# Safety data sheet
# according to Regulation (EC) No 1907/2006, Annex II

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

### 1.1 Product identifier

**Ag-Cu-Zn-Sn**
**BrazeTec 5600**
**BrazeTec 5600SI**
**BrazeTec 5507**
**BrazeTec 5507SI**
**BrazeTec 4576**
**BrazeTec 4576SI**
**BrazeTec 4076**
**BrazeTec 4076 Si**
**BrazeTec 3876**
**BrazeTec 3476**
**BrazeTec 3476SI**
**BrazeTec 3076**
**BrazeTec 2576**

### 1.2 Relevant identified uses of the substance or mixture and uses advised against
**Relevant identified uses of the substance or mixture:**
Brazing alloy
Sector of use [SU]:
SU10 - Formulation (mixing) of preparations and/or re-packaging (excluding alloys)
SU15 - Manufacture of fabricated metal products, except machinery and equipment
Chemical product category [PC]:
PC38 - Welding and soldering products (with flux coatings or flux cores.), flux products
Process category [PROC]:
PROC 5 - Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)
PROC14 - Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature
PROC25 - Other hot work operations with metals
Environmental Release Category [ERC]:
ERC 2 - Formulation of preparations
ERC 5 - Industrial use resulting in inclusion into or onto a matrix
**Uses advised against:**
No information available at present.

### 1.3 Details of the supplier of the safety data sheet
Umicore AG&Co.KG, Business Unit Technical Materials, BusinessLine BrazeTec, Rodenbacher Chaussee 4, D-63457 Hanau-Wolfgang
Telephone +49 (6181) 59-02, Fax +49 (6181) 59-3107
www.BrazeTec.com info@BrazeTec.de

E-mail address of the competent person: info@chemical-check.de, k.schnurbusch@chemical-check.de

### 1.4 Emergency telephone
**Advisory office in case of poisoning:**
+49 (0)30 / 19240 (Berlin)
**Telephone number of the company in case of emergencies:**

Tel.: Europe, Central- and South America, Israel and Africa : +32 3 213 15 70
Middle East(Israel excluded) and Arabic speaking Africa: +32 3 213 33 79
USA & Canada: 1-877 986 4267
ASIA(China excluded): +65 62 64 78 36
CHINA: 400 88 71 190

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

### 2.1.1 Classification according to Regulation (EC) 1272/2008 (CLP)

Not determined

### 2.1.2 Classification according to Directives 67/548/EEC and 1999/45/EC (including amendments).

The mixture is not classified as dangerous in the terms of the directive 1999/45/EC.

### 2.2 Label elements

### 2.2.1 Labeling according to Regulation (EC) 1272/2008 (CLP)

Not determined

### 2.2.2 Labeling according to Directives 67/548/EEC and 1999/45/EC (including amendments).

Symbols: Not applicable
Indications of danger: ---

R-phrases:

S-phrases:

Additions:
Safety data sheet available for professional user on request.

### 2.3 Other hazards

The mixture contains no vPvB substance (vPvB = very persistent, very bioaccumulative).
The mixture contains no PBT substance (PBT = persistent, bioaccumulative, toxic).
In the event of contact with the hot product:
Danger of burns

## SECTION 3: Composition/information on ingredients

### 3.1 Substance

n.a.

### 3.2 Mixture

| **Silver** | Substance for which an EU exposure limit value applies. |
|---|---|
| **Registration number (ECHA)** | - |
| **Index** | --- |
| **EINECS, ELINCS** | 231-131-3 |
| **CAS** | CAS 7440-22-4 |
| **content %** | 24-57 |
| **Symbol** | --- |
| **R-phrases** | --- |
| **Classification categories / Indications of danger** | --- |
| **Hazard class/Hazard category** | **Hazard statement** |
| | |

| **Copper** | |
|---|---|
| **Registration number (ECHA)** | - |
| **Index** | --- |
| **EINECS, ELINCS** | 231-159-6 |

| | |
|---|---|
| **CAS** | CAS 7440-50-8 |
| **content %** | 18-41 |
| **Symbol** | --- |
| **R-phrases** | --- |
| **Classification categories / Indications of danger** | --- |
| **Hazard class/Hazard category** | **Hazard statement** |
| | |

| **Zinc** | |
|---|---|
| **Registration number (ECHA)** | - |
| **Index** | --- |
| **EINECS, ELINCS** | 231-175-3 |
| **CAS** | CAS 7440-66-6 |
| **content %** | 15-35 |
| **Symbol** | --- |
| **R-phrases** | --- |
| **Classification categories / Indications of danger** | --- |
| **Hazard class/Hazard category** | **Hazard statement** |
| | |

| **Tin** | |
|---|---|
| **Registration number (ECHA)** | - |
| **Index** | --- |
| **EINECS, ELINCS** | 231-141-8 |
| **CAS** | CAS 7440-31-5 |
| **content %** | 1,5-5,5 |
| **Symbol** | --- |
| **R-phrases** | --- |
| **Classification categories / Indications of danger** | --- |
| **Hazard class/Hazard category** | **Hazard statement** |
| | |

| **Silicon** | |
|---|---|
| **Registration number (ECHA)** | - |
| **Index** | --- |
| **EINECS, ELINCS** | 231-130-8 |
| **CAS** | CAS 7440-21-3 |
| **content %** | 0,01-0,4 |
| **Symbol** | --- |
| **R-phrases** | --- |
| **Classification categories / Indications of danger** | --- |
| **Hazard class/Hazard category** | **Hazard statement** |
| | |

For the text of the R-phrases / H-phrases and classification codes (GHS/CLP), see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

### Inhalation

During processing:
Supply person with fresh air.
Supply person with fresh air and consult doctor according to symptoms.

### Skin contact

In the event of contact with the hot product:
Wash off with cold water.
Do not attempt to remove hardened product.

### Eye contact

In the event of contact with the hot product:

Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

### Ingestion

n.a.

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

Where relevant delayed occuring symptomes and effects will be found in section 11. or at the exposure routes under section 4.1.
Hazardous gasses are set free when processing product.

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

n.c.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

### Suitable extinguishing media

Adapt to the nature and extent of fire.
If applicable
Metal fire extinguisher

### Unsuitable extinguishing media

n.c.

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

In case of fire the following can develop:
Fume
Irritating gases

### 5.3 Advice for firefighters

Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary
Dispose of contaminated extinction water according to official regulations.

## SECTION 6: Accidental release measures

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

No special measures required.

### 6.2 Environmental precautions

Prevent from entering drainage system.

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

Pick up mechanically and dispose of according to Section 13.

### 6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

## SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

### 7.1 Precautions for safe handling

Suction measures at the workplace or on the processing machines required.
Do not inhale dust/fume/mist.
Observe directions on label and instructions for use.
General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

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

Store product closed and only in original packing.
Not to be stored in gangways or stair wells.

### 7.3 Specific end use(s)

No information available at present.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

| GB | Chemical Name | Silver | Content %:24-57 |
|---|---|---|---|
| WEL-TWA: 0,1 mg/m3 (metallic) (WEL, EC) | WEL-STEL: --- | --- | |
| BMGV: --- | Other information: --- | | |

| M | Chemical Name | Silver | Content %:24-57 |
|---|---|---|---|
| OELV-8h: 0,01 mg/m3 (soluble compounds as AG) (OELV-8h), 0,1 mg/m3 (metallic) (OELV-8h, EC) | OELV-ST: --- | --- | |
| BMGV: --- | Other information: --- | | |

| GB | Chemical Name | Copper | Content %:18-41 |
|---|---|---|---|
| WEL-TWA: 1 mg/m3 (dusts and mists, as Cu) | WEL-STEL: 2 mg/m3 (dusts and mists, as Cu) | --- | |
| BMGV: --- | Other information: --- | | |

| M | Chemical Name | Tin | Content %:1,5-5,5 |
|---|---|---|---|
| OELV-8h: 2 mg/m3 (tin (inorganic compounds as Sn) | OELV-ST: --- | --- | |
| BMGV: --- | Other information: --- | | |

| GB | Chemical Name | Silicon | Content %:0,01-0,4 |
|---|---|---|---|
| WEL-TWA: 10 mg/m3 (total inh. dust), 4 mg/m3 (res. dust) | WEL-STEL: --- | --- | |
| BMGV: --- | Other information: --- | | |

GB WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

M OELV-8h = Occupational Exposure Limit Value - 8 h (8-hour reference period as a time-weighted average) | OELV-ST = Occupational Exposure Limit Value - Short-term (15-minute reference period) | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Skin = Possibility of a significant uptake through the skin.

### 8.2 Exposure controls
### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.

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

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection: Normally not necessary.
During processing:
Tight fitting protective goggles with side protection (EN 166).

| | |
|---|---|
| Skin protection - Hand protection:<br>During processing:<br>Leather gloves | Normally not necessary. |
| Skin protection - Other: | Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments) |
| Respiratory protection:<br>During processing:<br>Filter P 2 EN 143 | Normally not necessary. |

Thermal hazards:
If applicable, these are included in the individual protective measures (eye/face protection, skin protection, respiratory protection).

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

### 8.2.3 Environmental exposure controls
No information available at present.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state: | Solid |
| Colour: | Yellow |
| Odour: | Odourless |
| Odour threshold: | Not determined |
| pH-value: | Not determined |
| Melting point/freezing point: | 620-760 °C |
| Initial boiling point and boiling range: | Not determined |
| Flash point: | Not determined |
| Evaporation rate: | Not determined |
| Flammability (solid, gas): | Not determined |
| Lower explosive limit: | Not determined |
| Upper explosive limit: | Not determined |
| Vapour pressure: | Not determined |
| Vapour density (air = 1): | Not determined |
| Density: | 8,8-9,5 g/cm3 |
| Bulk density: | Not determined |
| Solubility(ies): | Not determined |
| Water solubility: | Not determined |
| Partition coefficient (n-octanol/water): | Not determined |
| Auto-ignition temperature: | Not determined |
| Decomposition temperature: | Not determined |
| Viscosity: | Not determined |
| Explosive properties: | Not determined |
| Oxidising properties: | Not determined |

### 9.2 Other information

| | |
|---|---|
| Miscibility: | Not determined |
| Fat solubility / solvent: | Not determined |
| Conductivity: | Not determined |
| Surface tension: | Not determined |
| Solvents content: | Not determined |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
See also Subsection 10.4 to 10.6.
The product has not been tested.

### 10.2 Chemical stability
See also Subsection 10.4 to 10.6.
Stable with proper storage and handling.

### 10.3 Possibility of hazardous reactions
See also Subsection 10.4 to 10.6.

### 10.4 Conditions to avoid
See also section 7.
Strong heat

### 10.5 Incompatible materials
See also section 7.
Avoid contact with strong oxidizing agents.
Avoid contact with strong acids.
Avoid contact with strong alkalis.

### 10.6 Hazardous decomposition products
See also Subsection 10.4 to 10.6.
See also section 5.2

## SECTION 11: Toxicological information

No classification according to calculation procedure.

| **Ag-Cu-Zn-Sn** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity/effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | | | | | | n.d.a. |
| Acute toxicity, by dermal route: | | | | | | n.d.a. |
| Acute toxicity, by inhalation: | | | | | | n.d.a. |
| Skin corrosion/irritation: | | | | | | n.d.a. |
| Serious eye damage/irritation: | | | | | | n.d.a. |
| Respiratory or skin sensitisation: | | | | | | n.d.a. |
| Germ cell mutagenicity: | | | | | | n.d.a. |
| Carcinogenicity: | | | | | | n.d.a. |
| Reproductive toxicity: | | | | | | n.d.a. |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | n.d.a. |
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | | | | n.d.a. |
| Aspiration hazard: | | | | | | n.d.a. |
| Respiratory tract irritation: | | | | | | n.d.a. |
| Repeated dose toxicity: | | | | | | n.d.a. |
| Symptoms: | | | | | | n.d.a. |

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

| | | | | | | |
|---|---|---|---|---|---|---|
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant |
| Serious eye damage/irritation: | | | | Rabbit | | Not irritant |

| **Copper** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity/effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Skin corrosion/irritation: | | | | | | Not irritant |
| Serious eye damage/irritation: | | | | | | Not irritant |
| Respiratory or skin sensitisation: | | | | | | Not sensitizising |
| Symptoms: | | | | | | abdominal pain, vomiting, weight loss, headaches, metal fume fever |

| **Zinc** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity/effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Acute toxicity, by oral route: | LD50 | >2000 | mg/kg | Rat | | |
| Acute toxicity, by inhalation: | LD50 | >5,41 | mg/l/4h | Rat | | |
| Symptoms: | | | | | | respiratory distress, chest pain (thorax pain), fever, joint pain, heart/circulatory disorders, coughing, metal fume fever, muscle pains, mucous membrane irritation, chills, nausea and vomiting. |

| **Silicon** | | | | | | |
|---|---|---|---|---|---|---|
| **Toxicity/effect** | **Endpoint** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Symptoms: | | | | | | gastrointestinal disturbances |

## SECTION 12: Ecological information

| **Ag-Cu-Zn-Sn** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Toxicity/effect** | **Endpoint** | **Time** | **Value** | **Unit** | **Organism** | **Test method** | **Notes** |
| Toxicity to fish: | | | | | | | n.d.a. |
| Toxicity to daphnia: | | | | | | | n.d.a. |
| Toxicity to algae: | | | | | | | n.d.a. |
| Persistence and degradability: | | | | | | | n.d.a. |
| Bioaccumulative potential: | | | | | | | n.d.a. |
| Mobility in soil: | | | | | | | n.d.a. |
| Results of PBT and vPvB assessment | | | | | | | n.d.a. |
| Other adverse effects: | | | | | | | n.d.a. |

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

### For the substance / mixture / residual amounts

EC disposal code no.:
The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2001/118/EC, 2001/119/EC, 2001/573/EC)
12 01 04 non-ferrous metal dust and particles
17 04 07 mixed metals
Recommendation:
Pay attention to local and national official regulations
E.g. dispose at suitable refuse site.
Implement substance recycling.

### For contaminated packing material

Pay attention to local and national official regulations

## SECTION 14: Transport information

### General statements

| | |
|---|---|
| UN number: | n.a. |

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

| | |
|---|---|
| UN proper shipping name: | |
| Transport hazard class(es): | n.a. |
| Packing group: | n.a. |
| Classification code: | n.a. |
| LQ (ADR 2011): | n.a. |
| LQ (ADR 2009): | n.a. |
| Environmental hazards: | Not applicable |
| Tunnel restriction code: | |

### Transport by sea (IMDG-code)

| | |
|---|---|
| UN proper shipping name: | |
| Transport hazard class(es): | n.a. |
| Packing group: | n.a. |
| Marine Pollutant: | n.a |
| Environmental hazards: | Not applicable |

### Transport by air (IATA)

| | |
|---|---|
| UN proper shipping name: | |
| Transport hazard class(es): | n.a. |
| Packing group: | n.a. |
| Environmental hazards: | Not applicable |

### Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Non-dangerous material according to Transport Regulations.

### Additional information:

Non-dangerous material according to Transport Regulations.

## SECTION 15: Regulatory information

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

For classification and labelling see Section 2.

| | |
|---|---|
| Observe restrictions: | n.a. |

### 15.2 Chemical safety assessment

No information available at present.

## SECTION 16: Other information

These details refer to the product as it is delivered.

Revised sections: n.a.
BGV D1 (VBG 15)

## Legend:

n.a. = not applicable / n.v., n.av. = not available / n.g., n.c. = not checked / k.D.v., n.d.a. = no data available
WEL = Workplace Exposure Limit EH40, TWA = Long-term exposure limit (8-hour TWA (= time weighted average) reference period), STEL = Short-terme exposure limit (15-minute reference period) / BMGV = Biological monitoring guidance value EH40
AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany) / BGW = "Biologischer Grenzwert" (biological limit value, Germany)
VbF = Regulations for flammable liquids (Austria)
VOC = Volatile organic compounds
AOX = Adsorbable organic halogen compounds
ATE = Acute Toxicity Estimates according to Regulation (EC) 1272/2008 (CLP)

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.
These statements were made by:

**Chemical Check GmbH, Wöbbeler Straße 2-4, D-32839 Steinheim, Tel.: +49 5233 94 17 0, +49 1805-CHEMICAL / +49 180 52 43 642, Fax: +49 5233 94 17 90, +49 180 50 50 455**