

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by  
Commission Regulation (EU) 2020/878 - ES



## OKS 451

|         |                |                                 |             |
|---------|----------------|---------------------------------|-------------|
| Version | Revision Date: | Date of last issue: 05.06.2026  | Print Date: |
| 5.1     | 04.08.2026     | Date of first issue: 09.07.2016 | 04.08.2026  |

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

### 1.1 Product identifier

Product name : OKS 451

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

Use of the Substance/Mixture : Lubricant spray

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  
82216 Maisach  
Germany  
Tel.: +49 8142 3051-500  
info@oks-germany.com

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

National contact : Klüber Lubrication GmbH Ibérica S. en C.  
Ctra C17, Km 15.5  
08150 Parets del Vallès (Barcelona)  
Espania  
Telefono: +34 93 57384 00  
Fax: +34 93 573 84 91  
customer.service@es.klueber.com

### 1.4 Emergency telephone number

Emergency telephone number : +34 91 562 04 20

## 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.

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)

Hazard pictograms :



Signal word : Danger

Hazard statements :

|      |                                             |
|------|---------------------------------------------|
| H222 | Extremely flammable aerosol.                |
| H229 | Pressurised container: May burst if heated. |
| H317 | May cause an allergic skin reaction.        |
| H319 | Causes serious eye irritation.              |

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.                                                         |
| P261 | Avoid breathing mist.                                                                          |
| P280 | Wear protective gloves/ eye protection/ face protection.                                       |

#### **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:**

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.

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.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Chemical nature : Propellant  
Synthetic hydrocarbon oil

#### Components

| Chemical name                                                                                            | CAS-No.<br>EC-No.<br><br>Index-No.<br>Registration number          | Classification                                                              | specific<br>concentration<br>limit<br>M-Factor<br>Notes<br>Acute toxicity<br>estimate | Concentration<br>(% w/w) |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|
| Sulfonic acids,<br>petroleum, calcium<br>salts                                                           | 61789-86-4<br>263-093-9<br><br>01-2119488992-18-XXXX               | Skin Sens. 1B;<br>H317                                                      | >= 10 %<br>Skin Sens.1B,                                                              | >= 0,1 - < 1             |
| Molybdenum trioxide,<br>reaction products with<br>bis[O,O-bis(2-ethylhexyl)] hydrogen<br>dithiophosphate | 947-946-9<br><br>01-2120772600-59-XXXX                             | Skin Irrit. 2; H315<br>Skin Sens. 1B;<br>H317<br>Aquatic Chronic 4;<br>H413 |                                                                                       | >= 0,25 - < 1            |
| Substances with a workplace exposure limit :                                                             |                                                                    |                                                                             |                                                                                       |                          |
| butane                                                                                                   | 106-97-8<br>203-448-7<br><br>601-004-00-0<br>01-2119474691-32-XXXX | Flam. Gas 1;<br>H220<br>Press. Gas<br>Compr. Gas;<br>H280                   | Note U (Table<br>3), Note C, Note<br>S                                                | >= 30 - < 50             |
| propane                                                                                                  | 74-98-6<br>200-827-9<br><br>601-003-00-5<br>01-2119486944-21-XXXX  | Flam. Gas 1;<br>H220<br>Press. Gas<br>Compr. Gas;<br>H280                   | Note U (Table 3)                                                                      | >= 10 - < 20             |
| isobutane                                                                                                | 75-28-5<br>200-857-2                                               | Flam. Gas 1A;<br>H220<br>Press. Gas                                         | Note U (Table                                                                         | >= 10 - < 20             |

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|  |                                           |                     |            |  |
|--|-------------------------------------------|---------------------|------------|--|
|  | 601-004-00-0<br>01-2119485395-27-<br>XXXX | Compr. Gas;<br>H280 | 3), Note C |  |
|--|-------------------------------------------|---------------------|------------|--|

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.<br>Keep patient warm and at rest.<br>If unconscious, place in recovery position and seek medical advice.<br>Keep respiratory tract clear.<br>If breathing is irregular or stopped, administer artificial respiration. |
| In case of skin contact | : Take off all contaminated clothing immediately.<br>Wash off immediately with soap and plenty of water.<br>Get medical attention immediately if irritation develops and persists.<br>Wash clothing before reuse.<br>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.<br>Seek medical advice.                                                                                                                                                                                     |
| If swallowed            | : Move the victim to fresh air.<br>Keep respiratory tract clear.<br>Do NOT induce vomiting.<br>Rinse mouth with water.                                                                                                                                                                                 |

### 4.2 Most important symptoms and effects, both acute and delayed

- |          |                                                                                                                                   |
|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| Symptoms | : Inhalation may provoke the following symptoms:<br>Unconsciousness<br>Dizziness<br>Drowsiness<br>Headache<br>Nausea<br>Tiredness |
| Risks    | : May cause an allergic skin reaction.<br>Causes serious eye irritation.                                                          |

### 4.3 Indication of any immediate medical attention and special treatment needed

- |           |                          |
|-----------|--------------------------|
| Treatment | : Treat symptomatically. |
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## 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 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  
Nitrogen oxides (NOx)

### 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.  
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 : 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

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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 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

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.

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### 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               |
|------------|----------|-------------------------------|--------------------|---------------------|
| butane     | 106-97-8 | VLA-ED (gas)                  | 1.000 ppm          | ES VLA (2013-02-22) |
| propane    | 74-98-6  | VLA-ED (gas)                  | 1.000 ppm          | ES VLA (2024-01-15) |
| isobutane  | 75-28-5  | VLA-ED (gas)                  | 1.000 ppm          | ES VLA (2013-02-22) |

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

| Substance name                                                                                  | End Use | Exposure routes | Potential health effects   | Value             |
|-------------------------------------------------------------------------------------------------|---------|-----------------|----------------------------|-------------------|
| Benzene, mono-C10-13-alkyl derivs., distn. residues                                             | Workers | Inhalation      | Long-term systemic effects | 2,2 mg/m3         |
|                                                                                                 | Workers | Skin contact    | Long-term systemic effects | 3,15 mg/kg bw/day |
| Molybdenum trioxide, reaction products with bis[O,O-bis(2-ethylhexyl)] hydrogen dithiophosphate | Workers | Inhalation      | Long-term systemic effects | 4,93 mg/m3        |
|                                                                                                 | Workers | Dermal          | Long-term systemic effects | 1,4 mg/kg bw/day  |
| Sulfonic acids, petroleum, calcium salts                                                        | Workers | Inhalation      | Long-term systemic effects | 11,75 mg/m3       |
|                                                                                                 | Workers | Skin contact    | Long-term systemic effects | 3,33 mg/m3        |
|                                                                                                 | Workers | Skin contact    | Long-term local effects    | 1,03 mg/cm2       |

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

| Substance name                                      | Environmental Compartment                            | Value      |
|-----------------------------------------------------|------------------------------------------------------|------------|
| Benzene, mono-C10-13-alkyl derivs., distn. residues | Fresh water                                          | 0,001 mg/l |
|                                                     | Intermittent use/release                             | 0,001 mg/l |
|                                                     | Marine water                                         | 0 mg/l     |
|                                                     | Microbiological Activity in Sewage Treatment Systems | 2 mg/l     |

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|                                          |                                                      |                 |
|------------------------------------------|------------------------------------------------------|-----------------|
|                                          | Fresh water sediment                                 | 16,5 mg/kg      |
|                                          | Marine sediment                                      | 1,65 mg/kg      |
|                                          | Soil                                                 | 3,7 mg/kg       |
| Sulfonic acids, petroleum, calcium salts | Fresh water                                          | 1 mg/l          |
|                                          | Marine water                                         | 1 mg/l          |
|                                          | Intermittent use/release                             | 10 mg/l         |
|                                          | Microbiological Activity in Sewage Treatment Systems | 1000 mg/l       |
|                                          | Fresh water sediment                                 | 226000000 mg/kg |
|                                          | Marine sediment                                      | 226000000 mg/kg |
|                                          | Soil                                                 | 271000000 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/face protection : Safety glasses with side-shields

#### Hand protection

Material : butyl-rubber  
Break through time : > 10 min  
Protective index : Class 1

Remarks : For prolonged or repeated contact use protective gloves. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.  
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.  
Short term only

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

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at the specific workplace.

### Environmental exposure controls

|       |   |                                                                               |
|-------|---|-------------------------------------------------------------------------------|
| Air   | : | No special environmental precautions required.                                |
| Soil  | : | The product should not be allowed to enter drains, water courses or the soil. |
| Water | : | The product should not be allowed to enter drains, water courses or the soil. |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                                  |   |                                                            |
|--------------------------------------------------|---|------------------------------------------------------------|
| Physical state                                   | : | aerosol                                                    |
| Colour                                           | : | brown                                                      |
| Odour                                            | : | characteristic                                             |
| Odour Threshold                                  | : | No data available                                          |
| Melting point/ range                             | : | No data available                                          |
| Boiling point/boiling range                      | : | -42 °C (1.013 hPa)                                         |
| Flammability                                     | : | Flammability (solid, gas):<br>Extremely flammable aerosol. |
| Upper explosion limit / Upper flammability limit | : | 10,9 %(V)                                                  |
| Lower explosion limit / Lower flammability limit | : | 1,5 %(V)                                                   |
| Flash point                                      | : | -60 °C<br>Method: DIN 51755, closed cup                    |
| Auto-ignition temperature                        | : | > 350 °C                                                   |

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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<sup>2</sup>/s (40 °C)

Solubility(ies)  
Water solubility : insoluble

Solubility in other solvents : No data available

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

Vapour pressure : 3.000 hPa (20 °C)

Relative density : 0,67 (20 °C)  
Reference substance: Water  
The value is calculated

Density : 0,67 g/cm<sup>3</sup>  
(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 : not auto-flammable

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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

### 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

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

#### Product:

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

Acute inhalation toxicity : Symptoms: Inhalation may provoke the following symptoms:  
Respiratory disorder

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Acute dermal toxicity : Symptoms: Redness, Local irritation

### Components:

#### **Sulfonic acids, petroleum, calcium salts:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 1,9 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

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

Acute dermal toxicity : Symptoms: Redness, Local irritation

#### **butane:**

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

#### **isobutane:**

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

### **Skin corrosion/irritation**

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

### Product:

Remarks : This information is not available.

### Components:

#### **Sulfonic acids, petroleum, calcium salts:**

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

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

|               |   |                                     |
|---------------|---|-------------------------------------|
| Species       | : | reconstructed human epidermis (RhE) |
| Exposure time | : | 15 min                              |
| Assessment    | : | Irritating to skin.                 |
| Method        | : | OECD Test Guideline 439             |
| Result        | : | Irritating to skin.                 |
| GLP           | : | yes                                 |

### **Serious eye damage/eye irritation**

Causes serious eye irritation.

#### **Product:**

|        |   |                |
|--------|---|----------------|
| Result | : | Eye irritation |
|--------|---|----------------|

#### **Components:**

##### **Sulfonic acids, petroleum, calcium salts:**

|            |   |                         |
|------------|---|-------------------------|
| Species    | : | Rabbit                  |
| Assessment | : | No eye irritation       |
| Method     | : | OECD Test Guideline 405 |
| Result     | : | No eye irritation       |

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

|               |   |                         |
|---------------|---|-------------------------|
| Species       | : | Bovine cornea           |
| Exposure time | : | 10 min                  |
| Assessment    | : | No eye irritation       |
| Method        | : | OECD Test Guideline 437 |
| Result        | : | No eye irritation       |
| GLP           | : | yes                     |

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

May cause an allergic skin reaction.

#### **Respiratory sensitisation**

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

#### **Product:**

|            |   |                                          |
|------------|---|------------------------------------------|
| Assessment | : | May cause sensitisation by skin contact. |
| Result     | : | May cause sensitisation by skin contact. |

#### **Components:**

##### **Sulfonic acids, petroleum, calcium salts:**

|           |   |              |
|-----------|---|--------------|
| Test Type | : | Buehler Test |
| Species   | : | Guinea pig   |

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

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

Test Type : Local lymph node assay (LLNA)  
Species : Mouse  
Assessment : The product is a skin sensitiser, sub-category 1B.  
Method : OECD Test Guideline 429  
Result : The product is a skin sensitiser, sub-category 1B.  
GLP : yes

### **Germ cell mutagenicity**

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

#### **Product:**

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

#### **Components:**

##### **Sulfonic acids, petroleum, calcium salts:**

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

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

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

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

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes

Test Type: in vitro micronucleus test  
Test system: Human lymphocytes  
Metabolic activation: with and without metabolic activation

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Method: OECD Test Guideline 487

Result: negative

GLP: yes

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 490

Result: negative

GLP: yes

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

### Carcinogenicity

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

#### Product:

Remarks : No data available

#### Components:

##### **Sulfonic acids, petroleum, calcium salts:**

Carcinogenicity -  
Assessment : Not classifiable as a human carcinogen.

### Reproductive toxicity

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

#### Product:

Effects on fertility : Remarks: No data available

Effects on foetal  
development : Remarks: No data available

#### Components:

##### **Sulfonic acids, petroleum, calcium salts:**

Effects on fertility : Test Type: reproductive and developmental toxicity study  
Species: Rat  
Application Route: Oral  
General Toxicity - Parent: NOAEL: > 500  
General Toxicity F1: NOAEL: > 500  
Method: OECD Test Guideline 415

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

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

Reproductive toxicity - : - Fertility -  
Assessment  
Animal testing did not show any effects on fertility.

### STOT - single exposure

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

#### Product:

Remarks : No data available

#### Components:

### Sulfonic acids, petroleum, calcium salts:

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

### STOT - repeated exposure

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

#### Product:

Remarks : No data available

#### Components:

### Sulfonic acids, petroleum, calcium salts:

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

### Repeated dose toxicity

#### Product:

Remarks : This information is not available.

#### Components:

### Sulfonic acids, petroleum, calcium salts:

Species : Rat  
NOAEL : 500 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 407

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

Species : Rat, male and female

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|                     |   |                                                                                           |
|---------------------|---|-------------------------------------------------------------------------------------------|
| NOAEL               | : | 100 mg/kg                                                                                 |
| Application Route   | : | oral (gavage)                                                                             |
| Exposure time       | : | 28 d                                                                                      |
| Number of exposures | : | daily                                                                                     |
| Method              | : | OECD Test Guideline 422                                                                   |
| GLP                 | : | yes                                                                                       |
| Remarks             | : | Not classified due to data which are conclusive although insufficient for classification. |

### Aspiration toxicity

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

#### Product:

This information is not available.

## 11.2 Information on other hazards

### Endocrine disrupting properties

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

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

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

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

|                  |   |                            |
|------------------|---|----------------------------|
| Toxicity to fish | : | Remarks: No data available |
|------------------|---|----------------------------|

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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:

#### **Sulfonic acids, petroleum, calcium salts:**

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): > 10.000 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
GLP: yes  
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.000 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 1.500 mg/l  
Exposure time: 72 h  
Test Type: Growth inhibition  
Remarks: No toxicity at the limit of solubility

Toxicity to microorganisms : EC50 (activated sludge): > 10.000 mg/l  
Exposure time: 3 h  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

### **Ecotoxicology Assessment**

Chronic aquatic toxicity : This product has no known ecotoxicological effects., No toxicity at the limit of solubility

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

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Remarks: May cause long-term adverse effects in the aquatic environment.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 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)): > 100 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Analytical monitoring: no  
Method: OECD Test Guideline 209  
GLP: yes

## 12.2 Persistence and degradability

### Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

### Components:

#### **Sulfonic acids, petroleum, calcium salts:**

Biodegradability : Test Type: aerobic  
Inoculum: activated sludge  
Result: Not rapidly biodegradable  
Biodegradation: 8 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: yes

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

Biodegradability : Result: Not rapidly biodegradable  
Biodegradation: 11 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

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### 12.3 Bioaccumulative potential

#### **Product:**

Bioaccumulation : Remarks: No data available

#### **Components:**

##### **Sulfonic acids, petroleum, calcium salts:**

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.

Partition coefficient: n-octanol/water : log Pow: 10,88 (20 °C)  
Method: OECD Test Guideline 117  
GLP: yes

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

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

##### **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

##### **isobutane:**

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

### 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.

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### 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 : No information on ecology is available.

#### Components:

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

Additional ecological information : May cause long lasting harmful effects to aquatic life.

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

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### 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            |
| IATA | : | Aerosols, flammable |

#### 14.3 Transport hazard class(es)

|      | Class | Subsidiary risks |
|------|-------|------------------|
| ADR  | : 2   | 2.1              |
| RID  | : 2   | 2.1              |
| 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                       |
| Packing group                        | : Not assigned by regulation |

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Labels : Flammable Gas

**IATA (Passenger)**

Packing instruction : 203  
(passenger aircraft)

Packing instruction (LQ) : Y203

Packing group : Not assigned by regulation

Labels : Flammable Gas

### 14.5 Environmental hazards

**ADR**

Environmentally hazardous : no

**RID**

Environmentally hazardous : no

**IMDG**

Marine pollutant : no

### 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) | : Conditions of restriction for the following entries must be considered:<br>Number on list 40<br>This substance/mixture shall not be used in aerosol dispensers intended for supply to the general public for entertainment and decorative purposes.<br><br>Number on list 75<br>If you intend to use this product as tattoo ink, please contact your vendor. |
| 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).                                                                                                                                                                                                                                            |

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Regulation (EU) No 2024/590 on substances that deplete the ozone layer (EC 2024/590) : Not applicable

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

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

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

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : 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

18 Liquefied flammable gases (including LPG) and natural gas

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control)  
Volatile organic compounds (VOC) content: 55 %

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### 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

|      |                                                           |
|------|-----------------------------------------------------------|
| H220 | : Extremely flammable gas.                                |
| H280 | : Contains gas under pressure; may explode if heated.     |
| H315 | : Causes skin irritation.                                 |
| H317 | : May cause an allergic skin reaction.                    |
| H413 | : May cause long lasting harmful effects to aquatic life. |

### Full text of other abbreviations

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aquatic Chronic  | : Long-term (chronic) aquatic hazard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Flam. Gas        | : Flammable gases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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 S           | : This substance may not require a label according to Article 17 (see Section 1.3 of Annex I) (Table 3).                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Note U (Table 3) | : 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). |
| Press. Gas       | : Gases under pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Skin Irrit.      | : Skin irritation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Skin Sens.       | : Skin sensitisation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ES VLA           | : Spain. Environmental Limits for exposure to Chemical agents - Table 1: Occupational Exposure Values                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ES VLA / VLA-ED  | : Environmental Daily Limit Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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; BGW - Biological Limit Values; 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 -

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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 Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LSPN - List of Hazardous Notified Substances (Chile); 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 - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; 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 Irrit. 2 | H319       |
| Skin Sens. 1 | H317       |

#### Classification procedure:

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

- || Relevant changes compared to the last edition are highlighted at the left margin. This version replaces all previous editions.

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