



**OKS 2101**

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**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

Product name : OKS 2101

**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  
Emergency telephone number : +7 495 628 1687  
+49 8142 3051 517

**Recommended use of the chemical and restrictions on use**

Recommended use : Anticorrosion additive  
Restrictions on use : Restricted to professional users.

**2. HAZARDS IDENTIFICATION**

**GHS Classification (According to GOST 32423, GOST 32424 and GOST 32425)**

Aerosols : Category 1  
Skin irritation : Category 2  
Skin sensitisation : Category 1  
Specific target organ toxicity - single exposure : Category 3 (Central nervous system)  
Aspiration hazard : Category 1  
Short-term (acute) aquatic hazard : Category 3  
Long-term (chronic) aquatic hazard : Category 2

**GHS-Labeling (According to GOST 31340)**

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Hazard pictograms :    

Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.  
H229 Pressurized container: May burst if heated.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H336 May cause drowsiness or dizziness.  
H402 Harmful 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.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.  
**Response:**  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P331 Do NOT induce vomiting.  
**Storage:**  
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

**Other hazards which do not result in classification**  
None known.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Pure substance/mixture : Mixture  
Chemical nature : Active substance with propellant Solvent

**Components**

Chemical name	Concentration (% w/w)	Occupational Exposure Limits		CAS-No.	EC-No.
		MAC value mg/m3 / TSEL value	Hazard Class		

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butane	>= 30 - < 50	MPC-TWA: 300 mg/m <sup>3</sup> Data Source: RU OEL	4	106-97-8	203-448-7
		MPC-STEL: 900 mg/m <sup>3</sup> Data Source: RU OEL	4		
pentane	>= 10 - < 20	MPC-TWA: 300 mg/m <sup>3</sup> Data Source: RU OEL	4	109-66-0	203-692-4
		MPC-STEL: 900 mg/m <sup>3</sup> Data Source: RU OEL	4		
propane	>= 10 - < 20	No data available		74-98-6	200-827-9
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	>= 2,5 - < 10	No data available			265-150-3
Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics	>= 1 - < 10	No data available			918-167-1
Hydrocarbons, C6, isoalkanes, <5% n-hexane	>= 2,5 - < 10	No data available			931-254-9
isobutane	>= 1 - < 10	No data available		75-28-5	200-857-2
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	>= 2,5 - < 10	No data available			926-605-8
2-butoxyethanol	>= 1 - < 10	MPC-STEL: 5 mg/m <sup>3</sup> Data Source: RU OEL	3	111-76-2	203-905-0
calcium bis(dinonylnaphthalenes ulphonate)	>= 0,1 - < 1	No data available		57855-77-3	260-991-2



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**4. FIRST AID MEASURES**

- If inhaled : Call a physician or poison control centre immediately.  
Remove person to fresh air. If signs/symptoms continue, get medical attention.  
Keep patient warm and at rest.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.  
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash off immediately with soap and plenty of water.  
Get medical attention immediately if irritation develops and persists.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.  
If eye irritation persists, consult a specialist.
- If swallowed : Move the victim to fresh air.  
If accidentally swallowed obtain immediate medical attention.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Rinse mouth with water.  
Aspiration hazard if swallowed - can enter lungs and cause damage.
- Most important symptoms and effects, both acute and delayed : Central nervous system depression  
Risk of product entering the lungs on vomiting after ingestion.  
Health injuries may be delayed.  
Causes skin irritation.  
May cause an allergic skin reaction.  
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
- Notes to physician : Treat symptomatically.

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**5. FIREFIGHTING MEASURES**

**Flammable properties**

- Flash point : 0 °C  
Method: Abel-Pensky
- Ignition temperature : No data available
- Upper explosion limit / Upper flammability limit : 9,4 %(V)
- Lower explosion limit / Lower flammability limit : 0,6 %(V)
- Flammability (solid, gas) : Extremely flammable aerosol.
- 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
- Further information : Standard procedure for chemical fires.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Cool containers/tanks with water spray.
- 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.  
Only qualified personnel equipped with suitable protective



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equipment may intervene.

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.

**7. HANDLING AND STORAGE**

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.

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	Control	Data Source
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		(Form of exposure)	parameters / Permissible concentration	
butane	106-97-8	MPC-TWA (vapour and/or gas)	300 mg/m3	RU OEL (2021-02-03)
Further information: Class 4 - Low hazard				
		MPC-STEEL (vapour and/or gas)	900 mg/m3	RU OEL (2021-02-03)
Further information: Class 4 - Low hazard				
pentane	109-66-0	TWA	1.000 ppm 3.000 mg/m3	2006/15/EC (2006-02-09)
		MPC-TWA (vapour and/or gas)	300 mg/m3	RU OEL (2021-02-03)
Further information: Class 4 - Low hazard				
		MPC-STEEL (vapour and/or gas)	900 mg/m3	RU OEL (2021-02-03)
Further information: Class 4 - Low hazard				
2-butoxyethanol	111-76-2	TWA	20 ppm 98 mg/m3	2000/39/EC (2000-06-16)
		STEEL	50 ppm 246 mg/m3	2000/39/EC (2000-06-16)
		MPC-STEEL (vapour and/or gas)	5 mg/m3	RU OEL (2021-02-03)
Further information: Class 3 - Moderately dangerous				

**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

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

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- case.
- Eye 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.
- 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.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : aerosol
- Colour : yellow
- 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 : -161 °C  
(1.013 hPa)
- Flash point : 0 °C  
Method: Abel-Pensky
- Evaporation rate : No data available
- Flammability (solid, gas) : Extremely flammable aerosol.
- Self-ignition : No data available
- Upper explosion limit / Upper : 9,4 %(V)



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flammability limit

Lower explosion limit / Lower flammability limit : 0,6 %(V)

Vapour pressure : 8.327 hPa (20 °C)

Relative vapour density : No data available

Relative density : 0,638 (20 °C)  
Reference substance: Water  
The value is calculated

Density : 0,64 g/cm<sup>3</sup> (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 mm<sup>2</sup>/s ( 40 °C)

Explosive properties : Not explosive

Oxidizing properties : No data available

Sublimation point : No data available

Metal corrosion rate : Not corrosive to metals

Particle size : No data available

**10. STABILITY AND REACTIVITY**

Reactivity : No hazards to be specially mentioned.

Chemical stability : Stable under normal conditions.



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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 : 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 : Remarks: Respiration of solvent vapour may cause dizziness.

Symptoms: Inhalation may provoke the following symptoms:,  
Respiratory disorder, Dizziness, Drowsiness, Vomiting,  
Fatigue, Vertigo, Central nervous system depression

Acute toxicity estimate: > 40 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Calculation method

Acute dermal toxicity : Symptoms: Redness, Local irritation

**Components:**

**butane:**

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

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Test atmosphere: gas

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:**

Acute inhalation toxicity : Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:**

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

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Acute oral toxicity : LD50 Oral (Rat): > 5.000 mg/kg

**isobutane:**

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

**2-butoxyethanol:**

Acute oral toxicity : LD50 (Guinea pig): 1.414 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50: 3 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : LD50 (Guinea pig): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

**calcium bis(dinonylnaphthalenesulphonate):**



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Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 20.000 mg/kg

**Skin corrosion/irritation**

**Product:**

Remarks : Irritating to skin.

**Components:**

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:**

Result : Repeated exposure may cause skin dryness or cracking.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Result : Skin irritation

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Species : Rabbit  
Result : Skin irritation

**2-butoxyethanol:**

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

**calcium bis(dinonylnaphthalenesulphonate):**

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

**Serious eye damage/eye irritation**

**Product:**

Remarks : Irritating to eyes.



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**Components:**

**2-butoxyethanol:**

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

**calcium bis(dinonylnaphthalenesulphonate):**

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

**Respiratory or skin sensitisation**

**Product:**

Remarks : This information is not available.

**Components:**

**2-butoxyethanol:**

Test Type : Maximisation Test  
Species : Guinea pig  
Assessment : Did not cause sensitisation on laboratory animals.  
Result : Did not cause sensitisation on laboratory animals.

**calcium bis(dinonylnaphthalenesulphonate):**

Species : Guinea pig  
Assessment : May cause sensitisation by skin contact.  
Result : May cause sensitisation by skin contact.

**Germ cell mutagenicity**

**Product:**

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

**Components:**

**2-butoxyethanol:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test



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Method: OECD Test Guideline 476  
Result: negative  
Remarks: In vitro tests did not show mutagenic effects

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Rat  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

**Carcinogenicity**

**Product:**

Remarks : No data available

**Components:**

**2-butoxyethanol:**

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

**Reproductive toxicity**

**Product:**

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

**Components:**

**2-butoxyethanol:**

Reproductive toxicity - Assessment : - Fertility -  
No toxicity to reproduction  
- Teratogenicity -  
Animal testing did not show any effects on foetal development.

**calcium bis(dinonylnaphthalenesulphonate):**

Reproductive toxicity - Assessment : - Fertility -

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No toxicity to reproduction

**STOT - single exposure**

**Product:**

Remarks : No data available

**Components:**

**pentane:**

Assessment : May cause drowsiness or dizziness.

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:**

Exposure routes : Inhalation  
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Assessment : May cause drowsiness or dizziness.

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Assessment : May cause drowsiness or dizziness.

**2-butoxyethanol:**

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

**calcium bis(dinonylnaphthalenesulphonate):**

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

**STOT - repeated exposure**

**Product:**

Remarks : No data available



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**Components:**

**2-butoxyethanol:**

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

**calcium bis(dinonylnaphthalenesulphonate):**

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**

**Product:**

May be fatal if swallowed and enters airways.

May be fatal if swallowed and enters airways.

**Components:**

**pentane:**

May be fatal if swallowed and enters airways.

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:**

May be fatal if swallowed and enters airways.

**Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:**

May be fatal if swallowed and enters airways.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

May be fatal if swallowed and enters airways.





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**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

May be fatal if swallowed and enters airways.

**2-butoxyethanol:**

No aspiration toxicity classification

**calcium bis(dinonylnaphthalenesulphonate):**

No aspiration toxicity classification

**Further information**

**Product:**

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

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**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Product:**

Toxicity to fish : Remarks: 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:**

**pentane:**

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

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**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics:**

**Ecotoxicology Assessment**

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l  
Exposure time: 48 h

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

**2-butoxyethanol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.474 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)): 1.550 mg/l  
Exposure time: 48 h  
Test Type: Immobilization  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1.840 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 286 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): > 100 mg/l  
Exposure time: 21 d

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 100 mg/l  
Exposure time: 21 d  
Test Type: Reproduction Test  
Method: OECD Test Guideline 211

**calcium bis(dinonylnaphthalenesulphonate):**

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 0,28 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 0,27 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
Remarks: No toxicity at the limit of solubility

**Ecotoxicology Assessment**

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

**Persistence and degradability**

**Product:**

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

**Components:**

**Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:**

Biodegradability : Result: Not readily biodegradable.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Biodegradability : Result: Not rapidly biodegradable

**2-butoxyethanol:**

Biodegradability : aerobic  
Result: rapidly biodegradable

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Biodegradation: 90 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

**calcium bis(dinonylnaphthalenesulphonate):**

Biodegradability : Result: Not readily 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

**propane:**

Partition coefficient: n-octanol/water : log Pow: 2,36

**Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics:**

Bioaccumulation : Remarks: No data available

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

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 4

**isobutane:**

Partition coefficient: n-octanol/water : log Pow: 2,88  
Method: OECD Test Guideline 107



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**2-butoxyethanol:**

Bioaccumulation : Bioconcentration factor (BCF): 3,16

Partition coefficient: n-octanol/water : log Pow: 0,81 (25 °C)  
Method: OECD Test Guideline 107

**calcium bis(dinonylnaphthalenesulphonate):**

Partition coefficient: n-octanol/water : log Pow: 10,96

**Mobility in soil**

**Product:**

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

**Other adverse effects**

**Product:**

Additional ecological information : Toxic to aquatic life with long lasting effects.

**Components:**

**calcium bis(dinonylnaphthalenesulphonate):**

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

**Hygienic standards:**

**(Allowable concentration in air, water, including fishery waters, soil)**

Components	Air	Water	Soil	Data Source
butane	Concentration that prevents irritation, reflex reactions, odors when exposed to 20-30 minutes - maximum one-time: 200 mg/m3 Limiting health hazard indicator: reflectory	Maximum Permissible Concentration: 0,05 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3	No data available	List 1 List 5

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	Hazard class: Class 4 - low hazard			
pentane	Concentration that prevents irritation, reflex reactions, odors when exposed to 20-30 minutes - maximum one-time: 100 mg/m <sup>3</sup> Limiting health hazard indicator: Reflectory-resorptive Hazard class: Class 4 - low hazard Concentration that provides admissible (acceptable) levels of risk when exposed to at least 24 hours - average daily: 25 mg/m <sup>3</sup> Limiting health hazard indicator: Reflectory-resorptive Hazard class: Class 4 - low hazard	No data available	No data available	List 1
propane	No data available	Maximum Permissible Concentration: 0,05 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3	No data available	List 5
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	TSEL value: 0,05 mg/m <sup>3</sup>	Maximum Permissible Concentration: 0,05 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3	No data available	List 2 List 5
Hydrocarbons, C11-C12, isoalkanes, < 2%	No data available	Maximum Permissible Concentration:	No data available	List 5

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aromatics		0,05 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3		
Hydrocarbons, C6, isoalkanes, <5% n-hexane	No data available	Maximum Permissible Concentration: 0,05 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3	No data available	List 5
isobutane	Concentration that prevents irritation, reflex reactions, odors when exposed to 20-30 minutes - maximum one-time: 15 mg/m <sup>3</sup> Limiting health hazard indicator: reflectory Hazard class: Class 4 - low hazard	Maximum Permissible Concentration: 0,05 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3	No data available	List 1 List 5
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	No data available	Maximum Permissible Concentration: 0,05 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3	No data available	List 5
2-butoxyethanol	TSEL value: 0,5 mg/m <sup>3</sup>	Maximum Permissible Concentration: 0,01 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3	No data available	List 2 List 5
calcium	No data available	Maximum Permissible	No data available	List 5



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bis(dinonylnaphthalen esulphonate)	Concentration: 3,6 Milligrams per cubed decimeter Limiting health hazard indicator: toxic Hazard class: 3
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For explanation of abbreviations see section 16.

**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.

The following Waste Codes are only suggestions:

Waste Code : unused product, packagings not completely emptied  
16 05 04\*\*, gases in pressure containers (including halons)  
containing hazardous substances

**14. TRANSPORT INFORMATION**

**ADR**

UN number : UN 1950  
Proper shipping name : AEROSOLS  
( )  
Class : 2  
Packing group : Not assigned by regulation  
Labels : 2.1  
Tunnel restriction code : (D)  
Environmentally hazardous : yes

**IATA-DGR**

UN/ID No. : UN 1950  
Proper shipping name : Aerosols, flammable  
(naphtha (petroleum), hydrotreated light)  
Class : 2.1  
Packing group : Not assigned by regulation





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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, cyclohexane)  
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.

**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.

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**15. REGULATORY INFORMATION**

**National regulatory information**

Federal Law of 21.07.1997 No. 116-FZ (amended on 11.06.2021) "On industrial safety of hazardous production facilities".  
Federal Law of 24.06.1998 No. 89-FZ (amended on 02.07.2021) "On production and consumption waste".  
Federal Law of 30.03.1999 No. 52-FZ (amended on 02.07.2021) "On the Sanitary and Epidemiological Well-Being of the Population" (amended and supplemented, entered into force on 31.10.2021).  
Federal Law of 04.05.1999 No. 96-FZ "On the protection of atmospheric air" (as amended on December 8, 2020).  
Federal Law of 27.12.2002 No. 184-FZ (amended on 02.07.2021) "On Technical Regulation" (amended and supplemented, entered into force on 01.09.2021).  
Federal Law of 10.01.2002 No. 7-FZ (amended on 02.07.2021) "On environmental protection".  
Federal Law of 22.07.2008 No. 123-FZ "Technical Regulations on Fire Safety Requirements"  
TECHNICAL REGULATIONS OF THE CUSTOMS UNION TR CU 030/2012 On requirements for lubricants, oils and special fluids (amended on 03.03.2017).

**International Regulations**

Montreal Protocol : Not applicable  
Rotterdam Convention (Prior Informed Consent) : Not applicable



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Stockholm Convention (Persistent Organic Pollutants) : Not applicable

**16. OTHER INFORMATION**

**List of data sources used in the preparation of the Safety Data Sheet**

GOST 30333-2007. Interstate standard. Safety data sheet for chemical products. Primary requirements.

GOST 12.1.004-91 System of labor safety standards (SSBT). Fire safety. General requirements.

GOST 12.1.007-76 Occupational safety standards system. Noxious substances. Classification and general safety requirements

GOST 12.1.044-89 SSBT. Fire and explosion hazard of substances and materials. Nomenclature of indicators and methods for their determination.

GOST 12.4.021 System of labor safety standards (SSBT). Ventilation systems. General requirements.

GOST 12.4.137-2001 Special footwear with leather uppers for protection against oil, oil products, acids, alkalis, non-toxic and explosive dust. Technical conditions.

GOST 12.4.252-2013 System of labor safety standards (SSBT). Means of individual protection of hands. Gloves. General technical requirements. Test methods.

GOST 14192-96. Interstate standard. Cargo marking. Minsk, 1998.

GOST 19433-88 Dangerous goods. Classification and labeling.

GOST 31340-2013. Interstate standard. Precautionary labeling of chemical products. General requirements.

GOST 32419-2013 Classification of the hazard of chemical products. General requirements.

GOST 32421-2013 Classification of chemical products, the hazard of which is due to physical and chemical properties. Test methods for explosive chemical products.

GOST 32423-2013 Hazard classification of mixed chemical products by their effects on the body.

GOST 32424-2013 Classification of the hazard of chemical products by their impact on the environment. Basic provisions.

GOST 32425-2013 Hazard classification of mixed chemical products in terms of environmental impact.

GOST R 53264-2019 Fire fighting equipment. Special protective clothing for firefighters. General technical requirements. Test methods.

GOST R 53265-2019 Fire fighting equipment. Personal protective equipment for the feet of the firefighter. General technical requirements. Test methods.

GOST R 53268-2009 Fire fighting equipment. Fire rescue belts. General technical requirements. Test methods.

GOST R 53269-2019 Fire fighting equipment. Firefighters helmets. General technical requirements. Test methods.

SanPiN 1.2.2353-08 "Carcinogenic factors and basic requirements for the prevention of carcinogenic hazard".

SanPiN 1.2.3685-21 "Hygienic standards and requirements for ensuring the safety and (or) harmlessness to humans of environmental factors" dated 28.01.2021.

SanPiN 2.1.3684-21 "Sanitary and epidemiological requirements for the maintenance of the territories of urban and rural settlements, for water bodies, drinking water and drinking water supply, atmospheric air, soils, living quarters, the operation of industrial, public premises, the organization and implementation of sanitary and anti-epidemic (preventive) measures".

SanPiN 2.2.0.555-96. 2.2. Labor hygiene. Hygienic requirements for working conditions for women. Sanitary rules and regulations.

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Carriage of dangerous goods, International maritime dangerous goods (IMDG) code.  
Water quality standards for fishery water bodies, including standards for maximum permissible concentrations of harmful substances in the waters of fishery water bodies (approved by order of the Ministry of Agriculture of Russia dated December 13, 2016 No. 552).  
Regulations for the carriage of dangerous goods (Appendix 1 and 2) to the Agreement on International Goods Transport by Rail (SMGS), 2009.  
Agreement on International Goods Transport by Rail (SMGS).  
UN Recommendations on the Transport of Dangerous Goods. Typical rules. Twenty-second revised edition. United Nations, New York and Geneva, 2021.  
Montreal Protocol (Ozone Depleting Substances)  
Stockholm Convention (Persistent Organic Pollutants)

**Full text of other abbreviations**

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Eye Irrit.	:	Eye irritation
Flam. Gas	:	Flammable gases
Flam. Liq.	:	Flammable liquids
Press. Gas	:	Gases under pressure
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT SE	:	Specific target organ toxicity - single exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2006/15/EC	:	Europe. Indicative occupational exposure limit values
RU OEL	:	SanPiN 1.2.3685-21 Table 2.1, Table 2.8, Table 2.16 & Table 2.17 Maximum permissible concentrations (MPC) in the air of the working area
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
2006/15/EC / TWA	:	Limit Value - eight hours
RU OEL / MPC-STEL	:	Maximum Permissible Concentration - Short Term Exposure
RU OEL / MPC-TWA	:	Maximum Permissible Concentration - Time Weighted Average
List 1	:	SanPiN 1.2.3685-21 Table 1.1, Table 1.10, & Table 1.11 Maximum permissible concentration (MPC) in the air of urban and rural settlements
List 2	:	SanPiN 1.2.3685-21 Table 1.2, Table 1.12 & Table 1.13 Tentative Safe Exposure Levels (TSEL) in the air of urban and rural settlements
List 5	:	Order of the Russian Federal Fisheries Agency "Standards of maximum permissible concentrations of harmful substances in fishery water bodies"

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; 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



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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; 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

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