OKS 2511

Version	Revision Date:	Date of last issue: 2021-04-19	
1.10	2022-12-06	Date of first issue: 2014-04-08	Print Date: 2022-12-06

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : OKS 2511

Chemical nature : Active agent with propellant and solvent.
Metal powder

Manufacturer or supplier's details

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

E-mail address of person responsible for the SDS : mcm@oks-germany.com
Material Compliance Management

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 : Anticorrosion additive

Restrictions on use : Restricted to professional users.

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance : aerosol
Colour : grey
Odour : characteristic

Extremely flammable aerosol. Pressurised container: May burst if heated. Causes skin irritation. Causes serious eye irritation. May cause damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed. May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled. Very toxic to aquatic life with long lasting effects.

GHS Classification

Aerosols : Category 1

Skin irritation : Category 2

Eye irritation	:	Category 2A
Specific target organ toxicity - repeated exposure (Oral)	:	Category 2 (Liver, Kidney)
Specific target organ toxicity - repeated exposure (Inhalation)	:	Category 2 (Central nervous system)
Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H373 May cause damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed.
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. 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.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/ attention if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

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

Causes skin irritation. Causes serious eye irritation. May cause damage to organs through prolonged or repeated exposure if swallowed. May cause damage to organs through prolonged or repeated exposure if inhaled.

Environmental hazards

Very toxic to aquatic life. Very 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)
Butane	106-97-8	>= 30 -< 50
Zinc (stabilized)	7440-66-6	>= 25 -< 30
xylene	1330-20-7	>= 10 -< 20
propane	74-98-6	>= 10 -< 20
2-methoxy-1-methylethyl acetate	108-65-6	>= 1 -< 10
Isobutane	75-28-5	>= 1 -< 10
Naphtha (petroleum), hydrotreated light	64742-49-0	>= 1 -< 10
ethylbenzene	100-41-4	>= 2.5 -< 10
n-Butyl acetate	123-86-4	>= 1 -< 2.5
Acetone	67-64-1	>= 1 -< 10

4. FIRST AID MEASURES

If inhaled : Obtain medical attention.

		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. 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. Seek medical advice.
If swallowed	:	Move the victim to fresh air. Keep respiratory tract clear. Do NOT induce vomiting. Obtain medical attention. Rinse mouth with water.
Most important symptoms and effects, both acute and delayed	:	Causes skin irritation. Inhalation may provoke the following symptoms: Unconsciousness Dizziness Drowsiness Headache Nausea Tiredness Skin contact may provoke the following symptoms: Erythema
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 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. 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 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
Butane	106-97-8	STEL	1,000 ppm	ACGIH (2018-03-20)
xylene	1330-20-7	PC-TWA	50 mg/m3	CN OEL (2019-08-27)
		PC-STEL	100 mg/m3	CN OEL (2019-08-27)
		TWA	100 ppm	ACGIH (2021-01-01)
		STEL	150 ppm	ACGIH (2021-01-01)
Isobutane	75-28-5	STEL	1,000 ppm	ACGIH (2018-03-20)
ethylbenzene	100-41-4	PC-TWA	100 mg/m3	CN OEL (2019-08-27)
	Further information: G2B - Possibly carcinogenic to humans			
		PC-STEL	150 mg/m3	CN OEL (2019-08-27)

	Further information: G2B - Possibly carcinogenic to humans			
		TWA	20 ppm	ACGIH (2021-01-01)
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 (2017-03-01)
		STEL	150 ppm	ACGIH (2017-03-01)
Acetone	67-64-1	PC-TWA	300 mg/m3	CN OEL (2019-08-27)
		PC-STEL	450 mg/m3	CN OEL (2019-08-27)
		TWA	250 ppm	ACGIH (2021-01-01)
		STEL	500 ppm	ACGIH (2021-01-01)

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
xylene	1330-20-7	methylhippuric acids	Urine	End of shift	0.3 g/g creatinine	CN BEI (2019-08-27)
		methylhippuric acids	Urine	End of shift	0.4 g/l	CN BEI (2019-08-27)
		Methylhippuric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g creatinine	ACGIH BEI (2013-03-01)
ethylbenzene	100-41-4	Mandelic acid and phenylglyoxylic acid（MA and PGA）	Urine	End of shift	0.8 g/g creatinine	CN BEI (2019-08-27)
		Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI (2016-03-01)
Acetone	67-64-1	Acetone	Urine	End of	50 mg/l	CN BEI

				shift		(2019-08-27)
		Acetone	Urine	End of shift (As soon as possible after exposure ceases)	25 mg/l	ACGIH BEI (2017-03-01)

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.

Filter type : Recommended Filter type:

Organic gas and low boiling vapour type

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 : Nitrile 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	:	grey
Odour	:	characteristic
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	:	-41 °C (1,013 hPa)
Flash point	:	-60.00 °C Method: Abel-Pensky, closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Extremely flammable aerosol.
Self-ignition	:	not auto-flammable
Upper explosion limit / Upper flammability limit	:	10.9 %(V)
Lower explosion limit / Lower flammability limit	:	1.1 %(V)
Vapour pressure	:	4,000 hPa (20 °C)
Relative vapour density	:	No data available
Relative density	:	0.8 (20 °C) Reference substance: Water The value is calculated
Density	:	0.80 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	:	not determined
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

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Acute inhalation toxicity	:	Remarks: Harmful by inhalation. Symptoms: Inhalation may provoke the following symptoms:, Respiratory disorder Acute toxicity estimate: > 40 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method Symptoms: Redness, Local irritation

Components:

Butane:

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

Zinc (stabilized):

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 401 GLP: yes Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat): > 5.41 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

xylene:

Acute oral toxicity	:	LD50 (Rat): 4,300 mg/kg

Acute inhalation toxicity : Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : Assessment: The component/mixture is moderately toxic after single contact with skin.

2-methoxy-1-methylethyl acetate:

Acute oral toxicity : LD50 (Rat): 6,190 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : LC50 (Rat): 35.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402

Isobutane:

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

Naphtha (petroleum), hydrotreated light:

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

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402

ethylbenzene:

Acute oral toxicity : LD50 (Rat): 3,500 mg/kg

Acute inhalation toxicity : LC50 (Rat): 17.2 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): 15,400 mg/kg

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

Acetone:

Acute oral toxicity	:	LD50 Oral (Rat): 5,800 mg/kg

Skin corrosion/irritation

Product:

Remarks	:	Irritating to skin.

Components:

Zinc (stabilized):

Species	:	Rabbit
Assessment	:	No skin irritation
Result	:	No skin irritation

xylene:

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

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

Species	:	Rabbit
Result	:	Mild skin irritation

n-Butyl acetate:

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

Serious eye damage/eye irritation

Product:

Remarks	:	Irritating to eyes.

Components:

Zinc (stabilized):

Species	:	Rabbit
Result	:	No eye irritation
Exposure time	:	24 h
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 405
GLP	:	yes

xylene:

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

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

Species	:	Rabbit
Result	:	No eye irritation

Assessment	:	No eye irritation

n-Butyl acetate:

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

Acetone:

Species	:	Rabbit
Result	:	Eye irritation

Respiratory or skin sensitisation

Product:

Remarks	:	This information is not available.

Components:

Zinc (stabilized):

Species	:	Guinea pig
Assessment	:	Did not cause sensitisation on laboratory animals.
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.
GLP	:	yes

xylene:

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

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

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.

Germ cell mutagenicity

Product:

Genotoxicity in vitro	:	Remarks: No data available
Genotoxicity in vivo	:	Remarks: No data available

Components:

Zinc (stabilized):

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

xylene:

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

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

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

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.

Carcinogenicity

Product:

Remarks	:	No data available

Components:

Zinc (stabilized):

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

xylene:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

2-methoxy-1-methylethyl acetate:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

ethylbenzene:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

n-Butyl acetate:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

Reproductive toxicity

Product:

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

Components:

Zinc (stabilized):

Reproductive toxicity - Assessment	:	- Fertility - No toxicity to reproduction - Teratogenicity - No effects on or via lactation

xylene:

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

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

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

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

STOT - single exposure

Components:

xylene:

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

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

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

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.

Acetone:

Exposure routes	:	Inhalation
Assessment	:	May cause drowsiness or dizziness.

STOT - repeated exposure

Components:

xylene:

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

Exposure routes	:	Ingestion
Target Organs	:	Liver, Kidney
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

Exposure routes	:	Inhalation
Target Organs	:	hearing organs
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.

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:

This information is not available.

Components:

Zinc (stabilized):

No aspiration toxicity classification

xylene:

May be fatal if swallowed and enters airways.

2-methoxy-1-methylethyl acetate:

No aspiration toxicity classification

Naphtha (petroleum), hydrotreated light:

May be fatal if swallowed and enters airways.

ethylbenzene:

May be fatal if swallowed and enters airways.

n-Butyl acetate:

No aspiration toxicity classification

Further information

Product:

Remarks	:	Risks of irreversible effects after a single exposure. Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

Possible risk of irreversible effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: May cause long-term adverse effects in the aquatic environment.
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Components:

Zinc (stabilized):

Toxicity to fish	:	LC50 (Oncorhynchus kisutch (coho salmon)): 0.727 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.937 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202
M-Factor (Acute aquatic toxicity)	:	1
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.

xylene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2.6 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 3.82 mg/l Exposure time: 48 h Test Type: flow-through test
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 2.2 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): > 1.3 mg/l Exposure time: 56 d Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC50 (Daphnia magna (Water flea)): 2.90 mg/l Exposure time: 21 d Test Type: static test Method: OECD Test Guideline 211 GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): > 157 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209

2-methoxy-1-methylethyl acetate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 - 180 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203
Toxicity to daphnia and other	:	EC50 (Daphnia magna (Water flea)): 373 mg/l

aquatic invertebrates		Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae/aquatic plants	:	NOEC (Pseudokirchneriella subcapitata (green algae)): >= 1,000 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 21 d Test Type: Reproduction Test Method: OECD Test Guideline 211
Toxicity to microorganisms	:	EC10 (activated sludge): > 1,000 mg/l Exposure time: 0.5 h Test Type: static test Method: OECD Test Guideline 209

ethylbenzene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.4 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): 4.6 mg/l Exposure time: 72 h Test Type: static test
Toxicity to fish (Chronic toxicity)	:	NOEC: 3.3 mg/l Exposure time: 96 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l Exposure time: 7 d Test Type: semi-static test

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

Persistence and degradability

Product:

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

Components:

xylene:

Biodegradability	:	Result: Readily biodegradable.

2-methoxy-1-methylethyl acetate:

Biodegradability	:	aerobic Inoculum: activated sludge Result: rapidly biodegradable Biodegradation: 83 %

Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

Naphtha (petroleum), hydrotreated light:

Biodegradability : Result: Not readily biodegradable.

ethylbenzene:

Biodegradability : Result: Readily biodegradable.

n-Butyl acetate:

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

Acetone:

Biodegradability : Result: rapidly biodegradable

Bioaccumulative potential

Product:

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

Components:

Butane:

Partition coefficient: n-octanol/water : log Pow: 2.89
Method: OECD Test Guideline 107

xylene:

Bioaccumulation : Bioconcentration factor (BCF): 25.9

Partition coefficient: n-octanol/water : log Pow: 2.77 - 3.15

propane:

Partition coefficient: n-octanol/water	:	log Pow: 2.36

2-methoxy-1-methylethyl acetate:

Bioaccumulation	:	Bioconcentration factor (BCF): 3.16
Partition coefficient: n-octanol/water	:	log Pow: 0.36 (25 °C) Method: OECD Test Guideline 107 GLP: yes

Isobutane:

Partition coefficient: n-octanol/water	:	log Pow: 2.88 Method: OECD Test Guideline 107

Naphtha (petroleum), hydrotreated light:

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

ethylbenzene:

Bioaccumulation	:	Bioconcentration factor (BCF): 1
Partition coefficient: n-octanol/water	:	log Pow: 3.6 (20 °C)

n-Butyl acetate:

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

Acetone:

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 0.2

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:

xylene:

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

2-methoxy-1-methylethyl acetate:

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

ethylbenzene:

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

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 (zinc powder - zinc dust (stabilized))
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

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

Product name		Status	Reference number
OKS 2511		Listed	2828

List of ingredients	CAS-No.	Status	Reference number
Butane	106-97-8	Listed	2778
Zinc (stabilized)	7440-66-6	Listed	2358
xylene	1330-20-7	Listed	358
propane	74-98-6	Listed	139
Isobutane	75-28-5	Listed	2707
ethylbenzene	100-41-4	Listed	2566
n-Butyl acetate	123-86-4	Listed	2657
Acetone	67-64-1	Listed	137

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

Category	Threshold quantity
Aerosols	150 t

Hazardous Chemicals for Priority Management under SAWS : Not applicable

Regulations on Labour Protection in Workplaces where Toxic Substances are Used

Catalogue of Highly Toxic Chemicals : Not applicable

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

China Severely Restricted Toxic Chemicals for Import : Not applicable

and Export

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:

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

16. OTHER INFORMATION

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 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; 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 - 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; 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

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