

**Safety Data Sheet**

according to UK REACH Regulation

**Silberhartlot - flussmittelummantelt**

Revision date: 26.05.2025

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

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CFH No. 52320

Product group: Zulieferprodukt  
UFI: DE00-R3YJ-T00J-W8FQ

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

Hard solder

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

Company name: CFH Löt- und Gasgeräte GmbH  
Street: Bahnhofstraße 50  
Place: D-74254 Offenau  
Telephone: +49 (0)7136 9594 0  
E-mail: Info@cfh-gmbh.de  
Contact person: Torsten Bogesch  
E-mail: Info@cfh-gmbh.de  
Internet: www.cfh-gmbh.de

Telefax: +49 (0)7136 9594 44

**1.4. Emergency telephone number:** +49(0) 551 - 1 92 40 (GIZ-Nord, 24h)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

Repr. 2; H361  
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****GB CLP Regulation****Hazard components for labelling**

Kaliummetaborat  
Kaliumpentaborat-Hydrat

**Signal word:** Warning

**Pictograms:****Hazard statements**

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

**Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P202 Do not handle until all safety precautions have been read and understood.  
P280 Wear protective gloves/protective clothing and eye protection/face protection.  
P308+P313 IF exposed or concerned: Get medical advice/attention.

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P405

Store locked up.

P501

Dispose of contents/container to an appropriate recycling or disposal facility.

### 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Relevant ingredients

| CAS No     | Chemical name                                            |              |                  | Quantity    |
|------------|----------------------------------------------------------|--------------|------------------|-------------|
|            | EC No                                                    | Index No     | REACH No         |             |
|            | Classification (GB CLP Regulation)                       |              |                  |             |
| 7440-22-4  | Silver                                                   |              |                  | 40 - < 50 % |
|            | 231-131-3                                                |              | 01-2119555669-21 |             |
| 7440-66-6  | Zink                                                     |              |                  | 20 - < 25 % |
|            | 231-175-3                                                |              | 01-2119467174-37 |             |
| 7440-50-8  | Copper                                                   |              |                  | 20 - < 25 % |
|            | 231-159-6                                                |              | 01-2119480154-42 |             |
|            | Aquatic Chronic 2; H411                                  |              |                  |             |
| 13709-94-9 | Kaliummetaborat                                          |              |                  | 5 - < 7.5 % |
|            | 237-262-2                                                |              |                  |             |
|            | Repr. 2, Eye Irrit. 2; H361 H319                         |              |                  |             |
| 12229-13-9 | Kaliumpentaborat-Hydrat                                  |              |                  | 5 - < 7.5 % |
|            | 234-371-7                                                |              | 01-2119970729-20 |             |
|            | Repr. 2; H361fd                                          |              |                  |             |
| 7789-23-3  | potassium fluoride                                       |              |                  | 1 - < 2.5 % |
|            | 232-151-5                                                | 009-005-00-2 |                  |             |
|            | Acute Tox. 3, Acute Tox. 3, Acute Tox. 3; H331 H311 H301 |              |                  |             |

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

#### Specific Conc. Limits, M-factors and ATE

| CAS No     | EC No     | Chemical name                                                                                                                    | Quantity    |
|------------|-----------|----------------------------------------------------------------------------------------------------------------------------------|-------------|
|            |           | Specific Conc. Limits, M-factors and ATE                                                                                         |             |
| 12229-13-9 | 234-371-7 | Kaliumpentaborat-Hydrat                                                                                                          | 5 - < 7.5 % |
|            |           | Repr. 2; H361fd: >= 5,2 - 100                                                                                                    |             |
| 7789-23-3  | 232-151-5 | potassium fluoride                                                                                                               | 1 - < 2.5 % |
|            |           | inhalation: ATE = 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: ATE = 300 mg/kg; oral: LD50 = 245 mg/kg |             |

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### After inhalation

Provide fresh air. Medical treatment necessary.

#### After contact with skin

Wash with plenty of water. Immediately remove any contaminated clothing, shoes or stockings. Medical treatment necessary.

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**After contact with eyes**

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist.

**After ingestion**

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

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

No information available.

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

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.  
Extinguishing powder, Water spray jet, alcohol resistant foam, Carbon dioxide (CO<sub>2</sub>)

**Unsuitable extinguishing media**

Full water jet

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

Hydrogen fluoride

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.  
Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

**6.3. Methods and material for containment and cleaning up****Other information**

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

**6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid dust formation. Do not breathe dust.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

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### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

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

#### Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations.

#### Hints on joint storage

No special measures are necessary.

### 7.3. Specific end use(s)

Hard solder

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure limits (EH40)

| CAS No    | Substance                       | ppm | mg/m <sup>3</sup> | fibres/ml | Category      | Origin |
|-----------|---------------------------------|-----|-------------------|-----------|---------------|--------|
| 7440-50-8 | Copper, dusts and mists (as Cu) | -   | 1                 |           | TWA (8 h)     | WEL    |
|           |                                 | -   | 2                 |           | STEL (15 min) | WEL    |
| 7440-22-4 | Silver, metallic                | -   | 0.1               |           | TWA (8 h)     | WEL    |

### 8.2. Exposure controls



#### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

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

##### Eye/face protection

Wear eye protection/face protection.

##### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

##### Skin protection

Use of protective clothing.

##### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

## SECTION 9: Physical and chemical properties

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

|                 |           |
|-----------------|-----------|
| Physical state: | solid     |
| Colour:         | various   |
| Odour:          | odourless |

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|                                                           |                                                                                                  |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Melting point/freezing point:                             | not determined                                                                                   |
| Boiling point or initial boiling point and boiling range: | not determined                                                                                   |
| Flammability:                                             | not determined                                                                                   |
|                                                           | not applicable                                                                                   |
| Lower explosion limits:                                   | not determined                                                                                   |
| Upper explosion limits:                                   | not determined                                                                                   |
| Flash point:                                              | not applicable                                                                                   |
| Auto-ignition temperature:                                | not determined                                                                                   |
| Decomposition temperature:                                | not determined                                                                                   |
| pH-Value:                                                 | not determined                                                                                   |
| Viscosity / kinematic:                                    | not determined                                                                                   |
| Water solubility:                                         | The study does not need to be conducted because the substance is known to be insoluble in water. |
| Solubility in other solvents                              |                                                                                                  |
| not determined                                            |                                                                                                  |
| Partition coefficient n-octanol/water:                    | not determined                                                                                   |
| Vapour pressure:                                          | not determined                                                                                   |
| Density:                                                  | not determined                                                                                   |
| Relative vapour density:                                  | not determined                                                                                   |
| Particle characteristics:                                 | not determined                                                                                   |

#### 9.2. Other information

##### Information with regard to physical hazard classes

##### Explosive properties

The product is not: Explosive.

##### Self-ignition temperature

Solid:

not determined

Gas:

not applicable

##### Oxidizing properties

The product is not: oxidising.

##### Other safety characteristics

Evaporation rate:

not determined

Solid content:

not determined

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

No known hazardous reactions.

### 10.4. Conditions to avoid

none

### 10.5. Incompatible materials

No information available.

### 10.6. Hazardous decomposition products

No known hazardous decomposition products.

## SECTION 11: Toxicological information

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#### 11.1. Information on hazard classes as defined in GB CLP Regulation

##### Acute toxicity

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

##### ATEmix tested

|            | Dose        | Species | Source |
|------------|-------------|---------|--------|
| LD50, oral | 10814 mg/kg | Rat     |        |

##### ATEmix calculated

ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

| CAS No    | Chemical name        |                |         |        |        |
|-----------|----------------------|----------------|---------|--------|--------|
|           | Exposure route       | Dose           | Species | Source | Method |
| 7789-23-3 | potassium fluoride   |                |         |        |        |
|           | oral                 | LD50 245 mg/kg | Rat     |        |        |
|           | dermal               | ATE 300 mg/kg  |         |        |        |
|           | inhalation vapour    | ATE 3 mg/l     |         |        |        |
|           | inhalation dust/mist | ATE 0,5 mg/l   |         |        |        |

##### Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

##### Sensitising effects

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

##### Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging fertility or the unborn child. (Kaliummetaborat; Kaliumpentaborat-Hydrat)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

##### STOT-single exposure

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

##### STOT-repeated exposure

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

##### Aspiration hazard

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

##### Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

#### 11.2. Information on other hazards

##### Endocrine disrupting properties

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

### SECTION 12: Ecological information

#### 12.1. Toxicity

The product is not: Ecotoxic.

#### 12.2. Persistence and degradability

The product has not been tested.

#### 12.3. Bioaccumulative potential

The product has not been tested.

#### 12.4. Mobility in soil

The product has not been tested.

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

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

The product has not been tested.

#### 12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

#### 12.7. Other adverse effects

No information available.

#### Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

##### List of Wastes Code - residues/unused products

060314 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

##### Contaminated packaging

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself. Dispose of waste according to applicable legislation.

### SECTION 14: Transport information

#### Land transport (ADR/RID)

##### 14.1. UN number or ID number:

No dangerous good in sense of these transport regulations.

##### 14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

##### 14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

##### 14.4. Packing group:

No dangerous good in sense of these transport regulations.

#### Inland waterways transport (ADN)

##### 14.1. UN number or ID number:

No dangerous good in sense of these transport regulations.

##### 14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

##### 14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

##### 14.4. Packing group:

No dangerous good in sense of these transport regulations.

#### Marine transport (IMDG)

##### 14.1. UN number or ID number:

No dangerous good in sense of these transport regulations.

##### 14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

##### 14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

##### 14.4. Packing group:

-

#### Air transport (ICAO-TI/IATA-DGR)

##### 14.1. UN number or ID number:

No dangerous good in sense of these transport regulations.

##### 14.2. UN proper shipping name:

No dangerous good in sense of these transport regulations.

##### 14.3. Transport hazard class(es):

No dangerous good in sense of these transport regulations.

##### 14.4. Packing group:

-

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:

No

Danger releasing substance:

No dangerous good in sense of these transport regulations.

#### 14.6. Special precautions for user

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No dangerous good in sense of these transport regulations.

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

No dangerous good in sense of these transport regulations.

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to Directive  
2012/18/EU (SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

**National regulatory information**

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

2 - obviously hazardous to water

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 5,9,14.

**Abbreviations and acronyms**

Acute Tox: Acute toxicity

Eye Irrit: Eye irritation

Repr: Reproductive toxicity

Aquatic Chronic: Chronic aquatic hazard

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

LL50: Lethal loading, 50%

EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container

SVHC: Substance of Very High Concern

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

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**Classification for mixtures and used evaluation method according to GB CLP Regulation**

|                         |                          |
|-------------------------|--------------------------|
| Classification          | Classification procedure |
| Repr. 2; H361           | Calculation method       |
| Aquatic Chronic 3; H412 | Calculation method       |

**Relevant H and EUH statements (number and full text)**

|        |                                                                          |
|--------|--------------------------------------------------------------------------|
| H301   | Toxic if swallowed.                                                      |
| H311   | Toxic in contact with skin.                                              |
| H319   | Causes serious eye irritation.                                           |
| H331   | Toxic if inhaled.                                                        |
| H361   | Suspected of damaging fertility or the unborn child.                     |
| H361fd | Suspected of damaging fertility. Suspected of damaging the unborn child. |
| H411   | Toxic to aquatic life with long lasting effects.                         |
| H412   | Harmful to aquatic life with long lasting effects.                       |

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

*(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*