

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - PT
(Commission Regulation (EU) 2020/878)



OKS 221

| | | | |
|---------|----------------|---------------------------------|-------------|
| Version | Revision Date: | Date of last issue: 13.08.2018 | Print Date: |
| 3.1 | 18.08.2022 | Date of first issue: 05.07.2016 | 18.08.2022 |

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

1.1 Product identifier

Product name : OKS 221

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

Use of the Sub-
stance/Mixture : Lubricant spray

Recommended restrictions : Restricted to professional users.
on use

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- : CIAV - Information Centre of Antipoison
ber (+351) 800 250 250 (free 24/7 service)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| | |
|--|---|
| Aerosols, Category 1 | H222: Extremely flammable aerosol. H229: Pressurised container: May burst if heated. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Specific target organ toxicity - single ex- posure, Category 3, Central nervous system | H336: May cause drowsiness or dizziness. |

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| Aspiration hazard, Category 1 | H304: May be fatal if swallowed and enters air-ways. |
| Long-term (chronic) aquatic hazard, Category 2 | H411: Toxic to aquatic life with long lasting effects. |

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :     

Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H304 May be fatal if swallowed and enters air-ways.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH066 Repeated exposure may cause skin dryness or cracking.

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 eye protection/ face protection.

Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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.

Hazardous components which must be listed on the label:

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pentane

calcium dihydroxide

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.

Ecological information: 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.

Toxicological information: 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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Active substance with propellant

Components

| Chemical name | CAS-No. EC-No. Index-No. Registration number | Classification | specific concentration limit M-Factor Notes Acute toxicity estimate | Concentration (% w/w) |
|---------------------|--|---|--|--------------------------|
| pentane | 109-66-0 203-692-4 601-006-00-1 01-2119459286-30-XXXX | Flam. Liq.2; H225 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411; EUH066 | Note C | >= 30 - < 50 |
| propane | 74-98-6 200-827-9 601-003-00-5 01-2119486944-21-XXXX | Flam. Gas1A; H220 Press. GasCompr. Gas; H280 | Note U (table 3.1) | >= 10 - < 20 |
| calcium dihydroxide | 1305-62-0 215-137-3 | Skin Irrit.2; H315 Eye Dam.1; H318 STOT SE3; H335 | | >= 3 - < 10 |

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| | 01-2119475151-45-XXXX | | | |
| Substances with a workplace exposure limit : | | | | |
| butane | 106-97-8 203-448-7 601-004-00-0 | Flam. Gas1A; H220 Press. GasCompr. Gas; H280 | Note U (table 3.1), Note C | $\geq 10 - < 20$ |
| molybdenum disulphide | 1317-33-5 215-263-9 | Not classified | | $\geq 1 - < 10$ |
| isobutane | 75-28-5 200-857-2 601-004-00-0 01-2119485395-27-XXXX | Flam. Gas1A; H220 Press. GasCompr. Gas; H280 | Note U (table 3.1), Note C | $\geq 1 - < 10$ |
| Graphite | 7782-42-5 231-955-3 | Not classified | | $\geq 1 - < 10$ |

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of 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.
Get medical attention immediately if irritation develops and persists.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
Wash skin thoroughly with soap and water or use recognized skin cleanser.

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- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.
Get medical attention immediately.
- If swallowed : Move the victim to fresh air.
If accidentally swallowed obtain immediate medical attention.
Keep respiratory tract clear.
Do NOT induce vomiting.
Rinse mouth with water.
Aspiration hazard if swallowed - can enter lungs and cause damage.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Inhalation may provoke the following symptoms:
Unconsciousness
Dizziness
Drowsiness
Headache
Nausea
Tiredness
Skin contact may provoke the following symptoms:
Erythema
- Aspiration may cause pulmonary oedema and pneumonitis.
- Risks : Central nervous system depression
Can be absorbed through skin.
Risk of product entering the lungs on vomiting after ingestion.
Health injuries may be delayed.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : ABC powder
- Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : 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.

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Hazardous combustion products : Carbon oxides
Sulphur oxides
Metal oxides

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 decomposition products may be a hazard to health.

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : 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 equipment may intervene.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for 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.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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- 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.
- 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 : 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.

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

Occupational Exposure Limits

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---------------------------------|----------|-------------------------------|--------------------------------------|-----------------------------------|
| pentane | 109-66-0 | TWA | 1.000 ppm 3.000 mg/m ³ | 2006/15/EC (2006-02-09) |
| Further information: Indicative | | | | |
| | | VLE-MP | 1.000 ppm | PT OEL (2014-11-14) |
| | | TWA | 1.000 ppm 3.000 mg/m ³ | PT DL 305/2007 (2007-08-24) |

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|---------------------------------|-----------|------------------------------|--------------------------------------|-----------------------------------|
| butane | 106-97-8 | VLE_CD | 1.000 ppm | PT OEL (2014-11-14) |
| molybdenum di-sulphide | 1317-33-5 | VLE-MP (Inhalable fraction) | 10 mg/m ³ (Molybdenum) | PT OEL (2014-11-14) |
| | | VLE-MP (Respirable fraction) | 3 mg/m ³ (Molybdenum) | PT OEL (2014-11-14) |
| calcium dihydroxide | 1305-62-0 | VLE-MP | 5 mg/m ³ | PT OEL (2007-03-26) |
| | | TWA (Respirable fraction) | 1 mg/m ³ | 2017/164/EU (2017-02-01) |
| Further information: Indicative | | | | |
| | | STEL (Respirable fraction) | 4 mg/m ³ | 2017/164/EU (2017-02-01) |
| Further information: Indicative | | | | |
| | | TWA (respirable fraction) | 1 mg/m ³ | PT DL 305/2007 (2018-06-11) |
| | | STEL (respirable fraction) | 4 mg/m ³ | PT DL 305/2007 (2018-06-11) |
| isobutane | 75-28-5 | VLE_CD | 1.000 ppm | PT OEL (2014-11-14) |
| Graphite | 7782-42-5 | VLE-MP (Respirable fraction) | 2 mg/m ³ | PT OEL (2014-11-14) |

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

| Substance name | End Use | Exposure routes | Potential health effects | Value |
|---|---------|-----------------|----------------------------|------------------------|
| pentane | Workers | Inhalation | Long-term systemic effects | 3000 mg/m ³ |
| | Workers | Dermal | Long-term systemic effects | 432 mg/kg bw/day |
| Benzene, mono-C10-13-alkyl derivs., distn. residues | Workers | Inhalation | Long-term systemic effects | 3,2 mg/m ³ |
| | Workers | Skin contact | Long-term systemic effects | 4,3 mg/kg bw/day |
| calcium dihydroxide | Workers | Inhalation | Long-term local effects | 1 mg/m ³ |
| | Workers | Inhalation | Acute local effects | 4 mg/m ³ |
| Graphite | Workers | Inhalation | Long-term local effects | 1,2 mg/m ³ |

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

| Substance name | Environmental Compartment | Value |
|----------------------------|--|------------|
| pentane | Fresh water | 0,230 mg/l |
| | Marine water | 0,230 mg/l |
| | Microbiological Activity in Sewage Treatment Systems | 3,6 mg/l |
| | Fresh water sediment | 1,2 mg/kg |
| | Marine sediment | 1,2 mg/kg |
| Benzene, mono-C10-13-alkyl | Fresh water | 0,001 mg/l |

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| derivs., distn. residues | | |
| | Intermittent use/release | 0,001 mg/l |
| | Marine water | 0 mg/l |
| | Microbiological Activity in Sewage Treatment Systems | 2 mg/l |
| | Fresh water sediment | 1,65 mg/kg |
| | Marine sediment | 0,165 mg/kg |
| | Soil | 0,329 mg/kg |
| calcium dihydroxide | Fresh water | 0,49 mg/l |
| | Marine water | 0,32 mg/l |
| | Intermittent use/release | 0,49 mg/l |
| | Microbiological Activity in Sewage Treatment Systems | 3 mg/l |
| | Soil | 1080 mg/kg |

8.2 Exposure controls

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

Eye protection : Tightly fitting safety goggles

Hand protection

Material : Fluorinated 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.
The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

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.

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 (AX)

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | | |
|--|---|---|
| Physical state | : | aerosol |
| Colour | : | black |
| Odour | : | characteristic |
| Odour Threshold | : | No data available |
| Melting point/range | : | No data available |
| Boiling point/boiling range | : | -161 °C (1.013 hPa) |
| Flammability (solid, gas) | : | Extremely flammable aerosol. |
| Upper explosion limit / Upper flammability limit | : | 10,9 %(V) |
| Lower explosion limit / Lower flammability limit | : | 1,4 %(V) |
| Flash point | : | -60 °C Method: Abel-Pensky |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| pH | : | Not applicable substance/mixture is non-soluble (in water) |
| Viscosity | : | |
| Viscosity, dynamic | : | No data available |
| Viscosity, kinematic | : | < 20,5 mm ² /s (40 °C) |
| Solubility(ies) | : | |
| Water solubility | : | insoluble |
| Solubility in other solvents | : | No data available |
| Partition coefficient: n-octanol/water | : | No data available |

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Vapour pressure : 3.700 hPa (20 °C)

Relative density : 0,675 (20 °C)
Reference substance: Water
The value is calculated

Density : 0,68 g/cm³
(20 °C)

Bulk density : No data available

Relative vapour density : No data available

9.2 Other information

Explosives : Not explosive

Oxidizing properties : No data available

Self-ignition : No data available

Metal corrosion rate : Not corrosive to metals

Evaporation rate : No data available

Sublimation point : No data available

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 : Heat, flames and sparks.
Strong sunlight for prolonged periods.
Risk of receptacle bursting.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

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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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product:

- Acute oral toxicity : Remarks: Effects due to ingestion may include:
Symptoms: Central nervous system depression
- Acute inhalation toxicity : Remarks: Respiration of solvent vapour may cause dizziness.
Symptoms: Inhalation may provoke the following symptoms:,
Respiratory disorder, Dizziness, Drowsiness, Vomiting, Fa-
tigue, Vertigo, Central nervous system depression
- Acute dermal toxicity : Remarks: Prolonged or repeated skin contact with liquid may
cause defatting resulting in drying, redness and possible blis-
tering.
Symptoms: Skin disorders

Components:

pentane:

- Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
- Acute inhalation toxicity : LC50 (Rat): > 25,3 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhala-
tion toxicity

calcium dihydroxide:

- Acute oral toxicity : LD50 (Rat, female): > 2.000 mg/kg
Method: OECD Test Guideline 425
GLP: yes
Assessment: The substance or mixture has no acute oral tox-
icity
- Acute inhalation toxicity : LC50 (Rat, male and female): > 6,04 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
GLP: yes

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Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.500 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

butane:

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

molybdenum disulphide:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Acute dermal toxicity : LD50 (Rat): > 16.000 mg/kg

isobutane:

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

Graphite:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Skin corrosion/irritation

Product:

Remarks : This information is not available.

Components:

pentane:

Result : Repeated exposure may cause skin dryness or cracking.

calcium dihydroxide:

Species : human skin
Assessment : Irritating to skin.
Method : OECD Test Guideline 431
Result : Irritating to skin.
GLP : yes

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

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molybdenum disulphide:

Assessment : No skin irritation
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Remarks : Risk of serious damage to eyes.

Components:

pentane:

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

calcium dihydroxide:

Species : Rabbit
Assessment : Risk of serious damage to eyes.
Method : OECD Test Guideline 405
Result : Risk of serious damage to eyes.
GLP : yes

molybdenum disulphide:

Assessment : No eye irritation
Result : No eye irritation

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

pentane:

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

calcium dihydroxide:

Test Type : Local lymph node assay (LLNA)
Species : Mouse
Assessment : Does not cause skin sensitisation.
Method : OECD Test Guideline 429

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Result : Does not cause skin sensitisation.
GLP : yes

molybdenum disulphide:

Assessment : Does not cause skin sensitisation.
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:

calcium dihydroxide:

Genotoxicity in vitro : Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
GLP: yes

molybdenum disulphide:

Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Product:

Remarks : No data available

Components:

calcium dihydroxide:

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

molybdenum disulphide:

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

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Components:

calcium dihydroxide:

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

STOT - single exposure

Components:

pentane:

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

calcium dihydroxide:

Assessment : May cause respiratory irritation.

molybdenum disulphide:

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

STOT - repeated exposure

Components:

molybdenum disulphide:

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

Repeated dose toxicity

Product:

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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.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : 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.

Further information

Product:

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

Components:

molybdenum disulphide:

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

SECTION 12: Ecological information

12.1 Toxicity

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

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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.

calcium dihydroxide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 50,6 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 49,1 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 184,57 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Ecotoxicology Assessment

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

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

molybdenum disulphide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h

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12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

Components:

pentane:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: rapidly biodegradable
Biodegradation: 87 %
Method: OECD Test Guideline 301F
GLP: yes

calcium dihydroxide:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

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).

Components:

propane:

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

butane:

Partition coefficient: n-octanol/water : log Pow: 2,89
Method: OECD Test Guideline 107

isobutane:

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

Graphite:

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

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12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

Distribution among environmental 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 very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : 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.

12.7 Other adverse effects

Product:

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : 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.
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

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16 05 04*, gases in pressure containers (including halons)
containing hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

| | | |
|------|---|---------|
| ADR | : | UN 1950 |
| RID | : | UN 1950 |
| IMDG | : | UN 1950 |
| IATA | : | UN 1950 |

14.2 UN proper shipping name

| | | |
|------|---|-----------------------|
| ADR | : | AEROSOLS |
| RID | : | AEROSOLS |
| IMDG | : | AEROSOLS (pentane) |
| IATA | : | Aerosols, flammable |

14.3 Transport hazard class(es)

| | | |
|------|---|-----|
| ADR | : | 2 |
| RID | : | 2 |
| IMDG | : | 2.1 |
| IATA | : | 2.1 |

14.4 Packing group

| | | |
|-------------------------|---|----------------------------|
| ADR | | |
| Packing group | : | Not assigned by regulation |
| Classification Code | : | 5F |
| Labels | : | 2.1 |
| Tunnel restriction code | : | (D) |

| | | |
|------------------------------|---|----------------------------|
| RID | | |
| Packing group | : | Not assigned by regulation |
| Classification Code | : | 5F |
| Hazard Identification Number | : | 23 |
| Labels | : | 2.1 |

| | | |
|---------------|---|----------------------------|
| IMDG | | |
| Packing group | : | Not assigned by regulation |
| Labels | : | 2.1 |
| EmS Code | : | F-D, S-U |

| | | |
|--------------------------------------|---|------|
| IATA (Cargo) | | |
| Packing instruction (cargo aircraft) | : | 203 |
| Packing instruction (LQ) | : | Y203 |

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Packing group : Not assigned by regulation
Labels : Flammable Gas

IATA (Passenger)

Packing instruction (passenger aircraft) : 203
Packing instruction (LQ) : Y203
Packing group : Not assigned by regulation
Labels : Flammable Gas

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 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.

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 the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Not applicable

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).

REACH - List of substances subject to authorisation (Annex XIV) (EU. REACH-Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer (EC 1005/2009) : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) (EU POP) : Not applicable

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Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals (EU PIC) : Not applicable

: P2

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P3a FLAMMABLE AEROSOLS

E2 ENVIRONMENTAL HAZARDS

18 Liquefied extremely flammable gases (including LPG) and natural gas

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 68 %

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

| | |
|--------|---|
| EUH066 | : Repeated exposure may cause skin dryness or cracking. |
| H220 | : Extremely flammable gas. |
| H225 | : Highly flammable liquid and vapour. |
| H280 | : Contains gas under pressure; may explode if heated. |
| H304 | : May be fatal if swallowed and enters airways. |
| H315 | : Causes skin irritation. |
| H318 | : Causes serious eye damage. |
| H335 | : May cause respiratory irritation. |
| H336 | : May cause drowsiness or dizziness. |
| H411 | : Toxic to aquatic life with long lasting effects. |
| EUH066 | : Repeated exposure may cause skin dryness or cracking. |

Full text of other abbreviations

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- Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.
- Note U (table 3.1) : When put on the market gases have to be classified as "Gases under pressure", in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case. The following codes are assigned: Press. Gas (Comp.) Press. Gas (Liq.) Press. Gas (Ref. Liq.) Press. Gas (Diss.) Aerosols shall not be classified as gases under pressure (See Annex I, Part 2, Section 2.3.2.1, Note 2).
- 2006/15/EC : Europe. Indicative occupational exposure limit values
2017/164/EU : Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
- PT DL 305/2007 : Portugal. Indicative Occupational Exposure Limits
PT OEL : Portugal. Security and Health at the Workplace - Occupational exposure limits of chemical agents
- 2006/15/EC / TWA : Limit Value - eight hours
2017/164/EU / STEL : Short term exposure limit
2017/164/EU / TWA : Limit Value - eight hours
PT DL 305/2007 / TWA : 8 Hour limit value
PT DL 305/2007 / STEL : Short term limit value
PT OEL / VLE-MP : Time Weighted Average
PT OEL / VLE_CD : Short Term Exposure Limit

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) Ef-

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fect 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

| | |
|-------------------|------------|
| Aerosol 1 | H222, H229 |
| Eye Dam. 1 | H318 |
| STOT SE 3 | H336 |
| Asp. Tox. 1 | H304 |
| Aquatic Chronic 2 | H411 |

Classification procedure:

| |
|-------------------------------------|
| Based on product data or assessment |
| Calculation method |
| Calculation method |
| Based on product data or assessment |
| Calculation method |

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