

SAFETY DATA SHEET (91/155/EWG)**Microbond softsolder PbSn10Ag2; PbSn5Ag2.5; PbSn5Ag1.5;
PbSn2Ag2.5; PbSn1Ag1.5**

| | | | |
|---------------|--------|---------------|--------------|
| Material no. | | Version | 1.5 / REG_EU |
| Specification | 137005 | Revision date | 10.09.2005 |
| VA-Nr | | Print Date | 26.10.2005 |
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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product information**

| | | |
|---------------------------------------|---|--|
| Trade name | : | Microbond softsolder PbSn10Ag2; PbSn5Ag2.5; PbSn5Ag1.5; PbSn2Ag2.5; PbSn1Ag1.5 |
| Company | : | Umicore AG & Co. KG OS - RC Produktsicherheit Postfach 1351 Rodenbacher Chaussee 4 D-63403 Hanau-Wolfgang |
| Telephone | : | +49 (0)6181 59-6951 |
| Telefax | : | +49 (0)6181 59-3636 |
| Emergency telephone number | : | +49 (0)69 305-6420 |
| Use of the Substance / Preparation | : | For industrial use |

2. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

alloy

Information on ingredients / Hazardous components

- **alloy PbAgSn** >= 60% - <= 100%
CAS-No. Repr.Cat.1; R61
Repr.Cat.3; R62
Xn; R20/22
R33
N; R50, R53

See chapter 16 for text of risk phrases

3. HAZARDS IDENTIFICATION

Harmful by inhalation and if swallowed.
Danger of cumulative effects.
May cause harm to the unborn child.
Possible risk of impaired fertility.

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4. FIRST AID MEASURES

General advice

Move out of dangerous area.
Place person on side in stable position if unconscious.
Employ artificial respiration if breathing ceases.

Inhalation

Take affected persons out into the fresh air.
If symptoms persist, call a physician.

Skin contact

Upon skin contact, wash with plenty of water.

Eye contact

Rinse immediately with plenty of water for at least 15 minutes.
In case of persistent discomfort: Consult an ophthalmologist.

Ingestion

Have patient drink plenty of water in small sips.
Call a physician immediately.
Do not induce vomiting.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

All extinguishing substances suitable.

Specific hazards during fire fighting

May be released in case of fire: lead compounds.

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Water used to extinguish fire should not enter drainage systems, soil, or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities.

Retention of fire-extinguishing water in Germany: see FireExtinguishing Water Retention Directive "LoeRueRL":

Fire residues should be disposed of in accordance with the regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Keep people away from and upwind of spill/leak.

Environmental precautions

Dispose of sewage water in accordance with the regulations.
Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.

Methods for cleaning up

Use mechanical handling equipment.

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Collect in suitable containers.
Avoid dust formation.

7. HANDLING AND STORAGE**Handling****Safe handling advice**

The product should only be handled by trained personnel.
Ensure suitable suction/aeration at the work place and with operational machinery.
When processing the product, the air in the workplace should be regularly monitored and employees exposed to the product should be given a regular medical check-up.

Storage**Requirements for storage areas and containers**

Keep container dry and tightly sealed - even empties.
Keep away from food, drink and animal feedingstuffs.
Please note: TRGS 514 "Store very toxic and toxic substances packed and in mobile containers".

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Components with workplace control parameters****• Silver**

| | | | |
|--------------------|------------------------|--------|--------------------------------------|
| CAS-No. | 7440-22-4 | EC-No. | 231-131-3 |
| Control parameters | 0,1 mg/m ³ | | Time Weighted Average (TWA):(EU ELV) |
| Control parameters | 0,01 mg/m ³ | | Time Weighted Average (TWA):(PT OEL) |

• Lead

| | | | |
|--------------------|------------------------|--------|---------------------------------------|
| CAS-No. | 7439-92-1 | EC-No. | 231-100-4 |
| Control parameters | 0,15 mg/m ³ | | Time Weighted Average (TWA):(EU HCA1) |
| Control parameters | 70 µg Pb/100 ml blood | | Biological Limit Value:(EU HCA2) |

• Tin

| | | | |
|--------------------|---------------------|--------|--------------------------------------|
| CAS-No. | 7440-31-5 | EC-No. | 231-141-8 |
| Control parameters | 2 mg/m ³ | | Time Weighted Average (TWA):(EU ELV) |

Personal protective equipment**Respiratory protection**

If dust occurs: Respirator with P3 particle filter
If large amounts are released:
self-contained breathing apparatus
If the limits at the workplace are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

Hand protection

Wear suitable gloves.
Glove material nitrile rubber
Material thickness 0,35 mm

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The information is based on our own tests, references from the literature and information from glove manufacturers, or derived by analogy with similar materials.

Selection of protective gloves to meet the requirements of specific workplaces.

Suitability for specific workplaces should be clarified with protective glove manufacturers.

The material thickness and rupture time data do not apply to non-solute solids / dusts.

Eye protection

safety goggles with side-shields.

Skin and body protection

chemical protective suit or disposable protective clothing

Hygiene measures

If the limits at the workplace are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

Smoking, eating and drinking should be prohibited in the application area.

Avoid contact with skin, eyes, and clothing. Do not breathe dust.

Immediately change moistened and saturated work clothes.

Keep working clothes separately.

preventive skin protection

Protective measures

All precautionary measures indicated have to be observed.

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

| | |
|--------|------------|
| Form | wire, tape |
| Colour | dark grey |
| Odour | odourless |

Safety data

| | |
|---|------------------------------------|
| pH | not determined |
| Melting point/range | ca. 284 - 309 °C |
| Flash point | not applicable |
| Flammability | not determined |
| Ignition temperature | not determined |
| Autoinflammability | not determined |
| Oxidizing properties | See chapter 10 |
| Explosiveness | no data available |
| Vapour pressure | not determined |
| Density | ca. 10,8 - 11,32 g/cm ³ |
| Partition coefficient (n-octanol/water) | not determined |

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Viscosity, dynamic not applicable

10. STABILITY AND REACTIVITY

Conditions to avoid Avoid contact with acids.

Hazardous decomposition products Lead vapours at high temperatures., metal oxides, Metallic vapours

11. TOXICOLOGICAL INFORMATION

No results of animal experiments with the product available.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Physico-chemical removability May be separated mechanically in waste water plants.

Behaviour in environmental compartments

Ecotoxicity effects

Ecotoxicological tests with this preparation are not available.

13. DISPOSAL CONSIDERATIONS

Product

Implement a recycling procedure for the recovery of precious metals taking account of local authority regulations. Rest quantities and solutions that cannot be re-used are to be taken to a recognised disposal company.

Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities.

Waste Key Number

No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer., The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority.

14. TRANSPORT INFORMATION

Transport/further information

Not classified as dangerous in the meaning of transport regulations.

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15. REGULATORY INFORMATION**Labelling according to EC Directives****hazard-defining component(s)**

- Lead

| | | |
|-------------|---|---|
| Symbol(s) | T | Toxic |
| R-phrase(s) | R20/22 R33 R61 R62 | Harmful by inhalation and if swallowed. Danger of cumulative effects. May cause harm to the unborn child. Possible risk of impaired fertility. |
| S-phrase(s) | S13 S46 S53 S60 S61 | Keep away from food, drink and animal feedingstuffs. If swallowed, seek medical advice immediately and show this container or label. Avoid exposure - obtain special instructions before use. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets. |

National legislation

| | |
|--------------------------------|--|
| employment restriction | Note employment restrictions for pregnant and lactating women. Note employment restrictions for minors. |
| Prohibited Chemicals Ordinance | Observe ordinance on chemical bans. |

16. OTHER INFORMATION**Risk phrase (R phrase) texts**

- alloy PbAgSn

| | |
|--------|---|
| R61 | May cause harm to the unborn child. |
| R62 | Possible risk of impaired fertility. |
| R20/22 | Harmful by inhalation and if swallowed. |
| R33 | Danger of cumulative effects. |
| R50 | Very toxic to aquatic organisms. |
| R53 | May cause long-term adverse effects in the aquatic environment. |

Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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