OKS 241 防卡膏 (铜膏），喷剂

Version	Revision Date:	Date of last issue: 2024-11-11	
4.0	2026-06-22	Date of first issue: 2014-04-07	Print Date: 2026-06-22

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	OKS 241 防卡膏 (铜膏），喷剂
Chemical nature	:	Active substance with propellant Solvent mixture

Manufacturer or supplier's details

Company	:	OKS Spezialschmierstoffe GmbH Ganghoferstr. 47 82216 Maisach Germany Tel.: +49 8142 3051-500 info@oks-germany.com
E-mail address of person responsible for the SDS	:	mcm@oks-germany.com
National contact	:	
Emergency telephone number	:	+86 532 8388 9090 (NRCC, only for hazardous chemicals) +86 21 69225521

Recommended use of the chemical and restrictions on use

Recommended use	:	Lubricant spray
Restrictions on use	:	Restricted to professional users.

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	:	aerosol
Colour	:	red brown
Odour	:	solvent-like

Extremely flammable aerosol. Pressurised container: May burst if heated. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause damage to organs (Central nervous system) through prolonged or repeated exposure. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

GHS Classification

Aerosols	:	Category 1
Skin irritation	:	Category 2

Specific target organ toxicity - single exposure	:	Category 3 (Narcotic effects)
Specific target organ toxicity - repeated exposure	:	Category 2 (Central nervous system)
Aspiration hazard	:	Category 1
Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 2

GHS label elements

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.
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H411 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.
P260 Do not breathe mist.
P261 Avoid breathing mist.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves.

Response:

P301 + P316 IF SWALLOWED: Get emergency medical help immediately.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 + P319 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell.
P331 Do NOT induce vomiting.
P332 + P317 If skin irritation occurs: Get medical help.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Disposal:

P501 Dispose of contents/containers according the local government requirements.

Physical and chemical hazards

Extremely flammable aerosol. Pressurised container: May burst if heated.

Health hazards

May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

Environmental hazards

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Dimethyl ether	115-10-6	>= 30 -< 50
Naphtha (petroleum), hydrotreated light	64742-49-0	>= 25 -< 30
copper	7440-50-8	>= 2.5 -< 10
n-Butyl acetate	123-86-4	>= 2.5 -< 10
n-hexane	110-54-3	>= 1 -< 2.5

4. FIRST AID MEASURES

If inhaled	:	Take victim immediately to hospital. 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.
In case of eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes. Get medical attention immediately.
If swallowed	:	Move the victim to fresh air. If accidentally swallowed obtain immediate medical attention. Keep respiratory tract clear. Do NOT induce vomiting. Rinse mouth with water. Aspiration hazard if swallowed - can enter lungs and cause damage.
Most important symptoms and effects, both acute and delayed	:	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 May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure. Central nervous system depression Risk of product entering the lungs on vomiting after ingestion.

Health injuries may be delayed.

Notes to physician : Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : ABC powder

Unsuitable extinguishing media : High volume water jet

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 concentrations. Vapours can accumulate in low areas.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NOx)
Sulphur oxides
Oxides of phosphorus
Metal oxides

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

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : 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.

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.
Methods and materials for containment and 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.
Prevention of secondary hazards	:	Only qualified personnel equipped with suitable protective equipment may intervene.

7. HANDLING AND STORAGE

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.
Avoidance of contact	:	Oxidizing agents

Storage

Conditions for safe storage	:	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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
copper	7440-50-8	PC-TWA (Dust)	1 mg/m3 (Copper)	CN OEL (2019-08-27)
		PC-TWA (Fumes)	0.2 mg/m3 (Copper)	CN OEL (2019-08-27)
		TWA (Dust and mist)	1 mg/m3 (Copper)	ACGIH (2025-01-01)
		TWA (Fumes)	0.2 mg/m3 (Copper)	ACGIH (2025-01-01)
n-Butyl acetate	123-86-4	PC-TWA	200 mg/m3	CN OEL (2019-08-27)
		PC-STEL	300 mg/m3	CN OEL (2019-08-27)
		TWA	50 ppm	ACGIH (2025-01-01)
		STEL	150 ppm	ACGIH (2025-01-01)
Tin	7440-31-5	TWA (Inhalable particulate matter)	2 mg/m3 (Tin)	ACGIH (2025-01-01)
molybdenum disulphide	1317-33-5	PC-TWA	6 mg/m3 (Molybdenum)	CN OEL (2019-08-27)
		TWA (Inhalable particulate matter)	10 mg/m3 (Molybdenum)	ACGIH (2025-01-01)
		TWA (Respirable particulate matter)	3 mg/m3 (Molybdenum)	ACGIH (2025-01-01)
n-hexane	110-54-3	PC-TWA	100 mg/m3	CN OEL (2019-08-27)
	Further information: Skin			
		PC-STEL	180 mg/m3	CN OEL (2019-08-27)

	Further information: Skin			
		TWA	50 ppm	ACGIH (2025-01-01)

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
n-hexane	110-54-3	2,5-hexanedione	Urine	After shift	35 micromol per litre	CN BEI (2019-08-27)
		2,5-hexanedione	Urine	After shift	4 mg/l	CN BEI (2019-08-27)
		2,5-Hexanedione	Urine	End of shift	0.5 mg/l	ACGIH BEI (2025-01-01)

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

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

Eye/face protection : Safety glasses with side-shields

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.

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.

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

to the concentration and amount of the dangerous substance at the specific workplace.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	aerosol
Colour	:	red brown
Odour	:	solvent-like
Odour Threshold	:	No data available
pH	:	Not applicable substance/mixture is non-soluble (in water)
Melting point/ range	:	No data available
Boiling point/boiling range	:	< -20 °C (1,013 hPa)
Flash point	:	-20 °C Method: Abel-Pensky
Flammability (solid, gas)	:	Extremely flammable aerosol.
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	26.2 %(V)
Lower explosion limit / Lower flammability limit	:	0.6 %(V)
Vapour pressure	:	4,600 hPa (20 °C)
Relative vapour density	:	No data available

Relative density	:	0.818 (20 °C) Reference substance: Water The value is calculated
Density	:	0.82 g/cm3 (20 °C)
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	< 20.5 mm2/s (40 °C)
Evaporation rate	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	No data available
Sublimation point	:	No data available
Metal corrosion rate	:	Not corrosive to metals

10. STABILITY AND REACTIVITY

Reactivity	:	No hazards to be specially mentioned.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.

Conditions to avoid	:	Heat, flames and sparks. Strong sunlight for prolonged periods. Risk of receptacle bursting.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Based on available data, the classification criteria are not met.

Product:

Acute oral toxicity	:	Remarks: Effects due to ingestion may include: Symptoms: Central nervous system depression Acute toxicity estimate: > 5,000 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.
Acute dermal toxicity	:	Symptoms: Redness, Local irritation

Components:

Dimethyl ether:

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

Naphtha (petroleum), hydrotreated light:

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:

Acute oral toxicity : LD50 Oral (Rat): > 300 - 2,000 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

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

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

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks	:	This information is not available.

Components:

Dimethyl ether:

Assessment	:	No skin irritation
Result	:	No skin irritation

Naphtha (petroleum), hydrotreated light:

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

n-Butyl acetate:

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

n-hexane:

Species	:	Rabbit
Assessment	:	Irritating to skin.

Method	:	OECD Test Guideline 404
Result	:	Irritating to skin.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Product:

Remarks	:	This information is not available.

Components:

Dimethyl ether:

Result	:	No eye irritation
Assessment	:	No eye irritation

Naphtha (petroleum), hydrotreated light:

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

copper:

Result	:	Eye irritation

n-Butyl acetate:

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

n-hexane:

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

Respiratory or skin sensitisation

Skin sensitisation

Based on available data, the classification criteria are not met.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Product:

Remarks : This information is not available.

Components:

Dimethyl ether:

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

Naphtha (petroleum), hydrotreated light:

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-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.

n-hexane:

Species	:	Mouse
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

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

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.

n-hexane:

Germ cell mutagenicity -	:	Weight of evidence does not support classification as a germ

Assessment	cell mutagen.

Carcinogenicity

Based on available data, the classification criteria are not met.

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

n-Butyl acetate:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

n-hexane:

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Reproductive toxicity

Based on available data, the classification criteria are not met.

Product:

Effects on fertility	:	Remarks: No data available
Effects on foetal development	:	Remarks: No data available

Components:

Dimethyl ether:

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

n-Butyl acetate:

Effects on fertility	:	Test Type: Two-generation study Species: Rat Application Route: inhalation (vapour) General Toxicity - Parent: NOAEC: 750 mg/l General Toxicity F1: NOAEC: 750 mg/l General Toxicity F2: NOAEC: 750 mg/l Method: OECD Test Guideline 416 Result: Embryotoxic effects and adverse effects on the offspring were detected.
Reproductive toxicity - Assessment	:	- Fertility - No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments. - Teratogenicity - No toxicity to reproduction

n-hexane:

Reproductive toxicity - Assessment	:	- Fertility - Suspected human reproductive toxicant

STOT - single exposure

May cause drowsiness or dizziness.

Product:

Remarks	:	No data available

Components:

Naphtha (petroleum), hydrotreated light:

Exposure routes	:	Inhalation
Target Organs	:	Central nervous system
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.

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.

STOT - repeated exposure

May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

Product:

Remarks	:	No data available

Components:

n-Butyl acetate:

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

n-hexane:

Target Organs	:	Central nervous system
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

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

May be fatal if swallowed and enters airways.

Product:

May be fatal if swallowed and enters airways.

Components:

Dimethyl ether:

No aspiration toxicity classification

Naphtha (petroleum), hydrotreated light:

May be fatal if swallowed and enters airways.

n-Butyl acetate:

No aspiration toxicity classification

n-hexane:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks	:	Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

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

Dimethyl ether:

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): > 4,100 mg/l Exposure time: 96 h Test Type: semi-static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 4,400 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	EC50 (green algae): 154.9 mg/l Exposure time: 96 h

Naphtha (petroleum), hydrotreated light:

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/aquatic plants	:	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:

M-Factor (Acute aquatic toxicity)	:	10
M-Factor (Chronic aquatic toxicity)	:	1

Ecotoxicology Assessment

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

n-Butyl acetate:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 18 mg/l Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia (water flea)): 44 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): 397 mg/l Exposure time: 72 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 23 mg/l Exposure time: 21 d Test Type: Reproduction Test GLP: yes
Toxicity to microorganisms	:	EC50 (Tetrahymena pyriformis): 356 mg/l Exposure time: 40 h Test Type: Growth inhibition

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/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 9.285 mg/l Exposure time: 72 h

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available
Physico-chemical removability	:	Remarks: No data available

Components:

Dimethyl ether:

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

Naphtha (petroleum), hydrotreated light:

Biodegradability	:	aerobic Inoculum: activated sludge Result: rapidly biodegradable Biodegradation: 90.35 % Exposure time: 28 d

copper:

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

n-Butyl acetate:

Biodegradability	:	Primary biodegradation Result: rapidly biodegradable Biodegradation: 83 % Exposure time: 28 d Method: OECD Test Guideline 301D

n-hexane:

Biodegradability	:	aerobic Inoculum: activated sludge Result: rapidly biodegradable Biodegradation: 98 % Exposure time: 28 d Method: OECD Test Guideline 301F GLP: yes Remarks: Information given is based on data obtained from similar substances.

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: No data available

Components:

Dimethyl ether:

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

Naphtha (petroleum), hydrotreated light:

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

n-Butyl acetate:

Partition coefficient: n-octanol/water	:	log Pow: 2.3 (25 °C) pH: 7 Method: OECD Test Guideline 117 GLP: yes

n-hexane:

Bioaccumulation	:	Bioconcentration factor (BCF): 501.19

Partition coefficient: n-octanol/water	:	log Pow: 3.42 - 5.8 (20 °C) pH: 7

Mobility in soil

Product:

Mobility	:	Remarks: No data available
Distribution among environmental compartments	:	Remarks: No data available

Other adverse effects

Product:

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

Components:

Dimethyl ether:

Results of PBT and vPvB assessment	:	Non-classified vPvB substance Non-classified PBT substance

n-Butyl acetate:

Results of PBT and vPvB assessment	:	Non-classified PBT substance Non-classified vPvB substance

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Do not dispose of with domestic refuse. Dispose of as hazardous waste in compliance with local and national regulations.
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.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1950
Proper shipping name	:	AEROSOLS
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 1950
Proper shipping name	:	Aerosols, flammable
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	Flammable Gas
Packing instruction (cargo aircraft)	:	203
Packing instruction (passenger aircraft)	:	203

IMDG-Code

UN number	:	UN 1950
Proper shipping name	:	AEROSOLS (naphtha (petroleum), hydrotreated light, copper)
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
EmS Code	:	F-D, S-U
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

GB 6944/12268

UN number	:	UN 1950
Proper shipping name	:	AEROSOLS
Class	:	2.1
Packing group	:	Not assigned by regulation
Labels	:	2.1
Marine pollutant	:	yes

JT/T 617

UN number	:	UN 1950
Proper shipping name	:	AEROSOLS
Class	:	2
Packing group	:	Not assigned by regulation

Labels : 2.1
Environmentally hazardous : yes

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.

15. REGULATORY INFORMATION

National regulatory information

Law on the Prevention and Control of Occupational Diseases

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : This product is not listed in the catalogue of hazardous chemicals, but it meets the definition of hazardous chemicals and its principles of determination.

Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)

No. / Code	Chemical name / Category	Threshold quantity
W3	Aerosols	150 t

Hazardous Chemicals for Priority Management under SAWS : Listed

Regulations on Labour Protection in Workplaces where Toxic Substances are Used

Catalogue of Highly Toxic Chemicals : Not listed

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals : Not listed

Regulation on the Administration of Precursor Chemicals

Catalogue and Classification of Precursor Chemicals : Not listed

Regulations of Ozone Depleting Substances Management

List of Controlled Ozone Depleting Substances : Not listed

List of Controlled Ozone Depleting Substances Import and Export : Not listed

Environmental Protection Law

List of Priority Controlled Chemicals : Not listed

List of Key Controlled New Pollutants	:	Not listed
List of Toxic and Hazardous Water Pollutants	:	Not listed
List of Toxic and Hazardous Air Pollutants	:	Not listed
List of Toxic and Hazardous Soil Pollutants	:	Not listed

Measures for the Administration on Import and Export Licenses for Dual-Use Items and Technologies

Catalogue for Dual-Use Items and Technologies	:	Not listed

Other international regulations

Montreal Protocol	:	Not applicable
Rotterdam Convention (Prior Informed Consent)	:	Not applicable
Stockholm Convention (Persistent Organic Pollutants)	:	Not applicable

The components of this product are reported in the following inventories:

CN IECSC	:	On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

Revision Date	:	2026-06-22
Date format	:	yyyy/mm/dd

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
CN BEI	:	China. Biological Occupational Exposure Indices
CN OEL	:	Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
CN OEL / PC-TWA	:	Permissible concentration - time weighted average
CN OEL / PC-STEL	:	Permissible concentration - short term exposure limit

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -

Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; GHS - Globally Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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; MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

|| Relevant changes compared to the last edition are highlighted at the left margin. This version replaces all previous editions.

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