disulphide	1317-33-5 215-263-9			$\geq 1 - < 10$

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

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

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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.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : ABC powder

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Fire may cause evolution of:
Carbon oxides
Metal oxides
Oxides of phosphorus
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

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health.

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

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

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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.

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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) : 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	400 ppm 766 mg/m ³	GB EH40 (2005-04-06)
		STEL	500 ppm 958 mg/m ³	GB EH40 (2005-04-06)
copper flakes (coated with aliphatic acid)	7440-50-8	TWA (Fumes)	0.2 mg/m ³ (Copper)	GB EH40 (2011-12-01)
		TWA (Dusts and mists)	1 mg/m ³ (Copper)	GB EH40 (2011-12-01)

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		STEL (Dusts and mists)	2 mg/m ³ (Copper)	GB EH40 (2011-12-01)
n-butyl acetate	123-86-4	TWA	150 ppm 724 mg/m ³	GB EH40 (2005-04-06)
		STEL	200 ppm 966 mg/m ³	GB EH40 (2005-04-06)
tin	7440-31-5	TWA	2 mg/m ³ (Tin)	91/322/EEC (1991-07-05)
Further information	Indicative, Existing scientific data on health effects appear to be particularly limited			
		TWA	2 mg/m ³ (Tin)	GB EH40 (2005-04-06)
		STEL	4 mg/m ³ (Tin)	GB EH40 (2005-04-06)
molybdenum disulphide	1317-33-5	TWA	10 mg/m ³ (Molybdenum)	GB EH40 (2005-04-06)
		STEL	20 mg/m ³ (Molybdenum)	GB EH40 (2005-04-06)
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	GB EH40 (2007-08-01)
Further information	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			

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 ³
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
Benzene, mono-C10-13-alkyl derivs., distn. residues	Workers	Inhalation	Long-term systemic effects	3.2 mg/m ³
	Workers	Skin contact	Long-term systemic effects	4.3 mg/kg bw/day
n-hexane	Workers	Inhalation	Long-term systemic effects	75 mg/m ³
	Workers	Skin contact	Long-term systemic effects	11 mg/kg

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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
Benzene, mono-C10-13-alkyl derivs., distn. residues	Soil	0.045 mg/kg
	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	1.65 mg/kg
	Marine sediment	0.165 mg/kg
	Soil	0.329 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.
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	aerosol
Colour	:	red brown
Odour	:	solvent-like
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point/range	:	No data available
Boiling point/boiling range	:	< -20 °C (1,013 hPa)
Flash point	:	< -20 °C Method: Abel-Pensky
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Extremely flammable aerosol.
Upper explosion limit	:	26.2 %(V)
Lower explosion limit	:	0.6 %(V)
Vapour pressure	:	4,600 hPa (20 °C)
Relative vapour density	:	No data available
Density	:	0.82 g/cm ³ (20 °C)
Bulk density	:	No data available
Solubility(ies)	:	
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available

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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.

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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 : Remarks: Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
Symptoms: Redness, Local irritation, Skin disorders

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

copper flakes (coated with aliphatic acid):

- Acute oral toxicity : Acute toxicity estimate: 500.0 mg/kg
Method: Converted acute toxicity point estimate

n-hexane:

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401

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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

dimethyl ether:

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

n-butyl acetate:

Acute oral toxicity : LD50 Oral (Rat): 10,760 mg/kg

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

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.

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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

n-hexane:

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

dimethyl ether:

Assessment: No skin irritation
Result: No skin irritation

n-butyl acetate:

Result: Repeated exposure may cause skin dryness or cracking.

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: Contact with eyes may cause irritation.

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

n-hexane:

Species: Rabbit
Assessment: No eye irritation

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Method: OECD Test Guideline 405
Result: No eye irritation

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:

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.

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.

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Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Components:

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

molybdenum disulphide:

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

Carcinogenicity

Product:

Remarks: No data available

Components:

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

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Effects on foetal development : Remarks: No data available

Components:

n-hexane:

Reproductive toxicity - Assessment : Suspected human reproductive toxicant

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

Assessment: May cause drowsiness or dizziness.

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.

molybdenum disulphide:

Assessment: The substance or mixture is not classified as specific target organ toxicant, re-

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peated exposure.

Repeated dose toxicity

Product:

Remarks: This information is not available.

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

May be fatal if swallowed and enters airways.

Components:

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.

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.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: Very toxic to aquatic organisms.

Toxicity to daphnia and other : Remarks: No data available

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aquatic invertebrates

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 : EC50 (Daphnia magna (Water flea)): 4.5 mg/l
aquatic invertebrates : 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.

copper flakes (coated with aliphatic acid):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.0094 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.044 mg/l
aquatic invertebrates : Exposure time: 48 h

M-Factor (Acute aquatic tox- : 10
icity)

M-Factor (Chronic aquatic : 1
toxicity)

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

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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

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

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 : EC50 (Pseudokirchneriella subcapitata (green algae)): > 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 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

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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

copper flakes (coated with aliphatic acid):

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

n-hexane:

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

dimethyl ether:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

n-butyl acetate:

Biodegradability : Result: Readily biodegradable.

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).

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Components:

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

Partition coefficient: n-octanol/water : log Pow: 3.4 - 5.2

n-hexane:

Bioaccumulation : Bioconcentration factor (BCF): 501.19

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

dimethyl ether:

Partition coefficient: n-octanol/water : log Pow: 0.07 (25 °C)

n-butyl acetate:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 2.3

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:

dimethyl ether:

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

tin:

Assessment : Remarks: Not applicable

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12.6 Other adverse effects

Product:

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

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

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

14.3 Transport hazard class(es)

ADR : 2
IMDG : 2.1
IATA : 2.1

14.4 Packing group

ADR

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

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

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.

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

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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
E1	ENVIRONMENTAL HAZARDS	100 t	200 t
P2			
E1			
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

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 %
Volatile CMR compounds: 28.03 %
Remarks: VOC content excluding water

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Other regulations:

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

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H220	:	Extremely flammable gas.
H225	:	Highly flammable liquid and vapour.
H226	:	Flammable liquid and vapour.
H280	:	Contains gas under pressure; may explode if heated.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H336	:	May cause drowsiness or dizziness.
H361f	:	Suspected of damaging fertility.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

** : 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 ha-

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- zard 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 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 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 Sub-

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stances 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

Aquatic Acute 1 H400

Aquatic Chronic 2 H411

Classification procedure:

Based on product data or assessment

Calculation method

Calculation method

Based on product data or assessment

Calculation method

Calculation method

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