

# SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758 - GB



## OKS 221

Version	Revision Date:	Date of last issue: 13.08.2018	Print Date:
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## 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 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  
D-82216 Maisach-Gernlinden  
Tel.: +49 8142 3051 500  
Fax.: +49 8142 3051 599  
info@oks-germany.com

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

National contact :

### 1.4 Emergency telephone number

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

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

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 exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters

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airways.

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) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

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 airways. 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	:	<b>Prevention:</b> 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. <b>Response:</b> 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. <b>Storage:</b> P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

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### Hazardous components which must be listed on the label:

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.

## 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	Flam. Liq.2; H225 STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411; EUH066		>= 30 - < 50
propane	74-98-6 200-827-9  601-003-00-5	Flam. Gas1; H220 Press. GasCompr. Gas; H280		>= 10 - < 20
calcium dihydroxide	1305-62-0 215-137-3	Skin Irrit.2; H315 Eye Dam.1; H318 STOT SE3; H335		>= 3 - < 10
isobutane	75-28-5 200-857-2  601-004-00-0	Flam. Gas1A; H220 Press. GasCompr. Gas; H280		>= 1 - < 10

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Substances with a workplace exposure limit :				
butane	106-97-8 203-448-7  601-004-00-0	Flam. Gas1; H220 Press. GasCompr. Gas; H280		>= 10 - < 20
molybdenum disulphide	1317-33-5 215-263-9	Not classified		>= 1 - < 10
Graphite	7782-42-5 231-955-3	Not classified		>= 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.
- 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.

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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 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  
Sulphur oxides  
Metal oxides

### 5.3 Advice for firefighters

Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

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for firefighters 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

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.

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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	600 ppm 1,800 mg/m <sup>3</sup>	GB EH40GB EH40 (2007-08-01)
		TWA	1,000 ppm 3,000 mg/m <sup>3</sup>	2006/15/EC2 006/15/EC (2006-02-09)
Further information: Indicative				
butane	106-97-8	STEL	750 ppm 1,810 mg/m <sup>3</sup>	GB EH40GB EH40 (2007-08-01)
Further information: Capable of causing cancer and/or heritable genetic				

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	damage.			
		TWA	600 ppm 1,450 mg/m3	GB EH40GB EH40 (2007-08-01)
Further information: Capable of causing cancer and/or heritable genetic damage.				
molybdenum disulphide	1317-33-5	TWA	10 mg/m3 (Molybdenum)	GB EH40GB EH40 (2005-04-06)
		STEL	20 mg/m3 (Molybdenum)	GB EH40GB EH40 (2005-04-06)
calcium dihydroxide	1305-62-0	TWA	5 mg/m3	GB EH40GB EH40 (2020-01-01)
		TWA (Respirable fraction)	1 mg/m3	GB EH40GB EH40 (2020-01-01)
		STEL (Respirable fraction)	4 mg/m3	GB EH40GB EH40 (2020-01-01)
		TWA (Respirable fraction)	1 mg/m3	2017/164/EU 2017/164/EU (2017-02-01)
Further information: Indicative				
		STEL (Respirable fraction)	4 mg/m3	2017/164/EU 2017/164/EU (2017-02-01)
Further information: Indicative				
Graphite	7782-42-5	TWA (inhalable dust)	10 mg/m3	GB EH40GB EH40 (2020-01-01)
		TWA (Respirable dust)	4 mg/m3	GB EH40GB EH40 (2020-01-01)

### Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
pentane	Workers	Inhalation	Long-term systemic effects	3000 mg/m3
	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/m3
	Workers	Skin contact	Long-term systemic effects	4.3 mg/kg bw/day
calcium dihydroxide	Workers	Inhalation	Long-term local	1 mg/m3

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			effects	
	Workers	Inhalation	Acute local effects	4 mg/m <sup>3</sup>
Graphite	Workers	Inhalation	Long-term local effects	1.2 mg/m <sup>3</sup>

### Predicted No Effect Concentration (PNEC):

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 derivs., distr. 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
	Fresh water sediment	1.65 mg/kg
calcium dihydroxide	Marine sediment	0.165 mg/kg
	Soil	0.329 mg/kg
	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.

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.

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- 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance : aerosol
- Colour : black
- Odour : characteristic
- Odour Threshold : No data available
- pH : Not applicable  
substance/mixture is non-soluble (in water)
- Melting point/range : No data available
- Boiling point/boiling range : -161 °C (1,013 hPa)
- Flash point : -60 °C  
Method: Abel-Pensky
- Evaporation rate : No data available
- Flammability (solid, gas) : Extremely flammable aerosol.
- Upper explosion limit / Upper flammability limit : 10.9 %(V)
- Lower explosion limit / Lower flammability limit : 1.4 %(V)
- Vapour pressure : 3,700 hPa (20 °C)

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Relative vapour density : No data available

Relative density : 0.675 (20 °C)  
Reference substance: Water  
The value is calculated

Density : 0.68 g/cm<sup>3</sup>  
(20 °C)

Bulk density : No data available

Solubility(ies)  
Water solubility : insoluble

Solubility in other solvents : No data available

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

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : < 20.5 mm<sup>2</sup>/s (40 °C)

Explosive properties : Not explosive

Oxidizing properties : No data available

### 9.2 Other information

Sublimation point : No data available

Metal corrosion rate : Not corrosive to metals

Self-ignition : 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.

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### 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 toxicological effects

#### 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,  
Fatigue, 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  
blistering.  
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  
inhalation toxicity

##### **calcium dihydroxide:**

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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 toxicity

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

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

### isobutane:

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

### 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

### 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.

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### 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

### 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:

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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  
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.

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### Carcinogenicity

#### Product:

Remarks : No data available

#### Components:

##### calcium dihydroxide:

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

##### molybdenum disulphide:

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

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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:

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.

### 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.

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## 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.

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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

### 12.2 Persistence and degradability

#### Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

### 12.3 Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT). This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

### 12.4 Mobility in soil

#### Product:

Mobility : Remarks: No data available

Distribution among 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 Other adverse effects

#### Product:

Endocrine disrupting potential : 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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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  
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

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**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  
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

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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
- Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals (EU PIC) : Not applicable
- UK REACH List of substances subject to authorisation (Annex XIV) (UK. REACH Annex XIV) : Not applicable
- GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation (GB PIC) : Not applicable
- Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : Not applicable

### 15.2 Chemical safety assessment

This information is not available.

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### SECTION 16: Other information

#### Full text of R-Phrases

- 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).

#### 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.

#### Full text of other abbreviations

- 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

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2017/164/EU : Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values  
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits  
2006/15/EC / TWA : Limit Value - eight hours  
2017/164/EU / STEL : Short term exposure limit  
2017/164/EU / TWA : Limit Value - eight hours  
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)  
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

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

### Classification of the mixture:

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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