# 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

## Zink-Alu Spray

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

**Relevant identified uses of the substance or mixture:**
Paint

**Uses advised against:**
No information available at present.

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

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:**
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**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 |
|---|---|---|
| Eye Irrit. | 2 | H319-Causes serious eye irritation. |
| STOT SE | 3 | H336-May cause drowsiness or dizziness. |
| Aquatic Chronic | 2 | H411-Toxic 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

H319-Causes serious eye irritation. H336-May cause drowsiness or dizziness. H411-Toxic to aquatic life with long lasting effects. H222-Extremely flammable aerosol. H229-Pressurised container: May burst if heated.

P101-If medical advice is needed, have product container or label at hand. 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. P261-Avoid breathing vapours or spray. P273-Avoid release to the environment. P280-Wear eye protection.
P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312-Call a POISON CENTRE / doctor if you feel unwell.
P405-Store locked up. P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.
P501-Dispose of contents / container to an approved waste disposal facility.

EUH066-Repeated exposure may cause skin dryness or cracking.

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

## 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 %).

# SECTION 3: Composition/information on ingredients

Aerosol

## 3.1 Substances

n.a.

## 3.2 Mixtures

| **Zinc powder - zinc dust (stabilized)** | |
|---|---|
| **Registration number (REACH)** | 01-2119467174-37-XXXX |
| **Index** | 030-001-01-9 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 231-175-3 |
| **CAS** | 7440-66-6 |
| **content %** | 10-<25 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | Aquatic Acute 1, H400 (M=1)<br>Aquatic Chronic 1, H410 (M=1) |

| **Ethyl acetate** | **Substance for which an EU exposure limit value applies.** |
|---|---|
| **Registration number (REACH)** | 01-2119475103-46-XXXX |
| **Index** | 607-022-00-5 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 205-500-4 |
| **CAS** | 141-78-6 |
| **content %** | 15-<20 |

| | |
|---|---|
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | EUH066<br>Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>STOT SE 3, H336 |

| **Acetone** | **Substance for which an EU exposure limit value applies.** |
|---|---|
| **Registration number (REACH)** | 01-2119471330-49-XXXX |
| **Index** | 606-001-00-8 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 200-662-2 |
| **CAS** | 67-64-1 |
| **content %** | 1-<10 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | EUH066<br>Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>STOT SE 3, H336 |

| **Xylene** | **Substance for which an EU exposure limit value applies.** |
|---|---|
| **Registration number (REACH)** | 01-2119488216-32-XXXX |
| **Index** | 601-022-00-9 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 215-535-7 |
| **CAS** | 1330-20-7 |
| **content %** | 1-<10 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | Flam. Liq. 3, H226<br>Acute Tox. 4, H312<br>Acute Tox. 4, H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335<br>STOT RE 2, H373<br>Asp. Tox. 1, H304 |

| **Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics** | |
|---|---|
| **Registration number (REACH)** | 01-2119457273-39-XXXX |
| **Index** | --- |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 918-481-9 |
| **CAS** | (64742-48-9) |
| **content %** | 1-10 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | EUH066<br>Asp. Tox. 1, H304 |

| **2-methoxy-1-methylethyl acetate** | **Substance for which an EU exposure limit value applies.** |
|---|---|
| **Registration number (REACH)** | 01-2119475791-29-XXXX |
| **Index** | 607-195-00-7 |
| **EINECS, ELINCS, NLP, REACH-IT List-No.** | 203-603-9 |
| **CAS** | 108-65-6 |
| **content %** | 1-5 |
| **Classification according to Regulation (EC) 1272/2008 (CLP), M-factors** | Flam. Liq. 3, H226 |

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.
If, for example, the note P is applied for a hydrocarbon then this has already been taken into account for the classification named here.
Quote: "Note P - The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7)."
Article 4 of the regulation (EC) no. 1272/2008 (CLP regulation) was also observed and taken into account for the classification named here.

## 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.
If the person is unconscious, place in a stable side position and consult a doctor.

### 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
Call doctor immediately - have Data Sheet available.
Do not induce vomiting.

### 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.
Coughing
Headaches
Effects/damages the central nervous system
Dermatitis (skin inflammation)
Other dangerous properties cannot be ruled out.
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
Foam
Water jet spray
CO2
Extinction powder

### 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:
Zinc oxide
Oxides of carbon
Toxic gases
Danger of bursting (explosion) when heated
Explosive vapour/air or gas/air mixtures.

### 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.
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 inhalation, and 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.

### 6.3 Methods and material for containment and cleaning up
If spray or gas escapes, ensure ample fresh air is available.
Without adequate ventilation, formation of explosive mixtures may be possible.
Active substance:
Soak up with absorbent material (e.g. universal binding agent) and dispose of according to Section 13.
Do not wash away with water or watery cleaning agents.

### 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.
Room ventilation also at ground level.
Avoid inhalation of the vapours.
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.
Do not store with oxidizing agents.
Observe special regulations for aerosols!
Observe special storage conditions.
Keep protected from direct sunlight and temperatures over 50°C.
Store in a well ventilated place.

### 7.3 Specific end use(s)
No information available at present.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

| GB **Chemical Name** | Ethyl acetate | |
|---|---|---|
| WEL-TWA: 200 ppm (734 mg/m3) (WEL, EU) | WEL-STEL: 400 ppm (1468 mg/m3) (WEL, EU) | --- |
| Monitoring procedures: | - Draeger - Ethyl Acetate 200/a (CH 20 201)<br>- Compur - KITA-111 SA (549 160)<br>- Compur - KITA-111 U(C) (549 178)<br>- DFG Meth. Nr. 1 (D) (Loesungsmittelgemische 2), DFG (E) (Solvent mixtures 2) - 1993, 2002<br>- DFG Meth. Nr. 2 (D) (Loesungsmittelgemische 3), DFG (E) (Solvent mixtures 3) - 2014, 2002<br>- DFG Meth. Nr. 6 (D) (Loesungsmittelgemische 4), DFG (E) (Solvent mixtures 4) - 2014, 2002 | |

| | |
|---|---|
| | - NIOSH 1457 (ETHYL ACETATE) - 1994<br>- NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996 |
| BMGV: --- | Other information: --- |

| GB | Chemical Name | Acetone | |
|---|---|---|---|
| WEL-TWA: 500 ppm (1210 mg/m3) (WEL, EU) | WEL-STEL: 1500 ppm (3620 mg/m3) (WEL) | --- | |
| Monitoring procedures: | - Draeger - Acetone 100/b (CH 22 901)<br>- Draeger - Acetone 40/a (5) (81 03 381)<br>- Compur - KITA-102 SA (548 534)<br>- Compur - KITA-102 SC (548 550)<br>- Compur - KITA-102 SD (551 109)<br>INSHT MTA/MA-031/A96 (Determination of ketones (acetone, methyl ethyl ketone, methyl isobutyl ketone) in air - Charcoal tube method / Gas chromatography) - 1996 -<br>- EU project BC/CEN/ENTR/000/2002-16 card 67-1 (2004)<br>MDHS 72 (Volatile organic compounds in air – Laboratory method using pumped solid<br>- sorbent tubes, thermal desorption and gas chromatography) - 1993<br>- NIOSH 1300 (KETONES I) - 1994<br>- NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996<br>- NIOSH 2555 (KETONES I) - 2003<br>NIOSH 3800 (ORGANIC AND INORGANIC GASES BY EXTRACTIVE FTIR<br>- SPECTROMETRY) - 2016<br>- OSHA 69 (Acetone) - 1988 | |
| BMGV: --- | Other information: --- | | |

| GB | Chemical Name | Xylene | |
|---|---|---|---|
| WEL-TWA: 220 mg/m3 (50 ppm) (WEL), 50 ppm (221 mg/m3) (EU) | WEL-STEL: 100 ppm (441 mg/m3 (WEL), 100 ppm (442 mg/m3) (EU) | --- | |
| Monitoring procedures: | - Draeger - Xylene 10/a (67 33 161)<br>- Compur - KITA-143 SA (550 325)<br>- Compur - KITA-143 SB (505 998)<br>INSHT MTA/MA-030/A92 (Determination of aromatic hydrocarbons (benzene, toluene, ethylbenzene, p-xylene, 1,2,4-trimethylbenzene) in air - Charcoal tube method / Gas<br>- chromatography) - 1992 - EU project BC/CEN/ENTR/000/2002-16 card 47-1 (2004)<br>- NIOSH 1501 (HYDROCARBONS, AROMATIC) - 2003<br>- NIOSH 2549 (VOLATILE ORGANIC COMPOUNDS (SCREENING)) - 1996<br>- OSHA 1002 (Xylenes (o-, m-, p-isomers) Ethylbenzene) - 1999 | |
| BMGV: 650 mmol methyl hippuric acid/mol creatinine in urine, post shift (Xylene, o-, m-, p- or mixed isomers) (BMGV) | Other information: Sk (WEL) | | |

| GB | Chemical Name | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | |
|---|---|---|---|
| WEL-TWA: 800 mg/m3 | WEL-STEL: --- | --- | |
| Monitoring procedures: | - Draeger - Hydrocarbons 0,1%/c (81 03 571)<br>- Draeger - Hydrocarbons 2/a (81 03 581)<br>- Compur - KITA-187 S (551 174) | | |
| BMGV: --- | Other information: (OEL acc. to RCP-method, paragraphs 84-87, EH40) | | |

| GB | Chemical Name | 2-methoxy-1-methylethyl acetate | |
|---|---|---|---|
| WEL-TWA: 50 ppm (274 mg/m3) (WEL), 50 ppm (275 mg/m3) (EU) | WEL-STEL: 100 ppm (548 mg/m3) (WEL), 100 ppm (550 mg/m3) (EU) | --- | |
| Monitoring procedures: | INSHT MTA/MA-024/A92 (Determination of esters II (1-methoxy-2-propyl acetate, 2-ethoxyethyl acetate) in air - Charcoal tube method / Gas chromatography) - 1992 - EU<br>- project BC/CEN/ENTR/000/2002-16 card 15-1 (2004)<br>- NIOSH 2554 (GLYCOL ETHERS) - 2003<br>- OSHA 99 (Propylene Glycol Monomethyl Ethers/Acetates) - 1993 | | |
| BMGV: --- | Other information: Sk (WEL) | | |

| GB | Chemical Name | Butane | |
|---|---|---|---|
| WEL-TWA: 600 ppm (1450 mg/m3) | WEL-STEL: 750 ppm (1810 mg/m3) | --- | |
| Monitoring procedures: | - Compur - KITA-221 SA (549 459)<br>- OSHA PV2010 (n-Butane) - 1993 | | |
| BMGV: --- | Other information: --- | | |

| GB | Chemical Name | Propane | |
|---|---|---|---|
| WEL-TWA: 1000 ppm (ACGIH) | WEL-STEL: --- | --- | |
| Monitoring procedures: | - Compur - KITA-125 SA (549 954)<br>- OSHA PV2077 (Propane) - 1990 | | |

| | |
|---|---|
| BMGV: --- | Other information: --- |

| GB Chemical Name | Aluminium powder (stabilised) | |
|---|---|---|
| WEL-TWA: 10 mg/m3 (total inh. dust), 4 mg/m3 (resp. dust) | WEL-STEL: --- | --- |
| Monitoring procedures: --- | | |
| BMGV: --- | Other information: --- | |

| GB Chemical Name | Isobutane | |
|---|---|---|
| WEL-TWA: 1000 ppm (EX) (ACGIH) | WEL-STEL: --- | --- |
| Monitoring procedures: - Compur - KITA-113 SB(C) (549 368) | | |
| BMGV: --- | Other information: --- | |

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

**Zinc powder - zinc dust (stabilized)**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| | Environment - freshwater | | PNEC | 20,6 | µg/l | |
| | Environment - marine | | PNEC | 6,1 | µg/l | |
| | Environment - sewage treatment plant | | PNEC | 52 | µg/l | |
| | Environment - sediment, freshwater | | PNEC | 117,8 | mg/kg dw | |
| | Environment - sediment, marine | | PNEC | 56,5 | mg/kg | |
| | Environment - soil | | PNEC | 35,6 | mg/kg | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 0,83 | mg/kg bw/d | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 83 | mg/kg | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 2,5 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 5 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 83 | mg/kg | |

**Ethyl acetate**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| | Environment - freshwater | | PNEC | 0,24 | mg/l | |
| | Environment - marine | | PNEC | 0,024 | mg/l | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 1,65 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 1,15 | mg/kg | |
| | Environment - sediment, marine | | PNEC | 0,115 | mg/kg | |
| | Environment - soil | | PNEC | 0,148 | mg/kg | |
| | Environment - sewage treatment plant | | PNEC | 650 | mg/l | |
| | Environment - oral (animal feed) | | PNEC | 200 | mg/kg | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 4,5 | mg/kg | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 37 | mg/kg | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 367 | mg/m3 | |
| Consumer | Human - inhalation | Long term, local effects | DNEL | 367 | mg/m3 | |
| Consumer | Human - inhalation | Short term, systemic effects | DNEL | 734 | mg/m3 | |
| Consumer | Human - inhalation | Short term, local effects | DNEL | 734 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 63 | mg/kg | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 734 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 734 | mg/m3 | |
| Workers / employees | Human - inhalation | Short term, systemic effects | DNEL | 1468 | mg/m3 | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 1468 | mg/m3 | |

**Acetone**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| | Environment - marine | | PNEC | 1,06 | mg/l | Assesment factor 500 |
| | Environment - freshwater | | PNEC | 10,6 | mg/l | Assesment factor 50 |
| | Environment - sediment, freshwater | | PNEC | 30,4 | mg/kg dw | |
| | Environment - sediment, marine | | PNEC | 3,04 | mg/kg dw | |
| | Environment - soil | | PNEC | 29,5 | mg/kg dw | |
| | Environment - sewage treatment plant | | PNEC | 19,5 | mg/l | |
| | Environment - sporadic (intermittent) release | | PNEC | 21 | mg/l | Assesment factor 100 |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 62 | mg/kg bw/day | Overall assesment factor 2 |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 62 | mg/kg bw/day | Overall assesment factor 20 |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 200 | mg/m3 | Overall assesment factor 5 |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 186 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 2420 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 1210 | mg/m3 | |

**Xylene**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| | Environment - periodic release | | PNEC | 0,327 | mg/l | |
| | Environment - sewage treatment plant | | PNEC | 6,58 | mg/l | |
| | Environment - freshwater | | PNEC | 0,327 | mg/l | |
| | Environment - marine | | PNEC | 0,327 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 12,46 | mg/kg dw | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Environment - sediment, marine | | PNEC | 12,46 | mg/kg dw | |
| | Environment - soil | | PNEC | 2,31 | mg/kg dw | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 0,327 | mg/l | |
| Consumer | Human - inhalation | Short term, local effects | DNEL | 174 | mg/m3 | |
| Consumer | Human - inhalation | Short term, systemic effects | DNEL | 174 | mg/m3 | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 14,8 | mg/m3 | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 108 | mg/kg bw/day | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 1,6 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, local effects | DNEL | 65,3 | mg/m3 | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 289 | mg/m3 | |
| Workers / employees | Human - inhalation | Short term, systemic effects | DNEL | 289 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 77 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 180 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 221 | mg/m3 | |

**Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| Consumer | Human - oral | Long term, systemic effects | DNEL | 300 | mg/kg | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 300 | mg/kg | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 900 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 300 | mg/kg | |

**2-methoxy-1-methylethyl acetate**

| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
|---|---|---|---|---|---|---|
| | Environment - freshwater | | PNEC | 0,635 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 3,29 | mg/kg dw | |
| | Environment - sediment, marine | | PNEC | 0,329 | mg/kg dw | |
| | Environment - soil | | PNEC | 0,29 | mg/kg dw | |
| | Environment - sewage treatment plant | | PNEC | 100 | mg/l | |
| | Environment - marine | | PNEC | 0,0635 | mg/l | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 6,35 | mg/l | |
| Consumer | Human - oral | Short term, systemic effects | DNEL | 500 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 33 | mg/m3 | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 320 | mg/kg bw/day | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Consumer | Human - oral | Long term, systemic effects | DNEL | 36 | mg/kg bw/day | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 796 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 275 | mg/m3 | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 550 | mg/m3 | |

| **Aluminium powder (stabilised)** | | | | | | |
|---|---|---|---|---|---|---|
| **Area of application** | **Exposure route / Environmental compartment** | **Effect on health** | **Descriptor** | **Value** | **Unit** | **Note** |
| | Environment - freshwater | | PNEC | 0,0749 | mg/l | |
| | Environment - sewage treatment plant | | PNEC | 20 | mg/l | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 3,95 | mg/kg | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 3,72 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 3,72 | mg/m3 | |

GB WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
(8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 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 (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).
(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/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. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 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:
Solvent resistant protective gloves (EN ISO 374).
Recommended
Protective nitrile gloves (EN ISO 374).
With short-term contact:
Protective gloves in butyl rubber (EN ISO 374).

Minimum layer thickness in mm:
0,7
Permeation time (penetration time) in minutes:
max. 15
Protective hand cream recommended.
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.

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 A P2 (EN 14387), code colour brown, white
At high concentrations:
Respiratory protection appliance (insulation device) (e.g. EN 137 or EN 138)
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. |
| Colour: | Silver |
| Odour: | Characteristic |
| Melting point/freezing point: | There is no information available on this parameter. |
| Boiling point or initial boiling point and boiling range: | -44 °C |
| Flammability: | Does not apply to aerosols. |
| Lower explosion limit: | 1,5 Vol-% |
| Upper explosion limit: | 11,5 Vol-% |
| Flash point: | Does not apply to aerosols. |
| Auto-ignition temperature: | 365 °C |
| 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: | Not miscible |
| Partition coefficient n-octanol/water (log value): | Does not apply to mixtures. |
| Vapour pressure: | 3600 hPa (20°C) |
| Density and/or relative density: | 0,79 g/cm3 (20°C) |
| Relative vapour density: | Does not apply to aerosols. |
| Particle characteristics: | Does not apply to aerosols. |

### 9.2 Other information

| | |
|---|---|
| Explosives: | Possible build up of explosive/highly flammable vapour/air mixture. Product is not explosive. |
| Oxidising liquids: | No |
| Evaporation rate: | n.a. |
| Solvents content: | 77,7 % (Organic solvents ) |

## 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
See also section 7.
Heating, open flame, ignition sources
Pressure increase will result in danger of bursting.
## 10.5 Incompatible materials
See also section 7.
Avoid contact with oxidizing agents.
Avoid contact with strong alkalis.
Avoid contact with strong acids.
## 10.6 Hazardous decomposition products
See also section 5.2
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).

| **Zink-Alu Spray** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | | | | | | n.d.a. |
| Acute toxicity, by dermal route: | ATE | >2000 | mg/kg | | | calculated value |
| Acute toxicity, by inhalation: | ATE | >20 | mg/l/4h | | | calculated value, Vapours |
| Acute toxicity, by inhalation: | ATE | >5 | mg/l/4h | | | calculated value, Aerosol |
| 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. |

| **Zinc powder - zinc dust (stabilized)** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | LD50 | >2000 | mg/kg | Rat | | |
| Acute toxicity, by inhalation: | LC50 | >5410 | mg/m3/4h | Rat | | |
| Acute toxicity, by inhalation: | LC50 | 5,41 | mg/l/4h | Rat | | Dusts or mist |

| | | | | | | |
|---|---|---|---|---|---|---|
| Symptoms: | | | | | | respiratory distress, chest pain (thorax pain), fever, joint pain, heart/circulatory disorders, coughing, metal fume fever, muscle pains, mucous membrane irritation, chills, nausea and vomiting. |

**Ethyl acetate**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by oral route: | LD50 | 4934 | mg/kg | Rabbit | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >20000 | mg/kg | Rabbit | | |
| Acute toxicity, by inhalation: | LC0 | 29,3 | mg/l/4h | Rat | | Vapours |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant, Repeated exposure may cause skin dryness or cracking. |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Eye Irrit. 2 |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact) |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mammalian | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | Mammalian | OECD 474 (Mammalian Erythrocyte Micronucleus Test) | Negative |
| Carcinogenicity: | | | | | | Negative |
| Reproductive toxicity: | | | | | | Negative |
| Aspiration hazard: | | | | | | No |

| | | | | | | |
|---|---|---|---|---|---|---|
| Symptoms: | | | | | | lack of appetite, breathing difficulties, drowsiness, unconsciousness, drop in blood pressure, cornea opacity, coughing, headaches, gastrointestinal disturbances, intoxication, drowsiness, mucous membrane irritation, dizziness, salivation, nausea and vomiting., fatigue |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | NOAEL | 900 | mg/kg bw/d | Rat | Regulation (EC) 440/2008 B.26 (SUB-CHRONIC ORAL TOXICITY TEST REPEATED DOSE 90 - DAY (RODENTS)) | |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 0,002 | mg/kg | Rat | Regulation (EC) 440/2008 B.29 (SUB-CHRONIC INHALATION TOXICITY STUDY 90-DAY REPEATED (RODENTS)) | |

**Acetone**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by oral route: | LD50 | 5800 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >15800 | mg/kg | Rat | | |
| Acute toxicity, by inhalation: | LC50 | 76 | mg/l/4h | Rat | | |
| Skin corrosion/irritation: | | | | Guinea pig | | Not irritant, Repeated exposure may cause skin dryness or cracking. |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Eye Irrit. 2 |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | Not sensitizising |
| Germ cell mutagenicity: | | | | Mouse | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mammalian | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Reproductive toxicity (Developmental toxicity): | | | | Rat | OECD 414 (Prenatal Developmental Toxicity Study) | Negative |

| | | | | | | |
|---|---|---|---|---|---|---|
| Symptoms: | | | | | | unconsciousness, vomiting, headaches, gastrointestinal disturbances, fatigue, mucous membrane irritation, dizziness, nausea, drowsiness |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | NOAEL | 900 | mg/kg bw/d | Rat | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | |

**Xylene**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by oral route: | LD50 | 3523 | mg/kg | Rat | Regulation (EC) 440/2008 B.1 (ACUTE ORAL TOXICITY) | |
| Acute toxicity, by dermal route: | LD50 | 12126 | mg/kg | Rabbit | | Does not conform with EU classification. |
| Acute toxicity, by inhalation: | LC50 | 29,09 | mg/l/4h | Rat | Regulation (EC) 440/2008 B.2 (ACUTE TOXICITY (INHALATION)) | Vapours, Does not conform with EU classification. |
| Skin corrosion/irritation: | | | | Rabbit | (Draize-Test) | Irritant |
| Serious eye damage/irritation: | | | | Rabbit | | Irritant |
| Respiratory or skin sensitisation: | | | | Mouse | OECD 429 (Skin Sensitisation - Local Lymph Node Assay) | No (skin contact) |
| Carcinogenicity: | | | | Mouse | Regulation (EC) 440/2008 B.32 (CARCINOGENICITY TEST) | Negative |
| Symptoms: | | | | | | breathing difficulties, drying of the skin., drowsiness, unconsciousness, burning of the membranes of the nose and throat, skin afflictions, heart/circulatory disorders, coughing, headaches, drowsiness, dizziness, nausea and vomiting., lack of appetite |

**Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rat | OECD 402 (Acute Dermal Toxicity) | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Acute toxicity, by inhalation: | LC50 | >5000 | mg/m3/8h | Rat | OECD 403 (Acute Inhalation Toxicity) | Vapours |
| Acute toxicity, by inhalation: | LC50 | >5 | mg/m3/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | Vapours, Analogous conclusion |
| Skin corrosion/irritation: | | | | | | Repeated exposure may cause skin dryness or cracking., Product removes fat. |
| Skin corrosion/irritation: | | | | | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant, Analogous conclusion |
| Serious eye damage/irritation: | | | | | OECD 405 (Acute Eye Irritation/Corrosion) | Not irritant |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact) |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mouse | OECD 474 (Mammalian Erythrocyte Micronucleus Test) | Negative, Analogous conclusion |
| Carcinogenicity: | | | | | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Negative, Analogous conclusion |
| Reproductive toxicity: | | | | | OECD 421 (Reproduction/Developmental Toxicity Screening Test) | Negative, Analogous conclusion |
| Reproductive toxicity: | NOAEC | >= 5220 | mg/m3 | Rat | OECD 414 (Prenatal Developmental Toxicity Study) | Negative, Analogous conclusioninhalation |
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | | | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | No indications of such an effect., Analogous conclusion |
| Aspiration hazard: | | | | | | Yes |
| Symptoms: | | | | | | unconsciousness, headaches, dizziness, Dermatitis (skin inflammation), Reddening, drying of the skin., mucous membrane irritation, nausea and vomiting., diarrhoea, lower abdominal pain |

**2-methoxy-1-methylethyl acetate**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rabbit | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rat | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | 35,7 | mg/l/4h | Rat | | Vapours |
| Acute toxicity, by inhalation: | LC50 | >23,8 | mg/l/6h | Rat | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant |
| Serious eye damage/irritation: | | | | Rabbit | | Mild irritant |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact) |
| Germ cell mutagenicity: | | | | | OECD 471 (Bacterial Reverse Mutation Test) | No indications of such an effect. |
| Symptoms: | | | | | | respiratory distress, drowsiness, unconsciousness, vomiting, headaches, mucous membrane irritation, dizziness, nausea |

**Butane**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by inhalation: | LC50 | 658 | mg/l/4h | Rat | | |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | Human being | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | Rat | OECD 474 (Mammalian Erythrocyte Micronucleus Test) | Negative |
| Aspiration hazard: | | | | | | No |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEC | 21,394 | mg/l | Rat | OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test) | |
| Symptoms: | | | | | | ataxia, breathing difficulties, drowsiness, unconsciousness, frostbite, disturbed heart rhythm, headaches, cramps, intoxication, dizziness, nausea and vomiting. |

**Propane**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by inhalation: | LC50 | 658 | mg/l/4h | Rat | | |
| Acute toxicity, by inhalation: | LC50 | 260000 | ppmV/4h | Rat | | Gasses, Male, Analogous conclusion |
| Skin corrosion/irritation: | | | | | | Not irritant |
| Serious eye damage/irritation: | | | | | | Not irritant |

| | | | | | | |
|---|---|---|---|---|---|---|
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Reproductive toxicity (Developmental toxicity): | NOAEC | 21,641 | mg/l | | OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test) | |
| Aspiration hazard: | | | | | | No |
| Symptoms: | | | | | | breathing difficulties, unconsciousness, frostbite, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting. |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 7,214 | mg/l | Rat | OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test) | |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | LOAEL | 21,641 | mg/l | Rat | OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test) | |

**Aluminium powder (stabilised)**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by oral route: | LD50 | 15900 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | Analogous conclusion |
| Acute toxicity, by inhalation: | LC50 | >5 | mg/l/4h | Rat | | Dust, Mist |
| Skin corrosion/irritation: | | | | | | Not irritant |
| Serious eye damage/irritation: | | | | | | Not irritant |
| Respiratory or skin sensitisation: | | | | | | No (skin contact) |
| Symptoms: | | | | | | mucous membrane irritation |

**Isobutane**

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|
| Acute toxicity, by inhalation: | LC50 | 658 | mg/l/4h | Rat | | |
| Acute toxicity, by inhalation: | LC50 | 260000 | ppmV/4h | Rat | | Gasses, Male |
| Serious eye damage/irritation: | | | | Rabbit | | Not irritant |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Aspiration hazard: | | | | | | No |
| Symptoms: | | | | | | unconsciousness, frostbite, headaches, cramps, dizziness, nausea and vomiting. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 21,394 | mg/l | Rat | OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test) | |

## 11.2. Information on other hazards

| Zink-Alu Spray | | | | | | |
|---|---|---|---|---|---|---|
| **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. |

# SECTION 12: Ecological information

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

| Zink-Alu Spray | | | | | | | |
|---|---|---|---|---|---|---|---|
| **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: | | | | | | | According to the recipe, contains no AOX. |
| Other information: | | | | | | | DOC-elimination degree(complexing organic substance)>= 80%/28d: n.a. |

| Zinc powder - zinc dust (stabilized) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | LC50 | 96h | 0,238-0,56 | mg/l | Oncorhynchus mykiss | | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 2,8 | mg/l | Daphnia magna | | |

| Ethyl acetate | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity / effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| 12.1. Toxicity to fish: | NOEC/NOEL | 32d | <9,65 | mg/l | Pimephales promelas | | |
| 12.1. Toxicity to fish: | LC50 | 96h | 230 | mg/l | Pimephales promelas | | |
| 12.1. Toxicity to fish: | LC50 | 48h | 333 | mg/l | Leuciscus idus | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.1. Toxicity to daphnia: | EC50 | 48h | 610 | mg/l | Daphnia magna | DIN 38412 T.11 | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 21d | 2,4 | mg/l | Daphnia magna | OECD 211 (Daphnia magna Reproduction Test) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 165 | mg/l | | | Daphnia cucullata |
| 12.1. Toxicity to algae: | EC50 | 48h | 5600 | mg/l | Desmodesmus subspicatus | DIN 38412 T.9 | |
| 12.1. Toxicity to algae: | NOEC/NOEL | 96h | 2000 | mg/l | Scenedesmus subspicatus | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.1. Toxicity to algae: | EC50 | 96h | >2000 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.1. Toxicity to algae: | NOEC/NOEL | 72h | >100 | mg/l | Desmodesmus subspicatus | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.1. Toxicity to algae: | EC50 | 48h | 3300 | mg/l | Scenedesmus subspicatus | | |
| 12.2. Persistence and degradability: | | 20d | 79 | % | | OECD 301 D (Ready Biodegradability - Closed Bottle Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | BCF | 72h | 30 | | | | (Fish) |
| 12.3. Bioaccumulative potential: | Log Kow | | 0,68 | | | OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method) | Bioaccumulation is unlikely (LogPow < 1).25 °C |
| 12.4. Mobility in soil: | H (Henry) | | 0,00012 | atm*m3/mol | | | |
| 12.4. Mobility in soil: | Koc | | 3 | | | | |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Toxicity to bacteria: | EC10 | 16h | 2900 | mg/l | Escherichia coli | | |
| Toxicity to bacteria: | EC50 | 15min | 5870 | mg/l | Photobacterium phosphoreum | | |
| Toxicity to bacteria: | EC10 | 18h | 2900 | mg/l | Pseudomonas putida | DIN 38412 T.8 | |

**Acetone**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| Other organisms: | EC5 | 72h | 28 | mg/l | Entosiphon sulcatum | | |
| 12.1. Toxicity to fish: | EC50 | 96h | 8300 | mg/l | Lepomis macrochirus | | |
| 12.1. Toxicity to fish: | LC50 | 96h | 8300 | mg/l | Lepomis macrochirus | | |
| 12.1. Toxicity to fish: | LC50 | 96h | 5540 | mg/l | Oncorhynchus mykiss | | |
| 12.1. Toxicity to fish: | LC50 | 96h | 7500 | mg/l | Leuciscus idus | | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 6100-12700 | mg/l | Daphnia magna | | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 8800 | mg/l | Daphnia pulex | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 28d | 2212 | mg/l | Daphnia pulex | OECD 211 (Daphnia magna Reproduction Test) | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.1. Toxicity to algae: | NOEC/NOEL | 8d | 530 | mg/l | | DIN 38412 T.9 | Test organism: M. aeruginosa |
| 12.1. Toxicity to algae: | EC50 | 48h | 4740 | mg/l | Pseudokirchneriella subcapitata | | |
| 12.1. Toxicity to algae: | NOEC/NOEL | 48h | 3400 | mg/l | Pseudokirchneriella subcapitata | | |
| 12.2. Persistence and degradability: | | 28d | 91 | % | | OECD 301 A (Ready Biodegradability - DOC Die-Away Test) | Readily biodegradable |
| 12.2. Persistence and degradability: | | 28d | 91 | % | | OECD 301 B (Ready Biodegradability - Co2 Evolution Test) | Readily biodegradable |
| 12.2. Persistence and degradability: | | 30d | 81-92 | % | | Regulation (EC) 440/2008 C.4-E (DETERMINATION OF 'READY' BIODEGRADABILITY - CLOSED BOTTLE TEST) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | -0,24 | | | OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method) | |
| 12.3. Bioaccumulative potential: | BCF | | 0,19 | | | | Low |
| 12.4. Mobility in soil: | | | | | | | No adsorption in soil. |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Toxicity to bacteria: | EC10 | 30min | 1000 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | |
| Toxicity to bacteria: | BOD/COD | 16h | 1700 | mg/l | Pseudomonas putida | | |
| Other information: | BOD5 | | 1760-1900 | mg/g | | | |
| Other information: | AOX | | 0 | % | | | |
| Other information: | COD | | 2070 | mg/g | | | |

**Xylene**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| 12.4. Mobility in soil: | Log Koc | | 2,73 | | | | |
| 12.2. Persistence and degradability: | | 28d | 98 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | BCF | | >5,5 - 25,9 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.3. Bioaccumulative potential: | Log Pow | | 2,77-3,2 | | | | A notable biological accumulation potential is not to be expected (LogPow 1-3). |
| 12.4. Mobility in soil: | H (Henry) | | 623-665 | Pa*m3/mol | | | |

**Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| 12.1. Toxicity to fish: | LC50 | 96h | >1000 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to fish: | NOELR | 28d | 0,10 | mg/l | Oncorhynchus mykiss | QSAR | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | >1000 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOELR | 21d | 0,18 | mg/l | Daphnia magna | QSAR | |
| 12.1. Toxicity to algae: | ErL50 | 72h | >1000 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.1. Toxicity to algae: | NOELR | 72h | 1000 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 80 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | 5,5-7,2 | | | | |
| 12.4. Mobility in soil: | Log Koc | | >3 | | | | |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| 12.7. Other adverse effects: | | | | | | | Product floats on the water surface. |
| Water solubility: | | | ~10 | mg/l | | | Slight |

**2-methoxy-1-methylethyl acetate**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| 12.3. Bioaccumulative potential: | Log Pow | | 1,2 | | | OECD 117 (Partition Coefficient (n-octanol/water) - HPLC method) | 20°C |
| 12.1. Toxicity to fish: | LC50 | 96h | 100-180 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | >500 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 21d | >100 | mg/l | Daphnia magna | OECD 211 (Daphnia magna Reproduction Test) | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.1. Toxicity to algae: | EC50 | 72h | >1000 | mg/l | Selenastrum capricornutum | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 90 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable |
| 12.4. Mobility in soil: | Koc | | 1,7 | | | | |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Toxicity to bacteria: | EC20 | 30min | >1000 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | |

**Butane**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| 12.1. Toxicity to fish: | LC50 | 96h | 24,11 | mg/l | | QSAR | |
| 12.1. Toxicity to daphnia: | LC50 | 48h | 14,22 | mg/l | | QSAR | |
| 12.3. Bioaccumulative potential: | Log Pow | | 2,98 | | | | A notable biological accumulation potential is not to be expected (LogPow 1-3). |
| 12.4. Mobility in soil: | | | | | | | Not to be expected |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |

**Propane**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| 12.3. Bioaccumulative potential: | Log Pow | | 2,28 | | | | A notable biological accumulation potential is not to be expected (LogPow 1-3). |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |

**Aluminium powder (stabilised)**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| 12.5. Results of PBT and vPvB assessment | | | | | | | Not relevant for inorganic substances. |

**Isobutane**

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|---|---|---|---|---|---|---|
| 12.3. Bioaccumulative potential: | | | | | | | A notable biological accumulation potential is not to be expected (LogPow 1-3). |
| 12.1. Toxicity to fish: | LC50 | 96h | 27,98 | mg/l | | | |
| 12.1. Toxicity to algae: | EC50 | 96h | 7,71 | mg/l | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.2. Persistence and degradability: | | | | | | | Readily biodegradable |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |

## 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
08 01 11 waste paint and varnish containing organic solvents or other 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.
15 01 04 metallic packaging
15 01 10 packaging containing residues of or contaminated by hazardous substances

## SECTION 14: Transport information

### General statements

14.1. UN number or ID number: 1950

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

14.2. UN proper shipping name:
UN 1950 AEROSOLS
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
Classification code: 5F
LQ: 1 L
14.5. Environmental hazards: environmentally hazardous
Tunnel restriction code: D


### Transport by sea (IMDG-code)

14.2. UN proper shipping name:
AEROSOLS (ZINC POWDER)
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
EmS: F-D, S-U
Marine Pollutant: Yes
14.5. Environmental hazards: environmentally hazardous


### Transport by air (IATA)

14.2. UN proper shipping name:
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)!
This product is regulated by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.
For exceptions see Regulation (EU) 2019/1148 and guidelines for the implementation of Regulation (EU) 2019/1148.
Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!
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 |
|---|---|---|---|
| E2 | | 200 | 500 |
| 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 2012/18/EU ("Seveso III"), Annex I, Part 2 - This product contains the substances listed below:

| Entry Nr | Dangerous substances | Notes to Annex I | Qualifying quantity (tonnes) for the application of - Lower-tier requirements | Qualifying quantity (tonnes) for the application of - Upper-tier requirements |
|---|---|---|---|---|
| 18 | Liquefied flammable gases, Category 1 or 2 (including LPG) and natural gas | 19 | 50 | 200 |

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): | 77,70 % |
| Directive 2004/42/CE (VOC): | |
| VOC EU limit value for this product is: | 840 g/l (B/e) |
| Maximum VOC content of this product is: | 647 g/l |

Observe incident regulations.

## 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

# SECTION 16: Other information

Revised sections: 8
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 |
|---|---|
| Eye Irrit. 2, H319 | Classification according to calculation procedure. |
| STOT SE 3, H336 | Classification according to calculation procedure. |
| Aquatic Chronic 2, H411 | 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 (specified in Section 2 and 3).
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.

Eye Irrit. — Eye irritation
STOT SE — Specific target organ toxicity - single exposure - narcotic effects
Aquatic Chronic — Hazardous to the aquatic environment - chronic
Aerosol — Aerosols
Aquatic Acute — Hazardous to the aquatic environment - acute
Flam. Liq. — Flammable liquid
Acute Tox. — Acute toxicity - dermal
Acute Tox. — Acute toxicity - inhalation
Skin Irrit. — Skin irritation
STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation
STOT RE — Specific target organ toxicity - repeated exposure
Asp. Tox. — Aspiration hazard

## 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
bw body weight
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
dw dry weight
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
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. 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
wwt wet weight

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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