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Revision date / version: 12.07.2019 / 0021
Replacing version dated / version: 22.02.2019 / 0020
Valid from: 12.07.2019
PDF print date: 12.07.2019
Zink-Alu Spray 400 mL
Art.: 1640

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

Relevant identified uses of the substance or mixture:

Paint

Sector of use [SU]:

SU 3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

SU21 - Consumer uses: Private households (=general public = consumers)

SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category [PC]:

PC 9a - Coatings and paints, thinners, paint removers

Process category [PROC]:

PROC 7 - Industrial spraying

PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC11 - Non industrial spraying

Article Categories [AC]:

AC99 - Not required.

Environmental Release Category [ERC]:

ERC 4 - Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC 8a - Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

ERC 8c - Widespread use leading to inclusion into/onto article (indoor)

ERC 8d - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

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LIQUI MOLY GmbH, Jerg-Wieland-Str. 4, 89081 Ulm-Lehr, Germany
Phone:(+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:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (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. |

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| | | |
|-----------------|---|---|
| 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.

Acetone

Ethyl acetate

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 %).

Hazardous to drinking water, on escape of even small quantities.

SECTION 3: Composition/information on ingredients

Aerosol

3.1 Substance

n.a.

3.2 Mixture

| | |
|--|--|
| Zinc powder - zinc dust (stabilized) | |
| Registration number (REACH) | --- |
| Index | 030-001-01-9 |
| EINECS, ELINCS, NLP | 231-175-3 |
| CAS | 7440-66-6 |
| content % | 10-<25 |
| Classification according to Regulation (EC) 1272/2008 (CLP) | Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) |

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| 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 | 205-500-4 |
| CAS | 141-78-6 |
| content % | 15-<20 |
| Classification according to Regulation (EC) 1272/2008 (CLP) | Flam. Liq. 2, H225 Eye Irrit. 2, H319 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 | 200-662-2 |
| CAS | 67-64-1 |
| content % | 1-<10 |
| Classification according to Regulation (EC) 1272/2008 (CLP) | Flam. Liq. 2, H225 Eye Irrit. 2, H319 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 | 215-535-7 |
| CAS | 1330-20-7 |
| content % | 1-<10 |
| Classification according to Regulation (EC) 1272/2008 (CLP) | Flam. Liq. 3, H226 Asp. Tox. 1, H304 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Acute Tox. 4, H332 STOT SE 3, H335 STOT RE 2, H373 |

| 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 | 203-603-9 |
| CAS | 108-65-6 |
| content % | 1-5 |
| Classification according to Regulation (EC) 1272/2008 (CLP) | 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.

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

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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

n.c.

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.

Dangerous vapours heavier than air.

5.3 Advice for firefighters

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

Remove possible causes of ignition - do not smoke.

Ensure sufficient supply of air.

Avoid inhalation, and contact with eyes or skin.

If applicable, caution - risk of slipping.

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.

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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

| Chemical Name | Ethyl acetate | Content %:15- <20 |
|--|---|----------------------|
| WEL-TWA: 200 ppm (734 mg/m ³) (WEL, EU) | WEL-STEL: 400 ppm (1468 mg/m ³) (WEL, EU) | --- |
| Monitoring procedures: | <ul style="list-style-type: none"> - Compur - KITA-111 SA (549 160) - Compur - KITA-111 U(C) (549 178) - Draeger - Ethyl Acetate 200/a (CH 20 201) - DFG (D) (Loesungsmittelgemische 2), DFG (E) (Solvent mixtures 2) - 1998, 2002 - DFG (D) (Loesungsmittelgemische 3), DFG (E) (Solvent mixtures 3) - 1998, 2002 - DFG (D) (Loesungsmittelgemische 4), DFG (E) (Solvent mixtures 4) - 1998, 2002 - DFG (D) (Loesungsmittelgemische 5), DFG (E) (Solvent mixtures 5) - 1998, 2002 | |
| BMGV: --- | Other information: --- | |
| Chemical Name | Acetone | Content %:1-<10 |
| WEL-TWA: 500 ppm (1210 mg/m ³) (WEL, EU) | WEL-STEL: 1500 ppm (3620 mg/m ³) (WEL) | --- |
| Monitoring procedures: | <ul style="list-style-type: none"> - Compur - KITA-102 SA (548 534) - Compur - KITA-102 SC (548 550) - Compur - KITA-102 SD (551 109) - Draeger - Acetone 40/a (5) (81 03 381) - Draeger - Acetone 100/b (CH 22 901) - MTA/MA-031/A96 (Determination of ketones (acetone, methyl ethyl ketone, methyl isobutyl ketone) in air - Charcoal tube method / Gas chromatography) - 1996 - EU project BC/CEN/ENTR/000/2002-16 card 67-1 (2004) | |

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|-----------|--|
| | MDHS 72 (Volatile organic compounds in air – Laboratory method using pumped solid sorbent tubes, thermal desorption and gas chromatography) - 1993 |
| BMGV: --- | Other information: --- |

| Chemical Name | Xylene | Content %:1-<10 |
|--|---|-----------------|
| WEL-TWA: 220 mg/m ³ (50 ppm) (WEL), 50 ppm (221 mg/m ³) (EU) | WEL-STEL: 100 ppm (441 mg/m ³) (WEL), 100 ppm (442 mg/m ³) (EU) | --- |
| Monitoring procedures: | <ul style="list-style-type: none"> - Compur - KITA-143 SA (550 325) - Compur - KITA-143 SB (505 998) - Draeger - Xylene 10/a (67 33 161) - MTA/MA-030/A92 (Determination of aromatic hydrocarbons (benzene, toluene, ethylbenzene, p-xylene, 1,2,4-trimethylbenzene) in air - Charcoal tube method / Gas chromatography) - 1992 - EU project BC/CEN/ENTR/000/2002-16 card 47-1 (2004) | |
| BMGV: 650 mmol methyl hippuric acid/mol creatinine in urine, post shift (Xylene, o-, m-, p- or mixed isomers) (BMGV) | Other information: Sk (WEL) | |

| Chemical Name | 2-methoxy-1-methylethyl acetate | Content %:1-5 |
|--|---|---------------|
| WEL-TWA: 50 ppm (274 mg/m ³) (WEL), 50 ppm (275 mg/m ³) (EU) | WEL-STEL: 100 ppm (548 mg/m ³) (WEL), 100 ppm (550 mg/m ³) (EU) | --- |
| Monitoring procedures: | <ul style="list-style-type: none"> - 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 project BC/CEN/ENTR/000/2002-16 card 15-1 (2004) | |
| BMGV: --- | Other information: Sk (WEL) | |

| Chemical Name | Butane | Content %: |
|--|--|------------|
| WEL-TWA: 600 ppm (1450 mg/m ³) | WEL-STEL: 750 ppm (1810 mg/m ³) | --- |
| Monitoring procedures: | <ul style="list-style-type: none"> - Compur - KITA-221 SA (549 459) | |
| BMGV: --- | Other information: --- | |

| Chemical Name | Propane | Content %: |
|---------------------------|--|------------|
| WEL-TWA: 1000 ppm (ACGIH) | WEL-STEL: --- | --- |
| Monitoring procedures: | <ul style="list-style-type: none"> - Compur - KITA-125 SA (549 954) | |
| BMGV: --- | Other information: --- | |

| Chemical Name | Aluminium powder (stabilised) | Content %: |
|---|-------------------------------|------------|
| WEL-TWA: 10 mg/m ³ (total inh. dust), 4 mg/m ³ (resp. dust) | WEL-STEL: --- | --- |
| Monitoring procedures: | --- | |
| BMGV: --- | Other information: --- | |

| 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 | 118 | mg/kg | |
| | 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/m ³ | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 5 | mg/m ³ | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 83 | mg/kg | |

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| Ethyl acetate | | | | | | |
|---------------------|--|------------------------------|------------|-------|-------------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - freshwater | | PNEC | 0,26 | mg/l | |
| | Environment - marine | | PNEC | 0,026 | mg/l | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 1,65 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 0,34 | mg/kg | |
| | Environment - sediment, marine | | PNEC | 0,125 | mg/kg | |
| | Environment - soil | | PNEC | 0,22 | 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/m ³ | |
| Consumer | Human - inhalation | Long term, local effects | DNEL | 367 | mg/m ³ | |
| Consumer | Human - inhalation | Short term, systemic effects | DNEL | 734 | mg/m ³ | |
| Consumer | Human - inhalation | Short term, local effects | DNEL | 734 | mg/m ³ | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 63 | mg/kg | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 734 | mg/m ³ | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 734 | mg/m ³ | |
| Workers / employees | Human - inhalation | Short term, systemic effects | DNEL | 1468 | mg/m ³ | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 1468 | mg/m ³ | |

| 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/l | |
| | Environment - sediment, marine | | PNEC | 3,04 | mg/l | |
| | 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 |
| | Environment - sewage treatment plant | | PNEC | 100 | mg/l | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 62 | mg/kg bw/day | Overall assesment factor 2 |

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|---------------------|--------------------|-----------------------------|------|------|--------------|-----------------------------|
| 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 | |
| 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 | |

| 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 | |
| | Environment - sediment, marine | | PNEC | 0,329 | mg/kg | |
| | Environment - soil | | PNEC | 0,29 | mg/kg | |

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|---------------------|--|-----------------------------|------|--------|-------------------|--|
| | 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 - inhalation | Long term, systemic effects | DNEL | 33 | mg/m ³ | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 54,8 | mg/kg | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 1,67 | mg/kg | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 153,5 | mg/kg | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 275 | mg/m ³ | |

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 (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). | 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.

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. BS EN 14042.

BS 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 374).

Recommended

Protective nitrile gloves (EN 374).

With short-term contact:

Protective gloves in butyl rubber (EN 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:

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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 |
| Odour threshold: | Not determined |
| pH-value: | n.a. |
| Melting point/freezing point: | Not determined |
| Initial boiling point and boiling range: | -44 °C |
| Flash point: | n.a. |
| Evaporation rate: | n.a. |
| Flammability (solid, gas): | Not determined |
| Lower explosive limit: | 1,5 Vol-% |
| Upper explosive limit: | 11,5 Vol-% |
| Vapour pressure: | 3600 hPa (20°C) |
| Vapour density (air = 1): | Not determined |
| Density: | 0,79 g/cm ³ (20°C) |
| Bulk density: | Not determined |
| Solubility(ies): | Not determined |
| Water solubility: | Not miscible |
| Partition coefficient (n-octanol/water): | Not determined |
| Auto-ignition temperature: | 365 °C (Ignition temperature) |
| Auto-ignition temperature: | No |
| Decomposition temperature: | Not determined |
| Viscosity: | Not determined |
| Explosive properties: | Possible build up of explosive/highly flammable vapour/air mixture. Product is not explosive. |
| Oxidising properties: | No |

9.2 Other information

| | |
|---------------------------|----------------------------|
| Miscibility: | Not determined |
| Fat solubility / solvent: | Not determined |
| Conductivity: | Not determined |
| Surface tension: | Not determined |
| Solvents content: | 77,7 % (Organic solvents) |

SECTION 10: Stability and reactivity

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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 toxicological effects

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

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| 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. |
| Other information: | | | | | | Classification according to calculation procedure. |

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/m ³ /4h | Rat | | |

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| | | | | | | |
|-----------|--|--|--|--|--|--|
| 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: | | 24 | h | Rabbit | | 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 |

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| | | | | | | |
|---|-------|-------|------------|-----|---|--|
| 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. |
| 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 | | Repeated exposure may cause skin dryness or cracking., Not irritant |
| 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 sensitizing |
| 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 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative |

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| | | | | | | |
|-----------|--|--|--|--|--|--|
| Symptoms: | | | | | | unconsciousness , vomiting, headaches, gastrointestinal disturbances, fatigue, mucous membrane irritation, dizziness, nausea, drowsiness |
|-----------|--|--|--|--|--|--|

| Xylene | | | | | | |
|---|----------|-------|---------|----------|-------------|---|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Acute toxicity, by oral route: | LD50 | 3523 | mg/kg | Rat | | |
| Acute toxicity, by dermal route: | LD50 | 12126 | mg/kg | Rabbit | | Does not conform with EU classification. |
| Acute toxicity, by inhalation: | LD50 | 27,6 | mg/l/4h | Rat | | Does not conform with EU classification., Vapours |
| Skin corrosion/irritation: | | | | | | Irritant |
| Serious eye damage/irritation: | | | | | | Irritant |
| Germ cell mutagenicity: | | | | | | Negative |
| Carcinogenicity: | | | | | | Negative |
| Reproductive toxicity: | | | | | | Negative |
| Aspiration hazard: | | | | | | Yes |
| Symptoms: | | | | | | breathing difficulties, headaches, dizziness, Lung damage |
| Specific target organ toxicity - single exposure (STOT-SE), inhalative: | | | | | | Irritation of the respiratory tract |

| 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 oral route: | LD50 | >8532 | mg/kg | Rat | | |
| Acute toxicity, by dermal route: | LD50 | >5000 | mg/kg | Rat | | |
| 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: | | | | | | Not sensitising |
| 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. |

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| | | | | | | |
|-----------|--|--|--|--|--|---|
| 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: | | | | | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Aspiration hazard: | | | | | | No |
| 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 | | |
| Skin corrosion/irritation: | | | | | | Not irritant |
| Serious eye damage/irritation: | | | | | | Not irritant |
| Germ cell mutagenicity: | | | | | 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. |

| Aluminium powder (stabilised) | | | | | | |
|--------------------------------|----------|-------|---------|----------|-------------|--------------|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Acute toxicity, by inhalation: | LC50 | >5 | mg/l/4h | | | Dust, Mist |
| Skin corrosion/irritation: | | | | | | Not irritant |
| Serious eye damage/irritation: | | | | | | Not irritant |

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| | | | | | | |
|------------------------------------|--|--|--|--|--|----------------------------|
| Respiratory or skin sensitisation: | | | | | | No (skin contact) |
| Symptoms: | | | | | | mucous membrane irritation |

SECTION 12: Ecological information

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

| Zink-Alu Spray 400 mL Art.: 1640 | | | | | | | |
|--|----------|------|-------|------|----------|-------------|--|
| 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. Other adverse effects: | | | | | | | n.d.a. |
| Other information: | | | | | | | According to the recipe, contains no AOX. |
| Other information: | | | | | | | DOC-elimination degree (complexing organic substance) \geq 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 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) | |

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|--|-----------|-------|---------|------------|----------------------------|---|---|
| 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 | | 0,6 | | | OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method) | Bioaccumulation is unlikely (LogPow < 1). |
| 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 | | |

Acetone

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|--|-----------|-------|------------|------|---------------------------------|--|-------------------------------------|
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 28d | 2212 | mg/l | Daphnia pulex | | |
| 12.2. Persistence and degradability: | | 28d | 91 | % | | OECD 301 A (Ready Biodegradability - DOC Die-Away Test) | Readily biodegradable |
| 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 algae: | EC50 | 48h | 4740 | mg/l | Pseudokirchneriella subcapitata | | |
| 12.1. Toxicity to algae: | NOEC/NOEL | 48h | 3400 | mg/l | Pseudokirchneriella subcapitata | | |
| 12.3. Bioaccumulative potential: | Log Pow | | -0,24 | | | | |
| 12.3. Bioaccumulative potential: | BCF | | 0,19 | | | | |
| 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: | BOD/COD | 16h | 1700 | mg/l | Pseudomonas putida | | |
| Toxicity to bacteria: | EC10 | 30min | 1000 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | |
| Other information: | BOD5 | | 1760-1900 | mg/g | | | |
| Other information: | COD | | 2100 | mg/g | | | |
| Other information: | AOX | | 0 | % | | | |

Xylene

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|--------------------------------------|-----------|------|-------|------------------------|----------|-------------|-----------------------|
| 12.2. Persistence and degradability: | | | | | | | Readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Kow | | 3,16 | | | | |
| 12.4. Mobility in soil: | H (Henry) | | 665 | Pa*m ³ /mol | | | |

| 2-methoxy-1-methylethyl acetate | | | | | | | |
|--|-----------|-------|----------|------|---------------------------|--|-------------------------------------|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.1. Toxicity to fish: | LC50 | 96h | 100-180 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 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 | | |
| 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: | | 10d | 83 | % | | 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). |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |

| Propane | | | | | | | |
|-------------------|----------|------|-------|------|----------|-------------|-------|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |

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|--|---------|--|------|--|--|--|---|
| 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 |

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: 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



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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. Transport in bulk according to Annex II of MARPOL and the IBC Code

Freight 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)!
 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): 643 g/l
 Directive 2010/75/EU (VOC): 77,73 %

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):

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| 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 based on test data. |
| Aerosol 1, H229 | Classification based on test data. |

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.

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

Asp. Tox. — Aspiration hazard

Acute Tox. — Acute toxicity - dermal

Skin Irrit. — Skin irritation

Acute Tox. — Acute toxicity - inhalation

STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation

STOT RE — Specific target organ toxicity - repeated exposure

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)

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)

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

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EC European Community

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ECHA European Chemicals Agency
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)
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
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
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
OECD Organisation for Economic Co-operation and Development
org. organic
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
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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