# Safety data sheet
# according to Regulation (EC) No 1907/2006, Annex II

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

### 1.1 Product identifier

## Keramik Pulverspray

### 1.2 Relevant identified uses of the substance or mixture and uses advised against
**Relevant identified uses of the substance or mixture:**
Lubricant
**Uses advised against:**
No information available at present.

### 1.3 Details of the supplier of the safety data sheet
GB

LIQUI MOLY GmbH
Jerg-Wieland-Str. 4
89081 Ulm-Lehr
Tel.: (+49) 0731-1420-0
Fax: (+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

### 1.4 Emergency telephone number
**Emergency information services / official advisory body:**
GB

Landspitali- The National University Hospital of Iceland, tel. +354 543 2222 or 112 (valid only for Iceland)
**Telephone number of the company in case of emergencies:**
+49 (0) 700 / 24 112 112 (LMR)
+1 872 5888271 (LMR)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture
**Classification according to Regulation (EC) 1272/2008 (CLP)**

| Hazard class | Hazard category | Hazard statement |
|---|---|---|
| Aquatic Chronic | 3 | H412-Harmful to aquatic life with long lasting effects. |
| Aerosol | 1 | H222-Extremely flammable aerosol. |
| Aerosol | 1 | H229-Pressurised container: May burst if heated. |

### 2.2 Label elements
**Labeling according to Regulation (EC) 1272/2008 (CLP)**

Danger

H412-Harmful to aquatic life with long lasting effects. H222-Extremely flammable aerosol. H229-Pressurised container: May burst if heated.

P102-Keep out of reach of children.
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.
P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.
P501-Dispose of contents / container in accordance with all local, regional, national and international laws.

Without adequate ventilation, formation of explosive mixtures may be possible.

## 2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).
Dangerous vapours heavier than air.

# SECTION 3: Composition/information on ingredients

## 3.1 Substances

n.a.

## 3.2 Mixtures

| **Dimethyl ether** | **Substance for which an EU exposure limit value applies.** |
|---|---|
| **Registration number (REACH)** | 01-2119472128-37-XXXX |
| **Index** | 603-019-00-8 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 204-065-8 |
| **CAS** | 115-10-6 |
| **content %** | 75-90 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | Flam. Gas 1A, H220 |

| **Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane** | |
|---|---|
| **Registration number (REACH)** | 01-2119475514-35-XXXX |
| **Index** | --- |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 921-024-6 |
| **CAS** | --- |
| **content %** | 5-<10 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411 |

| **Ethanol** | |
|---|---|
| **Registration number (REACH)** | 01-2119457610-43-XXXX |
| **Index** | 603-002-00-5 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 200-578-6 |

| | |
|---|---|
| **CAS** | 64-17-5 |
| **content %** | 5-<10 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319 |
| **Specific Concentration Limits and ATE** | Eye Irrit. 2, H319: >=50 % |

Impurities, test data and additional information may have been taken into account in classifying and labelling the product.
For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
The substances named in this section are given with their actual, appropriate classification!
For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.
The addition of the highest concentrations listed here can result in a classification. Only when this classification is listed in Section 2 does it apply. In all other cases the total concentration is below the classification.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures
First-aiders should ensure they are protected!
Never pour anything into the mouth of an unconscious person!

### Inhalation
Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.

### Skin contact
Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

### Eye contact
Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

### Ingestion
Typically no exposure pathway.
Rinse the mouth thoroughly with water.
Do not induce vomiting - give copious water to drink. Consult doctor immediately.

### 4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

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

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media
### Suitable extinguishing media
Water jet spray/foam/CO2/dry extinguisher
### Unsuitable extinguishing media
High volume water jet

### 5.2 Special hazards arising from the substance or mixture
In case of fire the following can develop:
Oxides of carbon
Formaldehyde
Toxic gases
Possible build up of explosive/highly flammable vapour/air mixture.
Danger of bursting (explosion) when heated

### 5.3 Advice for firefighters
For personal protective equipment see Section 8.
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary.
Cool container at risk with water.

Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
Ensure sufficient ventilation, remove sources of ignition.
Avoid dust formation with solid or powder products.
Leave the danger zone if possible, use existing emergency plans if necessary.
Avoid contact with eyes or skin.
If applicable, caution - risk of slipping.

#### 6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

### 6.2 Environmental precautions

Prevent penetration into drains, cellars, working pits or other places in which accumulation could be hazardous.
Prevent surface and ground-water infiltration, as well as ground penetration.
If accidental entry into drainage system occurs, inform responsible authorities.

### 6.3 Methods and material for containment and cleaning up

If spray or gas escapes, ensure ample fresh air is available.
Active substance:
Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.
Fill the absorbed material into lockable containers.

### 6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

## SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

### 7.1 Precautions for safe handling

#### 7.1.1 General recommendations

Ensure good ventilation.
Avoid contact with eyes or skin.
Keep away from sources of ignition - Do not smoke.
Take measures against electrostatic charging, if appropriate.
Do not use on hot surfaces.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

#### 7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Observe special regulations for aerosols!
Observe special storage conditions.
Do not store with flammable or self-igniting materials.
Keep protected from direct sunlight and temperatures over 50°C.
Store in a well-ventilated place.
Store cool.

### 7.3 Specific end use(s)

No information available at present.
Observe the instructions for good working practice and the recommendations for risk assessment.
Consult hazardous substance information systems, e.g. from the professional associations, the chemical industry or different industries, depending on the application (building materials, wood, chemistry, laboratory, leather, metal).

# SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

Workplace exposure limit (WEL) of the total hydrocarbon solvent content of the mixture (RCP method according to EH40):
600 mg/m3

| GB | Chemical Name | Dimethyl ether | |
|---|---|---|---|
| WEL-TWA: 400 ppm (766 mg/m3) (WEL-TWA), 1000 ppm (1920 mg/m3) (EU) | WEL-STEL: 500 ppm (958 mg/m3) (WEL-STEL) | --- | |
| Monitoring procedures: | - Compur - KITA-123 S (549 129) | | |
| BMGV: --- | Other information: --- | | |

| GB | Chemical Name | Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane | |
|---|---|---|---|
| WEL-TWA: 600 mg/m3 | WEL-STEL: --- | --- | |
| Monitoring procedures: | - Compur - KITA-187 S (551 174) | | |
| BMGV: --- | Other information: (OEL acc. to RCP-method, paragraphs 84-87, EH40) | | |

| GB | Chemical Name | Ethanol | |
|---|---|---|---|
| WEL-TWA: 1000 ppm (1920 mg/m3) | WEL-STEL: --- | --- | |
| Monitoring procedures: | - Draeger - Alcohol 25/a Ethanol (81 01 631)<br>- Compur - KITA-104 SA (549 210)<br>DFG (D) (Loesungsmittelgemische), Methode Nr. 6 DFG (E) (Solvent mixtures) - 2013,<br>- 2002 - EU project BC/CEN/ENTR/000/2002-16 card 63-2 (2004)<br>DFG Meth. Nr. 2 (D) (Loesungsmittelgemische) - 2013 - EU project<br>- BC/CEN/ENTR/000/2002-16 card 63-2 (2004)<br>DFG Meth. Nr. 3 (D) (Loesungsmittelgemische) - 2013 - EU project<br>- BC/CEN/ENTR/000/2002-16 card 63-2 (2004) | | |
| BMGV: --- | Other information: --- | | |

**Dimethyl ether**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| | Environment - freshwater | | PNEC | 0,155 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 0,681 | mg/kg | |
| | Environment - soil | | PNEC | 0,045 | mg/kg | |
| | Environment - sewage treatment plant | | PNEC | 160 | mg/l | |
| | Environment - marine | | PNEC | 0,016 | mg/l | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 1,549 | mg/l | |
| | Environment - sediment, marine | | PNEC | 0,069 | mg/kg | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 471 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 1894 | mg/m3 | |

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

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 699 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 608 | mg/m3 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Consumer | Human - oral | Long term, systemic effects | DNEL | 699 | mg/kg bw/day | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 773 | mg/kg bw/day | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 300 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 2035 | mg/m3 | |

**Ethanol**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| | Environment - freshwater | | PNEC | 0,96 | mg/l | |
| | Environment - marine | | PNEC | 0,79 | mg/l | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 2,75 | mg/l | |
| | Environment - sewage treatment plant | | PNEC | 580 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 3,6 | mg/kg dry weight | |
| | Environment - soil | | PNEC | 0,63 | mg/kg dry weight | |
| | Environment - oral (animal feed) | | PNEC | 0,38 | g/kg feed | |
| | Environment - sediment, marine | | PNEC | 2,9 | mg/kg dry weight | |
| Consumer | Human - dermal | Short term, local effects | DNEL | 950 | mg/m3 | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 114 | mg/m3 | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 87 | mg/kg | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 206 | mg/kg bw/d | |
| Consumer | Human - inhalation | Short term, local effects | DNEL | 950 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 343 | mg/kg bw/d | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 950 | mg/m3 | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 1900 | mg/m3 | |

GB - United Kingdom | WEL-TWA = Workplace Exposure Limit - Long-term exposure limit - 8-hour TWA (= time weighted average) reference period (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
(EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
(8) = Inhalable fraction (2004/37/CE, 2017/164/EU). (9) = Respirable fraction (2004/37/CE, 2017/164/EU). (11) = Inhalable fraction (2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (2004/37/CE). |
| WEL-STEL = Workplace Exposure Limit - Short-term exposure limit - 15-minute reference period (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
(EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
(8) = Inhalable fraction (2004/37/EC, 2017/164/EU). (9) = Respirable fraction (2004/37/EC, 2017/164/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). |
| BMGV = Biological monitoring guidance value (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
(EU) = Directive 98/24/EC or 2004/37/EC or SCOEL (Biological Limit Value - BLV, Recommendation from the Scientific Committee on Occupational Exposure Limits (SCOEL)) |
| Other information (EH40/2005 Workplace exposure limits (Fourth Edition 2020)): Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
(EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (2004/37/CE), (14) = The substance can cause sensitisation of the skin (2004/37/CE). |

## 8.2 Exposure controls
### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.
Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.
These are specified by e.g. EN 14042.
EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

### 8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:
Chemical resistant protective gloves (EN ISO 374).
If applicable
Protective Neoprene® / polychloroprene gloves (EN ISO 374).
Protective nitrile gloves (EN ISO 374).
Protective Viton® / fluoroelastomer gloves (EN ISO 374).
Minimum layer thickness in mm:
0,5
Permeation time (penetration time) in minutes:
480
The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
If OES or MEL is exceeded.
Filter A2 P2 (EN 14387), code colour brown, white
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

### 8.2.3 Environmental exposure controls

No information available at present.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state: | Aerosol. Active substance: liquid. 20°C |

| | |
|---|---|
| Colour: | White |
| Odour: | Characteristic |
| Melting point/freezing point: | There is no information available on this parameter. |
| Boiling point or initial boiling point and boiling range: | There is no information available on this parameter. |
| Flammability: | Does not apply to aerosols. |
| Lower explosion limit: | There is no information available on this parameter. |
| Upper explosion limit: | There is no information available on this parameter. |
| Flash point: | -42 °C |
| Auto-ignition temperature: | Does not apply to aerosols. |
| Decomposition temperature: | There is no information available on this parameter. |
| pH: | Mixture is non-soluble (in water). |
| Kinematic viscosity: | Does not apply to aerosols. |
| Solubility: | There is no information available on this parameter. |
| Partition coefficient n-octanol/water (log value): | Does not apply to mixtures. |
| Vapour pressure: | 4400 hPa (20°C) |
| Vapour pressure: | 7600 hPa (50°C) |
| Density and/or relative density: | 0,69 g/cm3 |
| Density and/or relative density: | 0,781 g/ml (Active substance ) |
| Relative vapour density: | Does not apply to aerosols. |
| Particle characteristics: | Does not apply to aerosols. |

### 9.2 Other information
No information available at present.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
The product has not been tested.
### 10.2 Chemical stability
Stable with proper storage and handling.
### 10.3 Possibility of hazardous reactions
No dangerous reactions are known.
### 10.4 Conditions to avoid
Heating, open flame, ignition sources
Pressure increase will result in danger of bursting.
### 10.5 Incompatible materials
Avoid contact with strong oxidizing agents.
### 10.6 Hazardous decomposition products
No decomposition when used as directed.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Possibly more information on health effects, see Section 2.1 (classification).

| **Keramik Pulverspray** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | | | | | | n.d.a. |
| Acute toxicity, by dermal route: | | | | | | n.d.a. |
| Acute toxicity, by inhalation: | | | | | | n.d.a. |
| Skin corrosion/irritation: | | | | | | n.d.a. |
| Serious eye damage/irritation: | | | | | | n.d.a. |
| Respiratory or skin sensitisation: | | | | | | n.d.a. |
| Germ cell mutagenicity: | | | | | | n.d.a. |
| Carcinogenicity: | | | | | | n.d.a. |
| Reproductive toxicity: | | | | | | n.d.a. |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | n.d.a. |
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | | | | n.d.a. |
| Aspiration hazard: | | | | | | n.d.a. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Symptoms: | | | | | | n.d.a. |

| **Dimethyl ether** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by inhalation: | LC50 | 164 | mg/l/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | |
| Skin corrosion/irritation: | | | | | | Not irritant |
| Serious eye damage/irritation: | | | | | | Not irritant |
| Respiratory or skin sensitisation: | | | | | | No (skin contact) |
| Germ cell mutagenicity: | | | | | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 477 (Genetic Toxicology - Sex-Linked Recessive Lethal Test in Drosophilia melanogaster) | Negative |
| Carcinogenicity: | NOAEC | 47000 | mg/m3 | Rat | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Negative |
| Reproductive toxicity: | NOAEL | 5000 | ppm | Rat | OECD 414 (Prenatal Developmental Toxicity Study) | |
| Specific target organ toxicity - repeated exposure (STOT-RE): | NOAEC | 47106 | mg/kg | Rat | OECD 452 (Chronic Toxicity Studies) | Negative(2 a) |
| Aspiration hazard: | | | | | | No |

| **Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | LD50 | >5840 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >2800-3100 | mg/kg | Rat | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | >20 | mg/l/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | Vapours |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Skin Irrit. 2 |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Mild irritant (Analogous conclusion) |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact) |
| Germ cell mutagenicity: | | | | | OECD 471 (Bacterial Reverse Mutation Test) | Analogous conclusion, Negative |
| Carcinogenicity: | | | | | | Negative |
| Reproductive toxicity: | | | | | OECD 414 (Prenatal Developmental Toxicity Study) | Analogous conclusion, Negative |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | May cause drowsiness or dizziness., STOT SE 3, H336 |
| Aspiration hazard: | | | | | | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| Symptoms: | | | | | | drowsiness, unconsciousness, heart/circulatory disorders, headaches, cramps, drowsiness, mucous membrane irritation, dizziness, nausea and vomiting. |

**Ethanol**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by oral route: | LD50 | 10470 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rabbit | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | 51-124,7 | mg/l/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | Vapours |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Eye Irrit. 2 |
| Respiratory or skin sensitisation: | | | | Mouse | OECD 429 (Skin Sensitisation - Local Lymph Node Assay) | No (skin contact) |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mouse | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test) | Negative |
| Carcinogenicity: | NOAEL | >3000 | mg/kg | Rat | OECD 451 (Carcinogenicity Studies) | 24 mon |
| Reproductive toxicity: | NOAEL | 5200 | mg/kg bw/d | Rat | OECD 416 (Two-generation Reproduction Toxicity Study) | |
| Specific target organ toxicity - repeated exposure (STOT-RE): | NOAL | >20 | mg/l | Rat | OECD 403 (Acute Inhalation Toxicity) | Male |
| Specific target organ toxicity - repeated exposure (STOT-RE): | NOAEL | 1730 | mg/kg/d | Rat | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | Female |

| | | | | | | |
|---|---|---|---|---|---|---|
| Symptoms: | | | | | | respiratory distress, drowsiness, unconsciousness, drop in blood pressure, vomiting, coughing, headaches, intoxication, drowsiness, mucous membrane irritation, dizziness, nausea |

## 11.2. Information on other hazards

| **Keramik Pulverspray** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Endocrine disrupting properties: | | | | | | Does not apply to mixtures. |
| Other information: | | | | | | No other relevant information available on adverse effects on health. |

| **Ethanol** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Other information: | | | | | | Excessive alcohol consumption during pregnancy induces the foetus alcohol syndrome (reduced weight at birth, physical and mental disorders)., There is no sign that this syndrome is also caused by dermal or inhalative absorption., Experiences on persons. |

# SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

| **Keramik Pulverspray** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | | | | | | | n.d.a. |
| 12.1. Toxicity to daphnia: | | | | | | | n.d.a. |
| 12.1. Toxicity to algae: | | | | | | | n.d.a. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.2. Persistence and degradability: | | | | | | | n.d.a. |
| 12.3. Bioaccumulative potential: | | | | | | | n.d.a. |
| 12.4. Mobility in soil: | | | | | | | n.d.a. |
| 12.5. Results of PBT and vPvB assessment | | | | | | | n.d.a. |
| 12.6. Endocrine disrupting properties: | | | | | | | Does not apply to mixtures. |
| 12.7. Other adverse effects: | | | | | | | No information available on other adverse effects on the environment. |
| Other information: | DOC | | | | | | DOC-elimination degree(complexing organic substance)>= 80%/28d: n.a. |
| Other information: | AOX | | | | | | According to the recipe, contains no AOX. |

| **Dimethyl ether** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | LC0 | 96h | 2695 | mg/l | Pimephales promelas | | |
| 12.1. Toxicity to fish: | LC50 | 96h | 3082 | mg/l | Salmo gairdneri | | |
| 12.1. Toxicity to fish: | LC50 | 96h | >4,1 | mg/l | Poecilia reticulata | | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | >4,4 | mg/l | Daphnia magna | | |
| 12.1. Toxicity to algae: | EC50 | 96h | 154,9 | mg/l | Chlorella vulgaris | | |
| 12.2. Persistence and degradability: | | 28d | 5 | % | | OECD 301 D (Ready Biodegradability - Closed Bottle Test) | Not readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | -0,07 | | | | Bioaccumulation is unlikely (LogPow < 1). 25°C (pH 7) |
| 12.4. Mobility in soil: | H (Henry) | | 518,6 | Pa*m3/mol | | | No adsorption in soil. |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Toxicity to bacteria: | EC10 | | >1600 | mg/l | Pseudomonas putida | | |
| Water solubility: | | | 45,60 | mg/l | | | 25°C |

| **Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | NOEC/NOEL | 28d | 2,045 | mg/l | Oncorhynchus mykiss | | |
| 12.1. Toxicity to fish: | NOELR | 28d | 2,04 | mg/l | Salmo gairdneri | | |
| 12.1. Toxicity to fish: | LC50 | 96h | 11,4 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to fish: | LL50 | 96h | 11,4 | mg/l | Salmo gairdneri | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 3 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.1. Toxicity to daphnia: | NOELR | 48h | 2,1 | mg/l | Daphnia magna | | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 21d | 0,17 | mg/l | Daphnia magna | OECD 211 (Daphnia magna Reproduction Test) | |
| 12.1. Toxicity to algae: | EC50 | 72h | 30-100 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 81 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | | | | | | | Concentration in organisms possible. |
| 12.3. Bioaccumulative potential: | BCF | | 242-253 | | | | |
| 12.4. Mobility in soil: | | | | | | | Adsorption in ground., Product is slightly volatile. |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Other information: | AOX | | 0 | % | | | |

| **Ethanol** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | LC50 | 96h | 13000 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to fish: | NOEC/NOEL | 120h | 250 | mg/l | Brachydanio rerio | OECD 212 (Fish, Short- term Toxicity Test on Embryo and Sac-fry Stages) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 5414 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 10d | 9,6 | mg/l | Ceriodaphnia spec. | | References |
| 12.1. Toxicity to algae: | EC50 | 72h | 275 | mg/l | Chlorella vulgaris | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 97 | % | activated sludge | OECD 301 B (Ready Biodegradability - Co2 Evolution Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | (-0,35) - (-0,32) | | | | Bioaccumulation is unlikely (LogPow < 1). |
| 12.3. Bioaccumulative potential: | BCF | | 0,66 - 3,2 | | | | |
| 12.4. Mobility in soil: | H (Henry) | | 0,000138 | | | | |
| 12.4. Mobility in soil: | Koc | | 1,0 | | | | Highestimated |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Toxicity to bacteria: | IC50 | 3h | >1000 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | Analogous conclusion |
| Other organisms: | NOEC/NOEL | | 280 | mg/l | Lemna gibba | OECD 201 (Alga, Growth Inhibition Test) | |
| Other information: | COD | | 1,9 | g/g | | | |
| Other information: | BOD5 | | 1 | g/g | | | |

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

### For the substance / mixture / residual amounts

EC disposal code no.:
The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
16 05 04 gases in pressure containers (including halons) containing hazardous substances
Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
Take full aerosol cans to problem waste collection.
Take emptied aerosol cans to valuable material collection.

### For contaminated packing material

Pay attention to local and national official regulations.
Recommendation:
Do not perforate, cut up or weld uncleaned container.
Recycling
15 01 04 metallic packaging

## SECTION 14: Transport information

### General statements

### Transport by road/by rail (ADR/RID)

| | |
|---|---|
| 14.1. UN number or ID number: | 1950 |
| 14.2. UN proper shipping name: | |
| UN 1950 AEROSOLS | |
| 14.3. Transport hazard class(es): | 2.1 |
| 14.4. Packing group: | - |
| 14.5. Environmental hazards: | Not applicable |
| Tunnel restriction code: | D |
| Classification code: | 5F |
| LQ: | 1 L |
| Transport category: | 2 |

### Transport by sea (IMDG-code)

| | |
|---|---|
| 14.1. UN number or ID number: | 1950 |
| 14.2. UN proper shipping name: | |
| UN 1950 AEROSOLS | |
| 14.3. Transport hazard class(es): | 2.1 |
| 14.4. Packing group: | - |
| 14.5. Environmental hazards: | Not applicable |
| Marine Pollutant: | Not applicable |
| EmS: | F-D, S-U |

### Transport by air (IATA)

| | |
|---|---|
| 14.1. UN number or ID number: | 1950 |
| 14.2. UN proper shipping name: | |

UN 1950 Aerosols, flammable

| | |
|---|---|
| 14.3. Transport hazard class(es): | 2.1 |
| 14.4. Packing group: | - |
| 14.5. Environmental hazards: | Not applicable |

## 14.6. Special precautions for user

Persons employed in transporting dangerous goods must be trained.
All persons involved in transporting must observe safety regulations.
Precautions must be taken to prevent damage.

## 14.7. Maritime transport in bulk according to IMO instruments

Freighted as packaged goods rather than in bulk, therefore not applicable.
Minimum amount regulations have not been taken into account.
Danger code and packing code on request.
Comply with special provisions.

# SECTION 15: Regulatory information

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

Observe restrictions:
Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
Regulation (EC) No 1907/2006, Annex XVII
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane
Comply with trade association/occupational health regulations.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 1 - The following categories apply to this product (others may also need to be considered according to storage, handling etc.):

| Hazard categories | Notes to Annex I | Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier requirements | Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier requirements |
|---|---|---|---|
| P3a | 11.1 | 150 (netto) | 500 (netto) |

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2010/75/EU (VOC): 89,3 %

Observe incident regulations.

National requirements/regulations on safety and health protection must be applied when using work equipment.

## 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

# SECTION 16: Other information

Revised sections: n.a.
Employee training in handling dangerous goods is required.
These details refer to the product as it is delivered.
Employee instruction/training in handling hazardous materials is required.

## Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

| Classification in accordance with regulation (EC) No. 1272/2008 (CLP) | Evaluation method used |
|---|---|
| Aquatic Chronic 3, H412 | Classification according to calculation procedure. |
| Aerosol 1, H222 | Classification according to calculation procedure. |

| | |
|---|---|
| Aerosol 1, H229 | Classification based on the form or physical state. |

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents.
H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
H220 Extremely flammable gas.

Aquatic Chronic — Hazardous to the aquatic environment - chronic
Aerosol — Aerosols
Flam. Gas — Flammable gases - Flammable gas
Flam. Liq. — Flammable liquid
Skin Irrit. — Skin irritation
STOT SE — Specific target organ toxicity - single exposure - narcotic effects
Asp. Tox. — Aspiration hazard
Eye Irrit. — Eye irritation

## Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.
Guidelines for the preparation of safety data sheets as amended (ECHA).
Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).
Safety data sheets for the constituent substances.
ECHA Homepage - Information about chemicals.
GESTIS Substance Database (Germany).
German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).
EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.
National Lists of Occupational Exposure Limits for each country as amended.
Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

## Any abbreviations and acronyms used in this document:

acc., acc. to according, according to
ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
AOX Adsorbable organic halogen compounds
approx. approximately
Art., Art. no. Article number
ASTM ASTM International (American Society for Testing and Materials)
ATE Acute Toxicity Estimate
BAM Bundesanstalt für Materialforschung und -prüfung (= Federal Institute for Materials Research and Testing, Germany)
BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)
BCF Bioconcentration factor
BSEF The International Bromine Council
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
CMR carcinogenic, mutagenic, reproductive toxic
DMEL Derived Minimum Effect Level
DNEL Derived No Effect Level
DOC Dissolved organic carbon
e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)
EC European Community
ECHA European Chemicals Agency
ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect
EEC European Economic Community
EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances
EN European Norms
EPA United States Environmental Protection Agency (United States of America)
ErCx, EμCx, ErLx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)
etc. et cetera
EU European Union
EVAL Ethylene-vinyl alcohol copolymer
Fax. Fax number
gen. general
GHS Globally Harmonized System of Classification and Labelling of Chemicals
GWP Global warming potential
Koc Adsorption coefficient of organic carbon in the soil
Kow octanol-water partition coefficient
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC (Code) International Bulk Chemical (Code)
IMDG-code International Maritime Code for Dangerous Goods
incl. including, inclusive
IUCLID International Uniform Chemical Information Database
IUPAC International Union for Pure Applied Chemistry
LC50 Lethal Concentration to 50 % of a test population
LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)
Log Koc Logarithm of adsorption coefficient of organic carbon in the soil
Log Kow, Log Pow Logarithm of octanol-water partition coefficient
LQ Limited Quantities
MARPOL International Convention for the Prevention of Marine Pollution from Ships
mg/kg bw mg/kg body weight
mg/kg bw/d, mg/kg bw/day mg/kg body weight/day
mg/kg dw mg/kg dry weight
mg/kg wwt mg/kg wet weight
n.a. not applicable
n.av. not available
n.c. not checked
n.d.a. no data available
NIOSH National Institute for Occupational Safety and Health (USA)
NLP No-longer-Polymer
NOEC, NOEL No Observed Effect Concentration/Level
OECD Organisation for Economic Co-operation and Development
org. organic
OSHA Occupational Safety and Health Administration (USA)
PBT persistent, bioaccumulative and toxic
PE Polyethylene
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polyvinylchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 6/7/8/9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
TOC Total organic carbon
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.
These statements were made by:

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