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

1.1 Product identifier

Product name : OKS 450

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-

stance/Mixture

: Lubricant

Recommended restrictions

on use

: Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Company : OKS Spezialschmierstoffe GmbH

Ganghoferstr. 47

D-82216 Maisach-Gernlinden Tel.: +49 8142 3051 500 Fax.: +49 8142 3051 599 info@oks-germany.com

E-mail address of person : mcm@oks-germany.com

responsible for the SDS Material Compliance Management

National contact

1.4 Emergency telephone number

Emergency telephone num- : +49 8142 3051 517 (24/7 service)

ber

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Eye irritation, Category 2 H319: Causes serious eye irritation.

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.



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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms

 \bigcirc

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

Precautionary statements : Prevention:

P261 Avoid breathing vapours.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ eye protection/ face

protection.

Response:

P333 + P313 If skin irritation or rash 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.

Hazardous components which must be listed on the label:

Sulfonic acids, petroleum, calcium salts

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Synthetic hydrocarbon oil

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Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
zinc bis[O,O-bis(2- ethylhexyl)] bis(dithiophosphate)	4259-15-8 224-235-5	Eye Dam.1; H318 Aquatic Chronic2; H411	> 50 % Eye Dam.1, H318	>= 1 - < 2.5
Sulfonic acids, petro- leum, calcium salts	61789-86-4 263-093-9	Skin Sens.1B; H317	>= 10 % Skin Sens.1B,	>= 1 - < 10
Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate	947-946-9	Skin Irrit.2; H315 Skin Sens.1B; H317 Aquatic Chronic4; H413		>= 1 - < 2.5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of 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 respira-



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tion.

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.

If unconscious, place in recovery position and seek medical

advice.

Keep respiratory tract clear. Do NOT induce vomiting. Rinse mouth with water.

Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Allergic appearance

Risks : May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : The first aid procedure should be established in consultation

with the doctor responsible for industrial medicine.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or car-

bon dioxide.

Unsuitable extinguishing

media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion prod-

ucts

Carbon oxides

Nitrogen oxides (NOx)

Sulphur oxides

Oxides of phosphorus

Metal oxides



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5.3 Advice for firefighters

Special protective equipment:

for firefighters

In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment. Exposure to decomposi-

tion products may be a hazard to health.

Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.

Use personal protective equipment.

Ensure adequate ventilation.

Do not breathe vapours or spray mist.

Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water

courses.

Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages

cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible ab-

sorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local

/ national regulations (see section 13).

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours or spray mist.

Avoid contact with skin and eyes. For personal protection see section 8.

Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being

used.

Smoking, eating and drinking should be prohibited in the ap-

plication area.



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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 repack.

Do not re-use empty containers.

These safety instructions also apply to empty packaging which

may still contain product residues. Keep container closed when not in use.

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

handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

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.

7.3 Specific end use(s)

Specific use(s) : Specific instructions for handling, not required.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
Benzene, mono-C10- 13-alkyl derivs., distn. residues	Workers	Inhalation	Long-term systemic effects	3.2 mg/m3
	Workers	Skin contact	Long-term systemic effects	4.3 mg/kg bw/day
zinc bis[O,O-bis(2- ethylhexyl)] bis(dithiophosphate)	Workers	Inhalation	Long-term systemic effects	6.6 mg/m3
	Workers	Skin contact	Long-term systemic effects	9.6 mg/m3
Molybdenum trioxide, reaction products with bis[O,O-bis(2- ethylhexyl)] hydrogen	Workers	Inhalation	Long-term systemic effects	4.93 mg/m3



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dithiophosphate				
	Workers	Dermal	Long-term systemic effects	1.4 mg/kg bw/day

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
Benzene, mono-C10-13-alkyl	Fresh water	0.001 mg/l
derivs., distn. residues		
	Intermittent use/release	0.001 mg/l
	Marine water	0 mg/l
	Microbiological Activity in Sewage Treat-	2 mg/l
	ment Systems	
	Fresh water sediment	1.65 mg/kg
	Marine sediment	0.165 mg/kg
	Soil	0.329 mg/kg
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	Fresh water	0.004 mg/l
	Marine water	0.0046 mg/l
	Sewage treatment plant	3.8 mg/l
	Fresh water sediment	0.322 mg/l
	Marine sediment	0.032 mg/l
	Soil	0.062 mg/l

8.2 Exposure controls

Engineering measures

Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety glasses with side-shields

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.

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

Filter type : Filter type A-P

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

to the concentration and amount of the dangerous substance

at the specific workplace.

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the spe-

cific work-place.



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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : green

Odour : characteristic

Odour Threshold : No data available

pH : Not applicable

substance/mixture is non-polar/aprotic

Melting point/range : No data available

Boiling point/boiling range : 235 °C (1,013 hPa)

Flash point : 210 °C

Method: ISO 2592

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapour pressure : 22.0 hPa (20 °C)

Relative vapour density : No data available

Relative density : 0.891 (20 °C)

Reference substance: Water The value is calculated

Density : 0.89 g/cm3

(20 °C)

Bulk density : No data available

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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 : 295 mm2/s (40 °C)

Explosive properties : Not explosive

Oxidizing properties : No data available

9.2 Other information

Sublimation point : No data available

Metal corrosion rate : Not corrosive to metals

Self-ignition : not auto-flammable

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

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

10.4 Conditions to avoid

Conditions to avoid : No conditions to be specially mentioned.

10.5 Incompatible materials

Materials to avoid : No materials to be especially mentioned.



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10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute inhalation toxicity : Remarks: This information is not available.

Acute dermal toxicity : Symptoms: Redness, Local irritation

Components:

zinc bis[0,0-bis(2-ethylhexyl)] bis(dithiophosphate):

Acute oral toxicity : LD50 (Rat, male): 3,100 mg/kg

Method: OECD Test Guideline 401

GLP: no

Acute dermal toxicity : LD50 (Rabbit, male): > 5,000 mg/kg

Method: OECD Test Guideline 402

GLP: no

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithio-phosphate:

Acute dermal toxicity : Symptoms: Redness, Local irritation

Skin corrosion/irritation

Product:

Remarks : This information is not available.

Components:

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate):

Species : Rabbit

Assessment : No skin irritation

Method : OECD Test Guideline 404

Result : No skin irritation

GLP : yes

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithio-

phosphate:

Assessment : Irritating to skin.



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Result : Irritating to skin.

Remarks : Irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks : Irritating to eyes.

Components:

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate):

Species : Rabbit

Assessment : Risk of serious damage to eyes.

Method : OECD Test Guideline 405

Result : Risk of serious damage to eyes.

GLP : yes

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithio-phosphate:

Assessment : No eye irritation Result : No eye irritation

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate):

Test Type : Maximisation Test

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

Sulfonic acids, petroleum, calcium salts:

Assessment : The product is a skin sensitiser, sub-category 1B.

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithio-phosphate:

Assessment : The product is a skin sensitiser, sub-category 1B. Result : The product is a skin sensitiser, sub-category 1B.



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Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Carcinogenicity

Product:

Remarks : No data available

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Effects on foetal develop-

ment

Remarks: No data available

Repeated dose toxicity

Product:

Remarks : This information is not available.

Aspiration toxicity

Product:

This information is not available.

Components:

zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate):

No aspiration toxicity classification

Further information

Product:

Remarks : Information given is based on data on the components and

the toxicology of similar products.

Components:

Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate:

Remarks : Ingestion causes irritation of upper respiratory system and

gastrointestinal disturbance.

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SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish Remarks: No data available

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

12.2 Persistence and degradability

Product:

Biodegradability Remarks: No data available

ity

Physico-chemical removabil- : Remarks: No data available

12.3 Bioaccumulative potential

Product:

Bioaccumulation Remarks: This mixture contains no substance considered to

be persistent, bioaccumulating and toxic (PBT).

This mixture contains no substance considered to be very

persistent and very bioaccumulating (vPvB).

12.4 Mobility in soil

Product:

Mobility Remarks: No data available

Distribution among environ-

mental compartments

Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment This substance/mixture contains no components considered

to be either persistent, bioaccumulative and toxic (PBT), or

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very persistent and very bioaccumulative (vPvB) at levels of

0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting poten-

tial

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

Additional ecological infor-

mation

No information on ecology is available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : 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.

Waste codes should be assigned by the user based on the

application for which the product was used.

Contaminated packaging : Packaging that is not properly emptied must be disposed of as

the unused product.

Dispose of waste product or used containers according to

local regulations.

The following Waste Codes are only suggestions:

Waste Code : unused product

13 02 06*, synthetic engine, gear and lubricating oils

uncleaned packagings

15 01 10, packaging containing residues of or contaminated

by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number



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ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.4 Packing group

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA (Cargo) : Not regulated as a dangerous good

IATA (Passenger) : Not regulated as a dangerous good

14.5 Environmental hazards

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on : Conditions of restriction for the fol-

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the market and use of certain dangerous substances,

mixtures and articles (Annex XVII)

lowing entries should be considered:

Number on list 3

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

(EU SVHC)

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH),

Article 57). Not applicable

REACH - List of substances subject to authorisation

(Annex XIV)

(EU. REACH-Annex XIV)

Regulation (EC) No 1005/2009 on substances that de-

plete the ozone layer (EC 1005/2009)

Not applicable

Regulation (EU) 2019/1021 on persistent organic pollu-

tants (recast) (EU POP)

Not applicable

Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import

(EU PIC)

of dangerous chemicals

UK REACH List of substances subject to authorisation (Annex XIV)

(UK. REACH Annex XIV)

Not applicable

GB Export and import of hazardous chemicals - Prior

Informed Consent (PIC) Regulation

(GB PIC)

Not applicable

Regulation (EU) 2019/1148 on the marketing and use of : Not applicable explosives precursors

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H315 Causes skin irritation.

May cause an allergic skin reaction. H317

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

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Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; 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

Classification of the mixture:

Classification procedure:

Eye Irrit. 2 H319 Calculation method Skin Sens. 1 H317 Calculation method

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safety data sheets and any amendments contained therein to its own customers, employees and other users of the product. We provide no guarantee that safety data sheets received by users from third parties are up-to-date. All information and instructions in this safety data sheet have been compiled to the best of our knowledge and are based on the information available to us on the day of publication. The information provided is intended to describe the product in relation to the required safety measures; it is neither an assurance of characteristics nor a guarantee of the product's suitability for particular applications and does not justify any contractual legal relationship. The existence of a safety data sheet for a particular jurisdiction does not necessarily mean that import or use within that jurisdiction is legally permitted. If you have any questions, please contact your responsible sales contact or authorized trading partner.