OKS 1103 散热片润滑膏

Version	Revision Date:	Date of last issue: 2025-05-28	
2.0	2026-06-03	Date of first issue: 2014-05-28	Print Date: 2026-06-03

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	OKS 1103 散热片润滑膏
Chemical nature	:	silicone oil solid lubricant

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
Restrictions on use	:	Restricted to professional users.

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	:	paste
Colour	:	white
Odour	:	characteristic

Very toxic to aquatic life with long lasting effects.

GHS Classification

Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P273 Avoid release to the environment.

Response:

P391 Collect spillage.

Disposal:

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

Physical and chemical hazards

Not classified based on available information.

Health hazards

Not classified based on available information.

Environmental hazards

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)
Zinc oxide	1314-13-2	>= 30 -< 50
zinc carbonate	3486-35-9	>= 2.5 -< 10
Magnesium oxide	1309-48-4	>= 1 -< 10

4. FIRST AID MEASURES

If inhaled	:	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	:	Remove contaminated clothing. If irritation develops, get medical attention. Wash off with soap and water. 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 eye irritation persists, consult a specialist.
If swallowed	:	Move the victim to fresh air. If unconscious, place in recovery position and seek medical advice. Keep respiratory tract clear. Do not induce vomiting without medical advice. Rinse mouth with water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	No symptoms known or expected.
Notes to physician	:	Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	:	High volume water jet
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.
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. Do not breathe vapours, aerosols. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Do not allow contact with soil, surface or ground water. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Pick up and transfer to properly labelled containers.

7. HANDLING AND STORAGE

Handling

Advice on safe handling	:	Avoid contact with skin and eyes. For personal protection see section 8. 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 ingest. Do not repack. These safety instructions also apply to empty packaging which may still contain product residues. Keep container closed when not in use.
Avoidance of contact	:	No materials to be especially mentioned.

Storage

Conditions for safe storage : Store in original container.
Keep container closed when not in use.
Keep in a dry, cool and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Store in accordance with the particular national regulations.
Keep in properly labelled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Zinc oxide	1314-13-2	PC-TWA	3 mg/m3	CN OEL (2019-08-27)
		PC-STEL	5 mg/m3	CN OEL (2019-08-27)
		TWA (Respirable particulate matter)	2 mg/m3	ACGIH (2025-01-01)
		STEL (Respirable particulate matter)	10 mg/m3	ACGIH (2025-01-01)
Magnesium oxide	1309-48-4	PC-TWA (Fumes)	10 mg/m3	CN OEL (2019-08-27)
		TWA (Inhalable particulate matter)	10 mg/m3	ACGIH (2025-01-01)

Engineering measures : none

Personal protective equipment

Respiratory protection : Not required; except in case of aerosol formation.

Filter type : Filter type P

Eye/face protection : Safety glasses

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	:	For prolonged or repeated contact use 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	:	solid
Form	:	paste
Colour	:	white
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	:	No data available
Flash point	:	Not applicable

Flammability (solid, gas)	:	Combustible Solids
Self-ignition	:	not auto-flammable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	< 0.001 hPa (20 °C)
Relative vapour density	:	No data available
Relative density	:	1.55 (20 °C) Reference substance: Water The value is calculated
Density	:	1.55 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 applicable
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

Particle characteristics		
Particle size	:	Not applicable
Particle Size Distribution	:	Not applicable

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	:	No conditions to be specially mentioned.
Incompatible materials	:	No materials to be especially mentioned.
Hazardous decomposition products	:	>150 °C small quantities of formaldehyde may be formed.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

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

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Remarks: This information is not available.
Acute dermal toxicity	:	Remarks: This information is not available.

Components:

Zinc oxide:

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

Acute inhalation toxicity	:	LC50 (Rat): > 5.7 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 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

zinc carbonate:

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

Magnesium oxide:

Acute oral toxicity	:	LD50 (Rat, male): 3,870 mg/kg

Skin corrosion/irritation

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

Product:

Remarks	:	This information is not available.

Components:

Zinc oxide:

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

Serious eye damage/eye irritation

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

Product:

Remarks	:	This information is not available.

Components:

Zinc oxide:

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

zinc carbonate:

Species	:	Rabbit
Result	:	No eye irritation
Assessment	:	No eye irritation

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:

Zinc oxide:

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

zinc carbonate:

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

Zinc oxide:

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

Magnesium oxide:

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

Carcinogenicity

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

Product:

Remarks	:	No data available

Components:

Zinc oxide:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

Magnesium oxide:

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:

Zinc oxide:

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

Magnesium oxide:

Reproductive toxicity - Assessment	:	- Fertility - Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

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

Product:

Remarks	:	No data available

Components:

Zinc oxide:

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

STOT - repeated exposure

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

Product:

Remarks	:	No data available

Components:

Zinc oxide:

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.

Aspiration toxicity

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

Product:

This information is not available.

Components:

Zinc oxide:

No aspiration toxicity classification

Further information

Product:

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

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

Toxicity to microorganisms : Remarks: No data available

Components:

Zinc oxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1.55 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1 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)): 0.136 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : (Daphnia magna (Water flea)): 0.04 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
GLP: yes

zinc carbonate:

Toxicity to fish : EC50 (Oncorhynchus mykiss (rainbow trout)): 0.169 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Ceriodaphnia dubia (water flea)): 0.147 mg/l Exposure time: 48 h
M-Factor (Acute aquatic toxicity)	:	1
M-Factor (Chronic aquatic toxicity)	:	1

Persistence and degradability

Product:

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

Components:

Zinc oxide:

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

Magnesium oxide:

Biodegradability	:	Remarks: Not applicable

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: No data available

Components:

Magnesium oxide:

Partition coefficient: n-octanol/water	:	Remarks: Not applicable

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:

Zinc oxide:

Results of PBT and vPvB assessment	:	Remarks: Not applicable

Magnesium oxide:

Results of PBT and vPvB assessment	:	Not persistent, bioaccumulative, and toxic (PBT).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. 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. Dispose of waste product or used containers according to local regulations.

14. TRANSPORT INFORMATION

International Regulations

OKS 1103 散热片润滑膏

Version	Revision Date:	Date of last issue: 2025-05-28	
2.0	2026-06-03	Date of first issue: 2014-05-28	Print Date: 2026-06-03

UNRTDG

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous Dangerous Goods
Packing instruction (cargo aircraft)	:	956
Packing instruction (passenger aircraft)	:	956
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
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 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	9
Marine pollutant	:	yes

JT/T 617

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

II		N.O.S. (zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	9
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)	:	Not listed
Hazardous Chemicals for Priority Management under SAWS	:	Not 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	:	2026-06-03
Date format	:	yyyy/mm/dd

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
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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