

**Safety Data Sheet**  
according to Regulation (EC) No. 1907/2006 (REACH)  
according to Regulation (EU) 2020/878

**JANSEN** 

Article No.: 40-811  
Print date: 11.01.2023  
Version: 7.73

Zinkausbesserungs-Spray  
Revision date: 08.09.2022  
Issue date: 07.09.2022

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

**1.1. Product identifier**

Article No. (manufacturer/supplier): 40-811  
Trade name/designation: Zinkausbesserungs-Spray  
silber  
metallisch glänzend  
UFI: E2WE-0JNJ-EG01-PXGE

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

**Relevant identified uses:**

Varnish / paint

**Uses advised against:**

Aware of any other information

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

**Supplier (manufacturer/importer/only representative/downstream user/distributor)**

P.A. Jansen GmbH u. Co., KG

Hochstadenstraße 22

D-53474 Bad Neuenahr-Ahrweiler

Telephone: +49 2641 3897-0

Telefax: +49 2641 3897-28

Homepage: www.jansen.de

**Department responsible for information:**

laboratory

E-mail (competent person)

sicherheitsdatenblatt@jansen.de

**1.4. Emergency telephone number**

Emergency telephone number

+49 2641 3897-51

Only available during office hours.

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

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

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Aerosol 1 / H222

Aerosol

Extremely flammable aerosol.

Aerosol 1 / H229

Aerosol

Pressurised container: May burst if heated.

Skin Irrit. 2 / H315

Skin corrosion/irritation

Causes skin irritation.

Eye Irrit. 2 / H319

Serious eye damage/eye irritation

Causes serious eye irritation.

Aquatic Chronic 2 / H411

Hazardous to the aquatic environment

Toxic to aquatic life with long lasting effects.

**2.2. Label elements**

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

**Hazard pictograms**



**Danger**

**Hazard statements**

H222

Extremely flammable aerosol.

H229

Pressurised container: May burst if heated.

H315

Causes skin irritation.

H319

Causes serious eye irritation.

H411

Toxic to aquatic life with long lasting effects.

**Precautionary statements**

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.

P264

Wash hands thoroughly after handling.

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P280 Wear protective gloves and eye/face 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.  
 P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard components for labelling**

No data available

**Supplemental hazard information**

No data available

**2.3. Other hazards**

Without adequate ventilation, explosive atmosphere/gas mix may be created. Do not use in confined spaces. Only use the product for the intended purpose.

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**Description** Zinc remediation spray

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

EC No. CAS No. Index No.	REACH No. Designation classification: // Remark	weight-%
204-065-8 115-10-6	01-2119472128-37 dimethyl ether	50 - 70
603-019-00-8	compressed gas H280 / Flam. Gas 1 H220	
231-175-3 7440-66-6	01-2119467174-37 Zinc powder - zinc dust (stabilised)	8 - 10
030-001-01-9	Aquatic Acute 1 H400 (M = 1) / Aquatic Chronic 1 H410 (M = 1)	
215-535-7 1330-20-7	01-2119488216-32 Xylene	8 - 10
601-022-00-9	Acute Tox. 4 H312 / Acute Tox. 4 H332 / Skin Irrit. 2 H315 / Eye Irrit. 2 H319 / STOT SE 3 H335 / STOT RE 2 H373 / Asp. Tox. 1 H304 / Flam. Liq. 3 H226 Acute toxicity estimate (ATE): ATE (dermal): 4200 mg/kg bw	
204-658-1 123-86-4	01-2119485493-29 n-butyl acetate	5 - 7
607-025-00-1	Flam. Liq. 3 H226 / STOT SE 3 H336 / EUH066	
205-500-4 141-78-6	01-2119475103-46 Ethyl acetate	5 - 7
607-022-00-5	Flam. Liq. 2 H225 / Eye Irrit. 2 H319 / STOT SE 3 H336 / EUH066	
200-662-2 67-64-1	01-2119471330-49 Acetone	5 - 7
606-001-00-8	Flam. Liq. 2 H225 / Eye Irrit. 2 H319 / STOT SE 3 H336 / EUH066	
231-072-3 7429-90-5	01-2119529243-45 Aluminium powder (stabilised)	5 - 7
013-002-00-1 918-481-9	Flam. Sol. 1 H228 01-2119457273-39 Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2 % aromatics	3 - 5
	Asp. Tox. 1 H304 / EUH066	
200-751-6 71-36-3	01-2119484630-38 Butan-1-ol	1,5 - 2
603-004-00-6	Flam. Liq. 3 H226 / Acute Tox. 4 H302 / STOT SE 3 H335 / Skin Irrit. 2 H315 / Eye Dam. 1 H318 / STOT SE 3 H336	
939-607-9 68308-64-5	Quaternary ammonium compounds, cocoalkylethylidimethyl-, ethylsulfates Acute Tox. 4 H302 / Acute Tox. 3 H311 / Skin Corr. 1C H314 / Eye Dam. 1 H318 / Aquatic Acute 1 H400 / Aquatic Chronic 1 H410	0,2 - 0,25

**Additional information**

Full text of classification: see section 16

**SECTION 4: First aid measures**

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#### 4.1. Description of first aid measures

##### General information

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

##### In case of inhalation

Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

##### Following skin contact

Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

##### After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice immediately.

##### Following ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Seek medical advice immediately. Keep victim calm. Do NOT induce vomiting.

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

In all cases of doubt, or when symptoms persist, seek medical advice.

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

First Aid, decontamination, treatment of symptoms.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

alcohol resistant foam, carbon dioxide, Powder, spray mist, (water)

##### Unsuitable extinguishing media

strong water jet

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

Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

#### 5.3. Advice for firefighters

Provide a conveniently located respiratory protective device. Do not allow water used to extinguish fire to enter drains, ground or waterways. Cool closed containers that are near the source of the fire.

### SECTION 6: Accidental release measures

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

Keep away from sources of ignition. Ventilate affected area. Do not breathe vapours.

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

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

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13). Clean using cleansing agents. Do not use solvents.

#### 6.4. Reference to other sections

Observe protective provisions (see section 7 and 8).

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advices on safe handling

Protect from heat and direct sunlight. Ensure good ventilation / exhaustion at the workplace. Observe the exposure limits. Use only in well-ventilated areas. Ensure good interior ventilation, especially at floor level (vapors are heavier than air).

##### Further information

Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Container under pressure. Protect from direct exposure to sunlight and temperatures exceeding 50 °C. Do not open with force, even

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when empty.

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

### Requirements for storage rooms and vessels

Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks. Soils have to conform to the "Guidelines for avoidance of ignition hazards due to electrostatic charges (TRGS 727)".

### Hints on joint storage

Keep away from strongly acidic and alkaline materials as well as oxidizers.

### Further information on storage conditions

Protect from heat and direct sunlight. Take care of instructions on label.

## 7.3. Specific end use(s)

Observe technical data sheet. Observe instructions for use.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limit values

dimethyl ether

Index No. 603-019-00-8 / EC No. 204-065-8 / CAS No. 115-10-6

WEL, TWA: 766 mg/m<sup>3</sup>; 400 ppm

WEL, STEL: 958 mg/m<sup>3</sup>; 500 ppm

Xylene

Index No. 601-022-00-9 / EC No. 215-535-7 / CAS No. 1330-20-7

WEL, TWA: 220 mg/m<sup>3</sup>; 50 ppm

WEL, STEL: 441 mg/m<sup>3</sup>; 100 ppm

Remark: (may be absorbed through the skin)

BMGV, TWA: 650 mmol/mol creatinine

Remark: methyl hippuric acid; urine; end of exposure or end of shift

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

WEL, TWA: 734 mg/m<sup>3</sup>; 200 ppm

WEL, STEL: 1468 mg/m<sup>3</sup>; 400 ppm

Acetone

Index No. 606-001-00-8 / EC No. 200-662-2 / CAS No. 67-64-1

WEL, TWA: 1210 mg/m<sup>3</sup>; 500 ppm

WEL, STEL: 3620 mg/m<sup>3</sup>; 1500 ppm

Aluminium powder (stabilised)

Index No. 013-002-00-1 / EC No. 231-072-3 / CAS No. 7429-90-5

WEL, TWA: 10 mg/m<sup>3</sup>

Remark: (inhalable fraction)

WEL, TWA: 4 mg/m<sup>3</sup>

Remark: (respirable fraction)

Butan-1-ol

Index No. 603-004-00-6 / EC No. 200-751-6 / CAS No. 71-36-3

WEL, STEL: 154 mg/m<sup>3</sup>; 50 ppm

Remark: (may be absorbed through the skin)

#### Additional information

TWA : Long-term occupational exposure limit value

STEL : short-term occupational exposure limit value

Ceiling : peak limitation

#### DNEL:

Butan-1-ol

Index No. 603-004-00-6 / EC No. 200-751-6 / CAS No. 71-36-3

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DNEL long-term inhalative (local), Workers: 310 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 1562 mg/kg  
DNEL long-term dermal (systemic), Consumer: 3125 mg/kg  
DNEL long-term inhalative (local), Consumer: 155 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Consumer: 55,357 mg/m<sup>3</sup>

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

DNEL long-term dermal (systemic), Workers: 63 mg/kg  
DNEL acute inhalative (local), Workers: 1468 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Workers: 1468 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Workers: 734 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 734 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 4,5 mg/kg  
DNEL long-term dermal (systemic), Consumer: 37 mg/kg  
DNEL acute inhalative (local), Consumer: 734 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Consumer: 734 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Consumer: 367 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Consumer: 367 mg/m<sup>3</sup>

Acetone

Index No. 606-001-00-8 / EC No. 200-662-2 / CAS No. 67-64-1

DNEL long-term dermal (systemic), Workers: 186 mg/kg  
DNEL acute inhalative (local), Workers: 2420 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Workers: 1210 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 1210 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 62 mg/kg  
DNEL long-term dermal (systemic), Consumer: 62 mg/kg  
DNEL long-term inhalative (systemic), Consumer: 200 mg/m<sup>3</sup>

n-butyl acetate

Index No. 607-025-00-1 / EC No. 204-658-1 / CAS No. 123-86-4

DNEL acute dermal, short-term (systemic), Workers: 11 mg/kg  
DNEL long-term dermal (systemic), Workers: 11 mg/kg  
DNEL acute inhalative (local), Workers: 600 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Workers: 600 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Workers: 300 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 300 mg/m<sup>3</sup>  
DNEL short-term oral (acute), Consumer: 2 mg/kg  
DNEL long-term oral (repeated), Consumer: 2 mg/kg  
DNEL acute dermal, short-term (systemic), Consumer: 6 mg/kg  
DNEL long-term dermal (systemic), Consumer: 6 mg/kg  
DNEL acute inhalative (local), Consumer: 300 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Consumer: 300 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Consumer: 35,7 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Consumer: 35,7 mg/m<sup>3</sup>

Zinc powder - zinc dust (stabilised)

Index No. 030-001-01-9 / EC No. 231-175-3 / CAS No. 7440-66-6

DNEL long-term dermal (systemic), Workers: 83 mg/kg  
DNEL long-term inhalative (systemic), Workers: 5 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 0,83 mg/kg  
DNEL long-term dermal (systemic), Consumer: 83 mg/kg  
DNEL long-term inhalative (systemic), Consumer: 2,5 mg/m<sup>3</sup>

Aluminium powder (stabilised)

Index No. 013-002-00-1 / EC No. 231-072-3 / CAS No. 7429-90-5

DNEL long-term inhalative (local), Workers: 3,72 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 3,72 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 3,95 mg/kg

Xylene

Index No. 601-022-00-9 / EC No. 215-535-7 / CAS No. 1330-20-7

DNEL long-term dermal (systemic), Workers: 212 mg/kg  
DNEL acute inhalative (local), Workers: 442 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Workers: 442 mg/m<sup>3</sup>

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DNEL long-term inhalative (local), Workers: 221 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 221 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 12,5 mg/kg  
DNEL long-term dermal (systemic), Consumer: 125 mg/kg  
DNEL acute inhalative (local), Consumer: 260 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Consumer: 260 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Consumer: 65,3 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Consumer: 65,3 mg/m<sup>3</sup>

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2 % aromatics  
EC No. 918-481-9

DNEL long-term dermal (systemic), Workers: 300 mg/kg  
DNEL long-term oral (repeated), Consumer: 300 mg/kg  
DNEL long-term dermal (systemic), Consumer: 300 mg/kg  
DNEL long-term inhalative (systemic), Consumer: 900 mg/m<sup>3</sup>

**PNEC:**

Butan-1-ol

Index No. 603-004-00-6 / EC No. 200-751-6 / CAS No. 71-36-3

PNEC aquatic, freshwater: 0,082 mg/L  
PNEC aquatic, marine water: 0,008 mg/L  
PNEC aquatic, intermittent release: 2,25 mg/L  
PNEC sediment, freshwater: 0,324 mg/kg  
PNEC sediment, marine water: 0,032 mg/kg  
PNEC, soil: 0,017 mg/kg  
PNEC sewage treatment plant (STP): 2476 mg/L

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

PNEC aquatic, freshwater: 0,24 mg/L  
PNEC aquatic, marine water: 0,024 mg/L  
PNEC aquatic, intermittent release: 1,65 mg/L  
PNEC sediment, freshwater: 1,15 mg/kg  
PNEC sediment, marine water: 0,115 mg/kg  
PNEC, soil: 0,148 mg/kg  
PNEC sewage treatment plant (STP): 650 mg/L  
PNEC Secondary Poisoning: 200 mg/kg

Acetone

Index No. 606-001-00-8 / EC No. 200-662-2 / CAS No. 67-64-1

PNEC aquatic, freshwater: 10,6 mg/L  
PNEC aquatic, marine water: 1,06 mg/L  
PNEC aquatic, intermittent release: 21 mg/L  
PNEC sediment, freshwater: 30,4 mg/kg  
PNEC sediment, marine water: 3,04 mg/kg  
PNEC, soil: 29,5 mg/kg  
PNEC sewage treatment plant (STP): 100 mg/L

n-butyl acetate

Index No. 607-025-00-1 / EC No. 204-658-1 / CAS No. 123-86-4

PNEC aquatic, freshwater: 0,18 mg/L  
PNEC aquatic, marine water: 0,018 mg/L  
PNEC aquatic, intermittent release: 0,36 mg/L  
PNEC sediment, freshwater: 0,981 mg/kg  
PNEC sediment, marine water: 0,0981 mg/kg  
PNEC, soil: 0,093 mg/kg  
PNEC sewage treatment plant (STP): 35,6 mg/L

Zinc powder - zinc dust (stabilised)

Index No. 030-001-01-9 / EC No. 231-175-3 / CAS No. 7440-66-6

PNEC aquatic, freshwater: 0,0206 mg/L  
PNEC aquatic, marine water: 0,061 mg/L  
PNEC sediment, freshwater: 117,8 mg/kg  
PNEC sediment, marine water: 56,5 mg/kg  
PNEC, soil: 35,6 mg/kg  
PNEC sewage treatment plant (STP): 0,052 mg/L

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Aluminium powder (stabilised)  
Index No. 013-002-00-1 / EC No. 231-072-3 / CAS No. 7429-90-5  
PNEC aquatic, freshwater: 0,0749 mg/L  
PNEC sewage treatment plant (STP): 20 mg/L

Xylene  
Index No. 601-022-00-9 / EC No. 215-535-7 / CAS No. 1330-20-7  
PNEC aquatic, freshwater: 0,327 mg/L  
PNEC aquatic, marine water: 0,327 mg/L  
PNEC aquatic, intermittent release: 0,327 mg/L  
PNEC sediment, freshwater: 12,46 mg/kg  
PNEC sediment, marine water: 12,46 mg/kg  
PNEC, soil: 2,31 mg/kg  
PNEC sewage treatment plant (STP): 6,58 mg/L

## 8.2. Exposure controls

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

### Personal protection equipment

#### **Respiratory protection**

If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used. Observe the wear time limits as specified by the manufacturer. Recommended respiratory protection articles: Inadequately ventilated workplaces and spraying procedures are necessary. Fresh air mask or short-time work combination filter A2-P2 are recommended.

#### **Hand protection**

For prolonged or repeated handling the following glove material must be used: NBR (Nitrile rubber)

Thickness of the glove material > 0,4 mm ; Breakthrough time: > 480 min.

Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles EN ISO 374

Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

#### **Eye/face protection**

Wear closely fitting protective glasses in case of splashes.

#### **Body protection**

Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

#### **Protective measures**

After contact clean skin thoroughly with water and soap or use appropriate cleanser.

#### **Environmental exposure controls**

Do not allow to enter into surface water or drains. See section 7. No additional measures necessary.

## **SECTION 9: Physical and chemical properties**

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

<b>Physical state:</b>	<b>gaseous</b>
<b>Colour:</b>	<b>silver</b>
<b>Odour:</b>	<b>characteristic</b>
<b>Odour threshold:</b>	<b>No data available</b>
<b>Melting point/freezing point:</b>	<b>-95 °C</b> Source: Acetone
<b>Initial boiling point and boiling range:</b>	<b>-24 °C</b> Source: dimethyl ether
<b>Flammability:</b>	<b>Extremely flammable aerosol.</b>
<b>Lower and upper explosion limit:</b>	
<b>Lower explosion limit:</b>	<b>3 Vol-%</b> Method: literature value Source: Xylene
<b>Upper explosion limit:</b>	<b>18,6 Vol-%</b> Method: literature value

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	Source: dimethyl ether
<b>Flash point:</b>	<b>-42 °C</b> Method: EN ISO 1523
<b>Ignition temperature in °C:</b>	<b>No data available</b>
<b>Decomposition temperature:</b>	<b>No data available</b>
<b>pH at 20 °C:</b>	<b>No data available</b>
<b>Viscosity at °C:</b>	<b>Nicht anwendbar</b>
<b>Solubility(ies):</b>	
<b>Water solubility at 20 °C:</b>	<b>No data available</b>
<b>Partition coefficient: n-octanol/water:</b>	<b>see section 12</b>
<b>Vapour pressure at 20 °C:</b>	<b>No data available</b>
<b>Density and/or relative density:</b>	
<b>Density at 20 °C:</b>	<b>No data available</b>
<b>Relative vapour density:</b>	<b>No data available</b>
<b>particle characteristics:</b>	<b>not applicable</b>

9.2. **Other information**

**SECTION 10: Stability and reactivity**

10.1. **Reactivity**

No information available.

10.2. **Chemical stability**

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.3. **Possibility of hazardous reactions**

Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. **Conditions to avoid**

Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5. **Incompatible materials**

not applicable

10.6. **Hazardous decomposition products**

Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

**SECTION 11: Toxicological information**

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

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**Acute toxicity**

Butan-1-ol

oral, LD50, Rat 1000 - 2000 mg/kg  
dermal, LD50, Rabbit: > 2000 mg/kg  
inhalative (vapours), LC50, Rat: > 17,76 mg/L (4 h)

Ethyl acetate

oral, LD50, Rat: 4934 mg/kg  
Method: OECD 401  
dermal, LD50, Rabbit: > 2000 mg/kg  
inhalative (vapours), LC50, Rat: 29,3 mg/L (4 h)  
inhalative (vapours), LC50, Rat: 22,5 mg/L (6 h)

Acetone

oral, LD50, Rat: 5800 mg/kg  
Method: OECD 401  
dermal, LD50, Rat: > 15800 mg/kg  
inhalative (vapours), LC50, Rat: 76 mg/L (4 h)

n-butyl acetate

oral, LD50, Rat: 10760 mg/kg



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Method: OECD 423  
dermal, LD50, Rabbit: 14112 mg/kg  
Method: OECD 402  
inhalative (vapours), LC50, Rat: > 21 mg/L (4 h)  
Method: OECD 403

Zinc powder - zinc dust (stabilised)  
oral, LD50, Rat: > 2000 mg/kg  
inhalative (dust and mist), LC50, Rat: 5,41 mg/L (4 h)

Aluminium powder (stabilised)  
inhalative (dust and mist), LC50, Rat: > 5 mg/L (4 h)

Xylene  
oral, LD50, Rat: 4300 mg/kg  
dermal, LD50, Rabbit: 4200 mg/kg  
inhalative (vapours), LC50, Rat: 10 - 20 mg/L (4 h)

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2 % aromatics  
oral, LD50, Rat: > 5000 mg/kg  
Method: OECD 401  
dermal, LD50, Rabbit: > 5000 mg/kg  
Method: OECD 402  
inhalative (vapours), LC50, Rat: > 4951 mg/L (4 h)  
Method: OECD 403

**Skin corrosion/irritation; Serious eye damage/eye irritation**

Causes skin irritation.

Causes serious eye irritation.

Butan-1-ol

Skin  
Irritating to skin.  
eyes  
Risk of serious damage to eyes.

Ethyl acetate

eyes  
irritant.

Acetone

Skin (4 h)  
eyes, Rabbit.  
Method: OECD 405  
Irritating to eyes.

n-butyl acetate

Skin (4 h)  
Method: OECD 404  
slightly irritant  
eyes, Rabbit  
Method: OECD 405  
slightly irritant

Xylene

Skin  
Irritant - skin irritation and eye damage  
eyes  
mildly irritating

**Respiratory or skin sensitisation**

Based on available data, the classification criteria are not met.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Based on available data, the classification criteria are not met.

**STOT-single exposure; STOT-repeated exposure**

Ethyl acetate

Specific target organ toxicity (single exposure), drowsiness

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Acetone  
Specific target organ toxicity (single exposure)  
Specific target organ toxicity (single exposure), drowsiness

n-butyl acetate  
Specific target organ toxicity (single exposure), drowsiness

Xylene  
Specific target organ toxicity (single exposure), Irritation  
Irritation to respiratory tract

#### Aspiration hazard

Xylene  
Aspiration hazard  
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2 % aromatics  
Aspiration hazard

#### Practical experience/human evidence

Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: headache, dizziness, fatigue, amyosthenia, drowsiness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

#### Overall assessment on CMR properties

The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

#### 11.2. Information on other hazards

##### Endocrine disrupting properties

No information available.

### SECTION 12: Ecological information

Classification according to Regulation (EC) No 1272/2008 [CLP]  
There is no information available on the preparation itself .  
Do not allow to enter into surface water or drains.

#### 12.1. Toxicity

##### Butan-1-ol

Fish toxicity, LC50, Pimephales promelas (fathead minnow): 1376 mg/L (96 h)  
Daphnia toxicity, EC50, Daphnia magna: 1328 mg/L (48 h)  
Algae toxicity, EC50, Selenastrum capricornutum: 225 mg/L (96 h)  
Bacteria toxicity, EC10, Pseudomonas putida: 2476 mg/L (17 h)

##### Ethyl acetate

Fish toxicity, LC50, Pimephales promelas (fathead minnow): 230 mg/L (96 h)  
Daphnia toxicity, EC50, Daphnia magna: 165 mg/L (48 h)  
Bacteria toxicity, EC10, Pseudomonas putida: 2900 mg/L (16 h)  
Algae toxicity, EC50, Desmodesmus subspicatus: 5600 mg/L (72 h)

##### Acetone

Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): 5540 mg/L (96 h)  
Daphnia toxicity, EC50, Daphnia magna (Big water flea): > 100 mg/L (48 h)  
Algae toxicity, ErC50, Selenastrum capricornutum: 7500 mg/L (96 h)

##### n-butyl acetate

Fish toxicity, LC50, Pimephales promelas: 18 mg/L (96 h)  
Method: OECD 203  
Daphnia toxicity, EC50, Daphnia magna (Big water flea): 44 mg/L (48 h)  
Method: OECD 202  
Algae toxicity, ErC50, Desmodesmus subspicatus: 397 mg/L (72 h)  
Method: OECD 201  
Cell proliferation inhibition test  
Bacteria toxicity, EC50: 356 mg/L (40 h)

##### Xylene

Fish toxicity, LC50, Leuciscus idus (golden orfe): 86 mg/L (96 h)

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Daphnia toxicity, EC50, Daphnia magna (Big water flea): 3,82 mg/L (48 h)

Method: OECD 202

Algae toxicity, EC50, Pseudokirchneriella subcapitata: 4,36 mg/L (73 h)

Method: OECD 201

Daphnia toxicity, EC50, Daphnia magna (Big water flea): 1 mg/L (24 h)

Method: OECD 202

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

Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): > 1000 mg/L (96 h)

Method: OECD 203

Daphnia toxicity, EC50, Daphnia magna: > 1000 mg/L (48 h)

Method: OECD 202

Algae toxicity, EC50, Pseudokirchneriella subcapitata: > 1000 mg/L

Method: OECD 201

### Long-term Ecotoxicity

Toxic to aquatic life with long lasting effects.

Butan-1-ol

Daphnia toxicity, NOEC, Daphnia magna (Big water flea): 4,1 mg/L (21 d)

Ethyl acetate

Fish toxicity, NOEC, Pimephales promelas (fathead minnow): > 9,65 mg/L (32 d)

Daphnia toxicity, NOEC, Daphnia magna (Big water flea): 2,4 mg/L (21 d)

Method: OECD 211

Algae toxicity, NOEC, Desmodesmus subspicatus: > 100 mg/L (72 h)

Method: OECD 201

Bacteria toxicity, NOEC, Pseudomonas putida: 650 mg/L (16 h)

Acetone

Daphnia toxicity, NOEC: 2212 mg/L (28 d)

n-butyl acetate

Daphnia toxicity, NOEC, Daphnia magna: 23 mg/L (21 d)

Method: OECD 211

Algae toxicity, NOEC, Pseudokirchneriella subcapitata: 105 mg/L (72 h)

Xylene

Fish toxicity, NOEC, Oncorhynchus mykiss (Rainbow trout): > 1,3 mg/L (56 d)

Daphnia toxicity, NOEC, Daphnia sp.: 0,96 mg/L (7 d)

Algae toxicity, NOEC, Pseudokirchneriella subcapitata: 0,44 mg/L (72 h)

Method: OECD 201

Bacteria toxicity, NOEC, Activated sludge: 157 mg/L (3 h)

## 12.2. Persistence and degradability

Butan-1-ol

Biodegradation: 92 % (20 d); Evaluation OECD

Readily biodegradable (according to OECD criteria)

Ethyl acetate

Biodegradation: > 70 % (20 d); Evaluation Readily biodegradable (according to OECD criteria)

Method: OECD 301D / EEC 92/69 annex V, C.4-E

Acetone

Biodegradation, Degree of elimination: 91 % (28 d); Evaluation Readily biodegradable (according to OECD criteria)

Method: OECD 301B / ISO 9439 / EEC 92/69 annex V, C.4-C

n-butyl acetate

Biodegradation: 83 % (28 d); Evaluation Readily biodegradable (according to OECD criteria)

Method: OECD 301D/ EEC 92/69/V, C.4-E

Xylene

Biodegradation: 87,8 % (28 d); Evaluation Readily biodegradable (according to OECD criteria)

Method: OECD 301F

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

Biodegradation: 80 % (28 d); Evaluation Readily biodegradable (according to OECD criteria)

Method: OECD 301F

## 12.3. Bioaccumulative potential

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Butan-1-ol  
Partition coefficient n-octanol /water (log P O/W):: 0,88

Ethyl acetate  
Partition coefficient: n-octanol/water: 0,68

Acetone  
Partition coefficient n-octanol /water (log P O/W):: -0,24

n-butyl acetate  
Partition coefficient n-octanol /water (log P O/W):: 2,3  
Method: OECD 117

Xylene  
Partition coefficient: n-octanol/water: 2,77 - 3,15

**Bioconcentration factor (BCF)**

Butan-1-ol  
Bioconcentration factor (BCF): 2,7

Ethyl acetate  
Bioconcentration factor (BCF): 30

Acetone  
Bioconcentration factor (BCF): 3

n-butyl acetate  
Bioconcentration factor (BCF): 15,3

Xylene  
Bioconcentration factor (BCF), Oncorhynchus mykiss (Rainbow trout): 25,9

**12.4. Mobility in soil**

n-butyl acetate  
Surface tension:: 61,3 mN/m  
Method: OECD 115

**12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**12.6. Endocrine disrupting properties**

No information available.

**12.7. Other adverse effects**

No information available.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Appropriate disposal / Product Recommendation**

Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Dispose of waste according to applicable legislation.

**List of proposed waste codes/waste designations in accordance with EWC**

160504\* Gases in pressure containers (including halons) containing hazardous substances  
150110\* packaging containing residues of or contaminated by dangerous substances

\*Hazardous waste according to Directive 2008/98/EC (waste framework directive).

**Appropriate disposal / Package Recommendation**

Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

**SECTION 14: Transport information**

**14.1. UN number or ID number**

UN 1950

**14.2. UN proper shipping name**

Land transport (ADR/RID): Aerosols, flammable

Sea transport (IMDG): AEROSOLS

Air transport (ICAO-TI / IATA-DGR): Aerosols, flammable

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**14.3. Transport hazard class(es)**

2.1

**14.4. Packing group**

No data available

**14.5. Environmental hazards**

Land transport (ADR/RID)

UMWELTGEFÄHRDEND

Marine pollutant

p

**14.6. Special precautions for user**

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.

Advices on safe handling: see parts 6 - 8

**Further information**

**Land transport (ADR/RID)**

Tunnel restriction code

D

**Sea transport (IMDG)**

EmS-No.

F-D, S-U

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

No transport as bulk according IBC - Code.

**SECTION 15: Regulatory information**

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

**EU legislation**

**Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]**

Category: P3a FLAMMABLE AEROSOLS

Quantity 1: 150 t / Quantity 2: 500 t

Category: E2 Hazardous to the aquatic environment in Category Chronic 2

Quantity 1: 200 t / Quantity 2: 500 t

**National regulations**

**Restrictions of occupation**

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

**15.2. Chemical Safety Assessment**

**For the following substances of this mixture a chemical safety assessment has been carried out:**

EC No. CAS No.	Designation	REACH No.
204-065-8 115-10-6	dimethyl ether	01-2119472128-37
231-175-3 7440-66-6	Zinc powder - zinc dust (stabilised)	01-2119467174-37
215-535-7 1330-20-7	Xylene	01-2119488216-32
204-658-1 123-86-4	n-butyl acetate	01-2119485493-29
205-500-4 141-78-6	Ethyl acetate	01-2119475103-46
200-662-2 67-64-1	Acetone	01-2119471330-49
231-072-3 7429-90-5	Aluminium powder (stabilised)	01-2119529243-45
918-481-9	Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2 % aromatics	01-2119457273-39
200-751-6 71-36-3	Butan-1-ol	01-2119484630-38

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## SECTION 16: Other information

### Full text of classification in section 3:

compressed gas / H280	Gases under pressure	Contains gas under pressure; may explode if heated.
Flam. Gas 1 / H220	flammable gases	Extremely flammable gas.
Aquatic Acute 1 / H400	Hazardous to the aquatic environment	Very toxic to aquatic organisms.
Aquatic Chronic 1 / H410	Hazardous to the aquatic environment	Very toxic to aquatic life with long lasting effects.
Acute Tox. 4 / H312		Harmful in contact with skin.
Acute Tox. 4 / H332	Acute toxicity (inhalative)	Harmful if inhaled.
Skin Irrit. 2 / H315	Skin corrosion/irritation	Causes skin irritation.
Eye Irrit. 2 / H319	Serious eye damage/eye irritation	Causes serious eye irritation.
STOT SE 3 / H335	STOT-single exposure	May cause respiratory irritation.
STOT RE 2 / H373	STOT-repeated exposure	May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
Asp. Tox. 1 / H304	Aspiration hazard	May be fatal if swallowed and enters airways.
Flam. Liq. 3 / H226	Flammable liquids	Flammable liquid and vapour.
STOT SE 3 / H336	STOT-single exposure	May cause drowsiness or dizziness.
Flam. Liq. 2 / H225	Flammable liquids	Highly flammable liquid and vapour.
Flam. Sol. 1 / H228	flammable solids	Flammable solid.
Acute Tox. 4 / H302	Acute toxicity (oral)	Harmful if swallowed.
Eye Dam. 1 / H318	Serious eye damage/eye irritation	Causes serious eye damage.
Acute Tox. 3 / H311		Toxic in contact with skin.
Skin Corr. 1C / H314	Skin corrosion/irritation	Causes severe skin burns and eye damage.

### Classification procedure

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Aerosol 1	Aerosol	On basis of test data.
Aerosol 1	Aerosol	On basis of test data.
Skin Irrit. 2	Skin corrosion/irritation	Calculation method.
Eye Irrit. 2	Serious eye damage/eye irritation	Calculation method.
Aquatic Chronic 2	Hazardous to the aquatic environment	Calculation method.

### Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
OEL	Occupational Exposure Limit Value
BLV	Biological Limit Value
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	Carcinogenic, Mutagenic and Reprotoxic
DIN	German Institute for Standardization / German industrial standard
DNEL	Derived No-Effect Level
EAKV	European Waste Catalogue Directive
EC	Effective Concentration
EC	European Community
EN	European Standard
IATA-DGR	International Air Transport Association – Dangerous Goods Regulations
IBC Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO-TI	International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG Code	International Maritime Code for Dangerous Goods
ISO	International Organization for Standardization
LC	Lethal Concentration
LD	Lethal Dose
MARPOL	Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OECD	Organisation for Economic Cooperation and Development
PBT	persistent, bioaccumulative, toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals

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RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	very persistent and very bioaccumulative

**Data sources**

Data arise from reference works and literature.

**Further information**

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

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in section 1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.

\* Data changed compared with the previous version