# ZG-90 SILVER

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 14/02/2025 Revision date: 31/01/2025 Supersedes version of: 27/08/2024 Version: 2.3

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

### 1.1. Product identifier

Product name : ZG-90 SILVER
UFI : A5NY-H8UD-N003-TWPD
Product code : BDS002318BU

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

**Relevant identified uses**

Main use category : Professional use

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

**Supplier**
CRC Industries Europe UK Limited
Wylds Road
Castlefield Industrial Estate
TA6 4DD Bridgwater Somerset
United Kingdom
T +44 1278 727200, F +44 1278 425644
hse.uk@crcind.com, www.crcind.com

**Only Representative**
CRC Industries Europe B.V.
Touwslagerstraat 1
9240 Zele
Belgium
T +32(0)52/45.60.11, F +32(0)52/45.00.34
hse@crcind.com, www.crcind.com

### 1.4. Emergency telephone number

Emergency number : +44 1278 727200
Office hours: 9-17h CET

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

| | |
|---|---|
| Flammable liquids, Category 2 | H225 |
| Serious eye damage/eye irritation, Category 2 | H319 |
| Specific target organ toxicity – Single exposure, Category 3, Narcosis | H336 |
| Hazardous to the aquatic environment – Chronic Hazard, Category 2 | H411 |

Full text of H- and EUH-statements: see section 16

**Adverse physicochemical, human health and environmental effects**

May cause drowsiness or dizziness. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

### 2.2. Label elements

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :

GHS02 GHS07 GHS09

Signal word (CLP) : Danger
Contains : n-butyl acetate;acetone; propan-2-one; propanone;1-methoxy-2-propanol; monopropylene glycol methyl ether;Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics;Hydrocarbons, C9, aromatics
Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H411 - Toxic to aquatic life with long lasting effects.

| | | |
|---|---|---|
| Precautionary statements (CLP) | : | P102 - Keep out of reach of children.<br>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>P233 - Keep container tightly closed.<br>P312 - Call a POISON CENTRE or doctor if you feel unwell.<br>P337+P313 - If eye irritation persists: Get medical advice/attention.<br>P403+P235 - Store in a well-ventilated place. Keep cool.<br>P405 - Store locked up.<br>P501 - Dispose of contents/container to a hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. |
| EUH-statements | : | EUH066 - Repeated exposure may cause skin dryness or cracking.<br>EUH208 - Contains 4-morpholinecarbaldehyde (4394-85-8). May produce an allergic reaction. |

### 2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---|---|
| n-butyl acetate<br>substance with national workplace exposure limit(s) (BE); substance with a Community workplace exposure limit | CAS-No.: 123-86-4<br>EC-No.: 204-658-1<br>EC Index-No.: 607-025-00-1<br>REACH-no: 01-2119485493-29 | 25 – 50 | Flam. Liq. 3, H226<br>STOT SE 3, H336<br>EUH066 |
| acetone; propan-2-one; propanone<br>substance with national workplace exposure limit(s) (BE); substance with a Community workplace exposure limit | CAS-No.: 67-64-1<br>EC-No.: 200-662-2<br>EC Index-No.: 606-001-00-8<br>REACH-no: 01-2119471330-49 | 10 – 25 | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>STOT SE 3, H336<br>EUH066 |
| zinc oxide<br>substance with national workplace exposure limit(s) (BE) | CAS-No.: 1314-13-2<br>EC-No.: 215-222-5<br>EC Index-No.: 030-013-00-7<br>REACH-no: 01-2119463881-32 | 5 – 10 | Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |
| 1-methoxy-2-propanol; monopropylene glycol methyl ether<br>substance with national workplace exposure limit(s) (BE); substance with a Community workplace exposure limit | CAS-No.: 107-98-2<br>EC-No.: 203-539-1<br>EC Index-No.: 603-064-00-3<br>REACH-no: 01-2119457435-35 | 5 – 10 | Flam. Liq. 3, H226<br>STOT SE 3, H336 |
| Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics | EC-No.: 919-857-5<br>REACH-no: 01-2119463258-33 | < 2,5 | Flam. Liq. 3, H226<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>EUH066 |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---|---|
| Hydrocarbons, C9, aromatics | CAS-No.: 128601-23-0<br>EC-No.: 918-668-5<br>REACH-no: 01-2119455851-35 | < 2,5 | Flam. Liq. 3, H226<br>STOT SE 3, H336<br>STOT SE 3, H335<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411 |
| aluminium powder (stabilised)<br>substance with national workplace exposure limit(s) (BE) | CAS-No.: 7429-90-5<br>EC-No.: 231-072-3<br>EC Index-No.: 013-002-00-1<br>REACH-no: 01-2119529243-45 | < 2,5 | Water-react. 2, H261<br>Flam. Sol. 1, H228 |
| 4-morpholinecarbaldehyde | CAS-No.: 4394-85-8<br>EC-No.: 224-518-3<br>REACH-no: 01-2119987993-12 | < 1 | Skin Sens. 1, H317 |

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If signs/symptoms develop, get medical attention.

First-aid measures after skin contact : Wash skin with plenty of water. Seek medical attention if irritation develops.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Seek medical attention if irritation develops.

First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects : May cause drowsiness or dizziness.

Symptoms/effects after skin contact : Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : Eye irritation.

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

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : During fire, gases hazardous to health may be formed.

### 5.3. Advice for firefighters

Firefighting instructions : Move containers from fire area if it can be done without personal risk. Use standard firefighting procedures and consider the hazards of other involved materials.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

**For non-emergency personnel**

Protective equipment : Wear appropriate protective equipment and clothing during clean-up.

Emergency procedures : Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

**For emergency responders**

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Evacuate unnecessary personnel. Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment. Avoid the spillage or runoff entering drains, sewers or watercourses.

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

For containment : Collect spillage.

Methods for cleaning up : For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Following product recovery, flush area with water. Take up small spills with dry chemical absorbent. Clean surface thoroughly to remove residual contamination.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For disposal of contaminated materials refer to section 13 : "Disposal considerations".

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes. Wear personal protective equipment. Avoid prolonged exposure. Handle in accordance with good industrial hygiene and safety procedures.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Keep container closed when not in use.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**National occupational exposure and biological limit values**

| **n-butyl acetate (123-86-4)** | |
|---|---|
| **EU - Indicative Occupational Exposure Limit (IOEL)** | |
| Local name | n-Butyl acetate |
| IOEL TWA | 241 mg/m³ |
| | 50 ppm |

| **n-butyl acetate (123-86-4)** | |
|---|---|
| IOEL STEL | 723 mg/m³ |
| | 150 ppm |
| Regulatory reference | COMMISSION DIRECTIVE (EU) 2019/1831 |
| **Belgium - Occupational Exposure Limits** | |
| Local name | Acétate de n-butyle # n-Butylacetaat |
| OEL TWA | 238 mg/m³ |
| | 50 ppm |
| OEL STEL | 712 mg/m³ |
| | 150 ppm |
| Regulatory reference | Koninklijk besluit/Arrêté royal 16/11/2023 |

| **acetone; propan-2-one; propanone (67-64-1)** | |
|---|---|
| **EU - Indicative Occupational Exposure Limit (IOEL)** | |
| Local name | Acetone |
| IOEL TWA | 1210 mg/m³ |
| | 500 ppm |
| Regulatory reference | COMMISSION DIRECTIVE 2000/39/EC |
| **Belgium - Occupational Exposure Limits** | |
| Local name | Acétone # Aceton |
| OEL TWA | 594 mg/m³ |
| | 246 ppm |
| OEL STEL | 1187 mg/m³ |
| | 492 ppm |
| Regulatory reference | Koninklijk besluit/Arrêté royal 16/11/2023 |

| **zinc oxide (1314-13-2)** | |
|---|---|
| **Belgium - Occupational Exposure Limits** | |
| Local name | Zinc (oxyde de) (fraction alvéolaire) # Zinkoxide (inadembare fractie) |
| OEL TWA | 2 mg/m³ |
| OEL STEL | 10 mg/m³ |
| Regulatory reference | Koninklijk besluit/Arrêté royal 16/11/2023 |

| **1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2)** | |
|---|---|
| **EU - Indicative Occupational Exposure Limit (IOEL)** | |
| Local name | 1-Methoxypropanol-2 |
| IOEL TWA | 375 mg/m³ |
| | 100 ppm |
| IOEL STEL | 568 mg/m³ |
| | 150 ppm |
| Remark | Skin |
| Regulatory reference | COMMISSION DIRECTIVE 2000/39/EC |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| **Belgium - Occupational Exposure Limits** | |
| Local name | 1-Méthoxy-2-propanol # 1-Methoxy-2-propanol |
| OEL TWA | 184 mg/m³ |
| | 50 ppm |
| OEL STEL | 369 mg/m³ |
| | 100 ppm |
| Remark | D: la mention “D” signifie que la résorption de l’agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l’exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l’agent dans l’air. # D: de vermelding “D” betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht. |
| Regulatory reference | Koninklijk besluit/Arrêté royal 16/11/2023 |

| aluminium powder (stabilised) (7429-90-5) | |
|---|---|
| **Belgium - Occupational Exposure Limits** | |
| Local name | Aluminium # Aluminium |
| OEL TWA | 2 mg/m³ (composés alkylés) (en Al) # Aluminiumalkylen (als Al)<br>1 mg/m³ (métal et composés insolubles, fraction alvéolaire) # (metaal en onoplosbare verbindingen, inadembare fractie) |
| Regulatory reference | Koninklijk besluit/Arrêté royal 16/11/2023 |

### DNEL and PNEC

| n-butyl acetate (123-86-4) | |
|---|---|
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 0,18 mg/l |
| PNEC aqua (marine water) | 0,018 mg/l |
| PNEC aqua (intermittent, freshwater) | 0,36 mg/l |
| **PNEC (Sediment)** | |
| PNEC sediment (freshwater) | 0,981 mg/kg dwt |
| PNEC sediment (marine water) | 0,0981 mg/kg dwt |
| **PNEC (Soil)** | |
| PNEC soil | 0,0903 mg/kg dwt |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 35,6 mg/l |

| acetone; propan-2-one; propanone (67-64-1) | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Acute - local effects, inhalation | 2420 mg/m³ |
| Long-term - systemic effects, dermal | 186 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 1210 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Long-term - systemic effects,oral | 62 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 200 mg/m³ |

| acetone; propan-2-one; propanone (67-64-1) | |
|---|---|
| Long-term - systemic effects, dermal | 62 mg/kg bodyweight/day |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 10,6 mg/l |
| PNEC aqua (marine water) | 1,06 mg/l |
| PNEC aqua (intermittent, freshwater) | 21 mg/l |
| **PNEC (Sediment)** | |
| PNEC sediment (freshwater) | 30,4 mg/kg dwt |
| PNEC sediment (marine water) | 3,04 mg/kg dwt |
| **PNEC (Soil)** | |
| PNEC soil | 29,5 mg/kg dwt |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 100 mg/l |

| zinc oxide (1314-13-2) | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Long-term - systemic effects, dermal | 83 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 5 mg/m³ |
| Long-term - local effects, inhalation | 0,5 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Long-term - systemic effects,oral | 0,83 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 2,5 mg/m³ |
| Long-term - systemic effects, dermal | 83 mg/kg bodyweight/day |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 20,6 µg/l |
| PNEC aqua (marine water) | 6,1 µg/l |
| **PNEC (Sediment)** | |
| PNEC sediment (freshwater) | 117,8 mg/kg dwt |
| PNEC sediment (marine water) | 56,5 mg/kg dwt |
| **PNEC (Soil)** | |
| PNEC soil | 35,6 mg/kg dwt |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 100 µg/l |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Acute - systemic effects, inhalation | 553,5 mg/m³ |
| Acute - local effects, inhalation | 553,5 mg/m³ |
| Long-term - systemic effects, dermal | 183 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 369 mg/m³ |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| **DNEL/DMEL (General population)** | |
| Long-term - systemic effects,oral | 33 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 43,9 mg/m³ |
| Long-term - systemic effects, dermal | 78 mg/kg bodyweight/day |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 10 mg/l |
| PNEC aqua (marine water) | 1 mg/l |
| PNEC aqua (intermittent, freshwater) | 100 mg/l |
| **PNEC (Sediment)** | |
| PNEC sediment (freshwater) | 52,3 mg/kg dwt |
| PNEC sediment (marine water) | 5,2 mg/kg dwt |
| **PNEC (Soil)** | |
| PNEC soil | 4,59 mg/kg dwt |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 100 mg/l |

| Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Long-term - systemic effects, dermal | 208 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 871 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Long-term - systemic effects,oral | 125 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 185 mg/m³ |
| Long-term - systemic effects, dermal | 125 mg/kg bodyweight/day |

| Hydrocarbons, C9, aromatics (128601-23-0) | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Long-term - systemic effects, dermal | 25 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 150 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Long-term - systemic effects,oral | 11 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 32 mg/m³ |
| Long-term - systemic effects, dermal | 11 mg/kg bodyweight/day |

| 4-morpholinecarbaldehyde (4394-85-8) | |
|---|---|
| **DNEL/DMEL (Workers)** | |
| Long-term - systemic effects, dermal | 11,7 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 50,3 mg/m³ |
| Long-term - local effects, inhalation | 13,3 mg/m³ |
| **DNEL/DMEL (General population)** | |
| Long-term - systemic effects,oral | 4,17 mg/kg bodyweight/day |

| 4-morpholinecarbaldehyde (4394-85-8) | |
|---|---|
| Long-term - systemic effects, inhalation | 8,93 mg/m³ |
| Long-term - systemic effects, dermal | 4,17 mg/kg bodyweight/day |
| Long-term - local effects, inhalation | 13,3 mg/m³ |
| **PNEC (Water)** | |
| PNEC aqua (freshwater) | 0,5 mg/l |
| PNEC aqua (marine water) | 0,05 mg/l |
| PNEC aqua (intermittent, freshwater) | 5 mg/l |
| **PNEC (Sediment)** | |
| PNEC sediment (freshwater) | 1,85 mg/kg dwt |
| PNEC sediment (marine water) | 0,185 mg/kg dwt |
| **PNEC (Soil)** | |
| PNEC soil | 0,0764 mg/kg dwt |
| **PNEC (STP)** | |
| PNEC sewage treatment plant | 2000 mg/l |

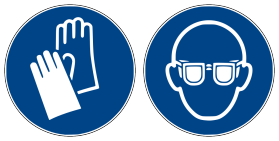
## 8.2. Exposure controls

### Appropriate engineering controls

**Appropriate engineering controls:**
Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

### Personal protection equipment

**Personal protective equipment symbol(s):**



### Eye and face protection

**Eye protection:**
Use eye protection according to EN 166. Safety glasses with side shields.

### Skin protection

**Skin and body protection:**
Wear suitable protective clothing

**Hand protection:**
Wear suitable gloves tested to EN374. The breakthrough time of the glove should be longer than the total duration of product use. If work lasts longer than the breakthrough time, gloves should be changed part-way through. Nitrile gloves are recommended.

### Respiratory protection

**Respiratory protection:**
In case of insufficient ventilation, wear suitable respiratory equipment. Approved organic vapour respirator. Filter type: A

### Thermal hazards

**Thermal hazard protection:**
Not expected to present a significant hazard under anticipated conditions of normal use. Wear appropriate thermal protective clothing, when necessary.

### Environmental exposure controls

**Environmental exposure controls:**
Avoid release to the environment. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Colour | : | Grey. |
| Odour | : | Characteristic. |
| Odour threshold | : | Not available |
| Melting point | : | No data available |
| Freezing point | : | Not available |
| Boiling point | : | ≥ 55 °C |
| Flammability | : | Highly flammable liquid and vapour. |
| Lower explosion limit | : | Not available |
| Upper explosion limit | : | Not available |
| Flash point | : | -18 °C |
| Auto-ignition temperature | : | > 200 |
| Decomposition temperature | : | Not available |
| pH | : | Not applicable |
| Viscosity, kinematic | : | Not available |
| Solubility | : | Insoluble in water. |
| Partition coefficient n-octanol/water (Log Kow) | : | Not applicable |
| Vapour pressure | : | Not available |
| Vapour pressure at 50°C | : | Not available |
| Density | : | 1,05 g/cm³ at 20 °C |
| Relative density | : | 1,05 at 20 °C |
| Relative vapour density at 20°C | : | Not available |
| Particle characteristics | : | Not applicable |

### 9.2. Other information

#### Other safety characteristics

| | | |
|---|---|---|
| VOC content | : | 575 g/l |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

| | | |
|---|---|---|
| Hardening time | : | Not applicable. |

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Avoid temperatures exceeding the flash point.

### 10.5. Incompatible materials

Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Carbon oxides (CO, CO2).

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Acute toxicity (oral)** : Not classified (Based on available data, the classification criteria are not met)
**Acute toxicity (dermal)** : Not classified (Based on available data, the classification criteria are not met)
**Acute toxicity (inhalation)** : Not classified (Based on available data, the classification criteria are not met)

| **n-butyl acetate (123-86-4)** | |
|---|---|
| LD50 oral rat | 10760 mg/kg |
| LD50 dermal rabbit | > 17600 mg/kg |
| LC50 Inhalation - Rat (Dust/Mist) | 23,4 mg/l/4h |

| **acetone; propan-2-one; propanone (67-64-1)** | |
|---|---|
| LD50 oral rat | 5800 mg/kg bodyweight |
| LD50 dermal | > 15688 mg/kg bodyweight |
| LC50 Inhalation - Rat | 76 mg/l/4h |

| **zinc oxide (1314-13-2)** | |
|---|---|
| LD50 oral rat | 7950 mg/kg |
| LD50 dermal rat | > 2000 mg/kg bodyweight |
| LC50 Inhalation - Rat | 2500 mg/l |

| **1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2)** | |
|---|---|
| LD50 oral rat | 4016 mg/kg |
| LD50 dermal rabbit | > 2000 mg/kg |
| LC50 Inhalation - Rat | > 25,8 mg/l |

| **Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics** | |
|---|---|
| LD50 oral rat | > 5000 mg/kg |
| LD50 dermal rat | > 5000 mg/kg |
| LD50 dermal rabbit | > 5000 mg/kg |

| **Hydrocarbons, C9, aromatics (128601-23-0)** | |
|---|---|
| LD50 oral rat | 3592 mg/kg |
| LD50 dermal rabbit | > 3160 mg/kg bodyweight |
| LC50 Inhalation - Rat | > 6,193 mg/l/4h |

| **aluminium powder (stabilised) (7429-90-5)** | |
|---|---|
| LD50 oral rat | > 15900 mg/kg bodyweight |

| **4-morpholinecarbaldehyde (4394-85-8)** | |
|---|---|
| LD50 oral rat | > 7314 mg/kg bodyweight |
| LD50 dermal rabbit | > 18400 mg/kg bodyweight |
| LC50 Inhalation - Rat | > 5,319 mg/l/4h |

**Skin corrosion/irritation** : Not classified (Based on available data, the classification criteria are not met)
pH: Not applicable

| **n-butyl acetate (123-86-4)** | |
|---|---|
| pH | 6,2 |

| 4-morpholinecarbaldehyde (4394-85-8) | |
|---|---|
| pH | 10 |

**Serious eye damage/irritation** : Causes serious eye irritation.
pH: Not applicable

| n-butyl acetate (123-86-4) | |
|---|---|
| pH | 6,2 |

| 4-morpholinecarbaldehyde (4394-85-8) | |
|---|---|
| pH | 10 |

**Respiratory or skin sensitisation** : Not classified (Based on available data, the classification criteria are not met)
**Germ cell mutagenicity** : Not classified (Based on available data, the classification criteria are not met)
**Carcinogenicity** : Not classified (Based on available data, the classification criteria are not met)
**Reproductive toxicity** : Not classified (Based on available data, the classification criteria are not met)

| aluminium powder (stabilised) (7429-90-5) | |
|---|---|
| NOAEL (animal/male, F0/P) | 1000 mg/kg bodyweight |

**STOT-single exposure** : May cause drowsiness or dizziness.

| n-butyl acetate (123-86-4) | |
|---|---|
| STOT-single exposure | May cause drowsiness or dizziness. |

| acetone; propan-2-one; propanone (67-64-1) | |
|---|---|
| STOT-single exposure | May cause drowsiness or dizziness. |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| STOT-single exposure | May cause drowsiness or dizziness. |

| Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics | |
|---|---|
| STOT-single exposure | May cause drowsiness or dizziness. |

| Hydrocarbons, C9, aromatics (128601-23-0) | |
|---|---|
| STOT-single exposure | May cause drowsiness or dizziness. May cause respiratory irritation. |

**STOT-repeated exposure** : Not classified (Based on available data, the classification criteria are not met)

| n-butyl acetate (123-86-4) | |
|---|---|
| LOAEL (oral, rat, 90 days) | 500 mg/kg bodyweight |
| NOAEL (oral, rat, 90 days) | 125 mg/kg bodyweight |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| LOAEL (oral, rat, 90 days) | 2757 mg/kg bodyweight |
| NOAEL (oral, rat, 90 days) | 919 mg/kg bodyweight |
| NOAEL (dermal, rat/rabbit, 90 days) | > 1000 mg/kg bodyweight |

| Hydrocarbons, C9, aromatics (128601-23-0) | |
|---|---|
| NOAEL (oral, rat, 90 days) | 600 mg/kg bodyweight |

| aluminium powder (stabilised) (7429-90-5) | |
|---|---|
| NOAEL (subchronic, oral, animal/male, 90 days) | 1034 mg/kg bodyweight |
| NOAEL (subchronic, oral, animal/female, 90 days) | 1087 mg/kg bodyweight |

| 4-morpholinecarbaldehyde (4394-85-8) | |
|---|---|
| NOAEL (oral, rat, 90 days) | 1000 mg/kg bodyweight |

**Aspiration hazard** : Not classified (Based on available data, the classification criteria are not met)

| n-butyl acetate (123-86-4) | |
|---|---|
| Viscosity, kinematic | 0,83 mm²/s |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| Viscosity, kinematic | 1,848 mm²/s |

| Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics | |
|---|---|
| Viscosity, kinematic | 1,33 mm²/s |

### 11.2. Information on other hazards

**Endocrine disrupting properties**

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short–term (acute) : Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long–term (chronic) : Toxic to aquatic life with long lasting effects.

| n-butyl acetate (123-86-4) | |
|---|---|
| LC50 - Fish [1] | 18 mg/l |
| EC50 - Crustacea [1] | 44 mg/l |
| EC50 72h - Algae [1] | 674,7 mg/l |
| LOEC (chronic) | 47,6 mg/l |
| NOEC (chronic) | 23,2 mg/l |
| NOEC chronic algae | 200 mg/l |

| acetone; propan-2-one; propanone (67-64-1) | |
|---|---|
| LC50 - Fish [1] | 5540 mg/l |
| EC50 - Other aquatic organisms [1] | 12600 mg/l Daphnia magna (Water flea) |
| LOEC (chronic) | > 79 mg/l |
| NOEC (chronic) | ≥ 79 mg/l |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| LC50 - Fish [1] | 6812 mg/l |
| LC50 - Fish [2] | 20800 mg/l |
| EC50 - Crustacea [1] | 21100 – 25900 mg/l |
| EC50 - Other aquatic organisms [1] | 2954 mg/l |
| ErC50 algae | > 1000 mg/l |

| Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics | |
|---|---|
| LC50 - Fish [1] | > 1000 mg/l |

| Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics | |
|---|---|
| EC50 - Crustacea [1] | > 1000 mg/l |
| EC50 - Other aquatic organisms [1] | > 1000 mg/l |
| EC50 72h - Algae [1] | > 1000 mg/l |

| Hydrocarbons, C9, aromatics (128601-23-0) | |
|---|---|
| LC50 - Fish [1] | 9,2 mg/l |
| EC50 - Crustacea [1] | 3,2 mg/l |
| EC50 72h - Algae [1] | 2,6 – 2,9 mg/l |

| aluminium powder (stabilised) (7429-90-5) | |
|---|---|
| LC50 - Fish [1] | > 100 mg/l |
| EC50 - Other aquatic organisms [2] | > 100 mg/l |

| 4-morpholinecarbaldehyde (4394-85-8) | |
|---|---|
| LC50 - Fish [1] | > 500 mg/l Leuciscus idus |
| EC50 - Crustacea [1] | > 500 mg/l Daphnia magna |
| EC50 72h - Algae [1] | 23880 mg/l Desmodesmus subspicatus |
| EC50 72h - Algae [2] | 17440 mg/l Desmodesmus subspicatus |

### 12.2. Persistence and degradability

| ZG-90 SILVER | |
|---|---|
| Persistence and degradability | Not established. No data is available on the degradability of this product. |

### 12.3. Bioaccumulative potential

| ZG-90 SILVER | |
|---|---|
| Partition coefficient n-octanol/water (Log Kow) | Not applicable |

| n-butyl acetate (123-86-4) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | 2,3 |

| acetone; propan-2-one; propanone (67-64-1) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | -0,24 |

| 1-methoxy-2-propanol; monopropylene glycol methyl ether (107-98-2) | |
|---|---|
| Bioconcentration factor (BCF REACH) | < 100 |
| Partition coefficient n-octanol/water (Log Pow) | 0,37 |

| 4-morpholinecarbaldehyde (4394-85-8) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | -1,32 |

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

| ZG-90 SILVER | |
|---|---|
| Results of PBT assessment | Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII |

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

### 12.7. Other adverse effects

| ZG-90 SILVER | |
|---|---|
| Other information | No other effects known |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

European List of Waste (LoW, EC 2000/532) : According to the European Waste Catalogue (EWC), Waste Codes are not product specific, but application specific Waste codes should be assigned by the user based on the application for which the product was used.

## SECTION 14: Transport information

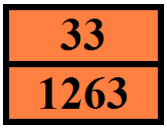
In accordance with ADR / IMDG / IATA / ADN / RID

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| **14.1. UN number or ID number** | | | | |
| UN 1263 | UN 1263 | UN 1263 | UN 1263 | UN 1263 |
| **14.2. UN proper shipping name** | | | | |
| PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta) | PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta) | Paint related material (Zinc Oxide, Solvent naphta) | PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta) | PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta) |
| **Transport document description** | | | | |
| UN 1263 PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta), 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS | UN 1263 PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta), 3, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS | UN 1263 Paint related material (Zinc Oxide, Solvent naphta), 3, II, ENVIRONMENTALLY HAZARDOUS | UN 1263 PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta), 3, II, ENVIRONMENTALLY HAZARDOUS | UN 1263 PAINT RELATED MATERIAL (Zinc Oxide, Solvent naphta), 3, II, ENVIRONMENTALLY HAZARDOUS |
| **14.3. Transport hazard class(es)** | | | | |
| 3 | 3 | 3 | 3 | 3 |
|  |  |  |  |  |
| **14.4. Packing group** | | | | |
| II | II | II | II | II |

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| **14.5. Environmental hazards** | | | | |
| Dangerous for the environment: Yes | Dangerous for the environment: Yes<br>Marine pollutant: Yes<br>EmS-No. (Fire): F-E<br>EmS-No. (Spillage): S-E | Dangerous for the environment: Yes | Dangerous for the environment: Yes | Dangerous for the environment: Yes |
| No supplementary information available | | | | |

## 14.6. Special precautions for user

**Overland transport**

| | | |
|---|---|---|
| Classification code (ADR) | : | F1 |
| Special provisions (ADR) | : | 163, 367, 640C, 650 |
| Limited quantities (ADR) | : | 5l |
| Excepted quantities (ADR) | : | E2 |
| Packing instructions (ADR) | : | P001 |
| Special packing provisions (ADR) | : | PP1 |
| Mixed packing provisions (ADR) | : | MP19 |
| Portable tank and bulk container instructions (ADR) | : | T4 |
| Portable tank and bulk container special provisions (ADR) | : | TP1, TP8, TP28 |
| Tank code (ADR) | : | L1.5BN |
| Vehicle for tank carriage | : | FL |
| Transport category (ADR) | : | 2 |
| Special provisions for carriage - Operation (ADR) | : | S2, S20 |
| Hazard identification number (Kemler No.) | : | 33 |
| Orange plates | : |  |
| Tunnel restriction code (ADR) | : | D/E |

**Transport by sea**

| | | |
|---|---|---|
| Special provisions (IMDG) | : | 163, 367 |
| Limited quantities (IMDG) | : | 5 L |
| Excepted quantities (IMDG) | : | E2 |
| Packing instructions (IMDG) | : | P001 |
| Special packing provisions (IMDG) | : | PP1 |
| IBC packing instructions (IMDG) | : | IBC02 |
| Tank instructions (IMDG) | : | T4 |
| Tank special provisions (IMDG) | : | TP1, TP8, TP28 |
| Stowage category (IMDG) | : | B |
| Properties and observations (IMDG) | : | Miscibility with water depends upon the composition. |

**Air transport**

| | | |
|---|---|---|
| PCA Excepted quantities (IATA) | : | E2 |
| PCA Limited quantities (IATA) | : | Y341 |
| PCA limited quantity max net quantity (IATA) | : | 1L |
| PCA packing instructions (IATA) | : | 353 |
| PCA max net quantity (IATA) | : | 5L |
| CAO packing instructions (IATA) | : | 364 |
| CAO max net quantity (IATA) | : | 60L |
| Special provisions (IATA) | : | A3, A72, A192 |
| ERG code (IATA) | : | 3L |

**Inland waterway transport**

| | | |
|---|---|---|
| Classification code (ADN) | : | F1 |
| Special provisions (ADN) | : | 163, 367, 640C, 650 |
| Limited quantities (ADN) | : | 5 L |

| | | |
|---|---|---|
| Excepted quantities (ADN) | : | E2 |
| Equipment required (ADN) | : | PP, EX, A |
| Ventilation (ADN) | : | VE01 |
| Number of blue cones/lights (ADN) | : | 1 |

**Rail transport**

| | | |
|---|---|---|
| Classification code (RID) | : | F1 |
| Special provisions (RID) | : | 163, 367, 640C, 650 |
| Limited quantities (RID) | : | 5L |
| Excepted quantities (RID) | : | E2 |
| Packing instructions (RID) | : | P001 |
| Special packing provisions (RID) | : | PP1 |
| Mixed packing provisions (RID) | : | MP19 |
| Portable tank and bulk container instructions (RID) | : | T4 |
| Portable tank and bulk container special provisions (RID) | : | TP1, TP8, TP28 |
| Tank codes for RID tanks (RID) | : | L1.5BN |
| Transport category (RID) | : | 2 |
| Colis express (express parcels) (RID) | : | CE7 |
| Hazard identification number (RID) | : | 33 |

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

Not applicable

## SECTION 15: Regulatory information

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

#### EU-Regulations

#### REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

#### REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

#### REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

#### PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

#### POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

#### Ozone Regulation (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

#### Council Regulation (EC) for the control of dual-use items

Contains substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items: Aluminium powder (7429-90-5).

#### VOC Directive (2004/42)

VOC content : 575 g/l

#### Explosives Precursors Regulation (2019/1148)

Contains substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)
**ANNEX II REPORTABLE EXPLOSIVES PRECURSORS**
List of substances on their own or in mixtures or in substances for which suspicious transactions and significant disappearances and thefts are to be reported within 24 hours.

| Name | CAS-No. | Combined Nomenclature code (CN) | Combined Nomenclature code for mixture without constituents which would determine classification under another CN code |
|---|---|---|---|
| Acetone | 67-64-1 | 2914 11 00 | ex 3824 99 92 |

**Drug Precursors Regulation (273/2004)**

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

| Name | CN designation | CAS-No. | CN code | Category, Subcategory | Threshold | Annex |
|---|---|---|---|---|---|---|
| Acetone | | 67-64-1 | 2914 11 00 | Category 3 | | Annex I |

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

| Abbreviations and acronyms: | |
|---|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BLV | Biological limit value |
| BOD | Biochemical oxygen demand (BOD) |
| COD | Chemical oxygen demand (COD) |
| DMEL | Derived Minimal Effect level |
| DNEL | Derived-No Effect Level |
| EC-No. | European Community number |
| EC50 | Median effective concentration |
| EN | European Standard |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| NOAEC | No-Observed Adverse Effect Concentration |
| NOAEL | No-Observed Adverse Effect Level |
| NOEC | No-Observed Effect Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| OEL | Occupational Exposure Limit |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |

| Abbreviations and acronyms: | |
|---|---|
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| STP | Sewage treatment plant |
| ThOD | Theoretical oxygen demand (ThOD) |
| TLM | Median Tolerance Limit |
| VOC | Volatile Organic Compounds |
| CAS-No. | Chemical Abstract Service number |
| N.O.S. | Not Otherwise Specified |
| vPvB | Very Persistent and Very Bioaccumulative |
| ED | Endocrine disruptor |

| Full text of H- and EUH-statements: | |
|---|---|
| Aquatic Acute 1 | Hazardous to the aquatic environment – Acute Hazard, Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment – Chronic Hazard, Category 1 |
| Aquatic Chronic 2 | Hazardous to the aquatic environment – Chronic Hazard, Category 2 |
| Asp. Tox. 1 | Aspiration hazard, Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Flam. Liq. 3 | Flammable liquids, Category 3 |
| Flam. Sol. 1 | Flammable solids, Category 1 |
| Skin Sens. 1 | Skin sensitisation, Category 1 |
| STOT SE 3 | Specific target organ toxicity – Single exposure, Category 3, Narcosis |
| Water-react. 2 | Substances and Mixtures which, in contact with water, emit flammable gases, Category 2 |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H228 | Flammable solid. |
| H261 | In contact with water releases flammable gases. |
| H304 | May be fatal if swallowed and enters airways. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |
| EUH208 | Contains 4-morpholinecarbaldehyde (4394-85-8). May produce an allergic reaction. |