1 Identification

1.1 Product identifier
- Trade name: Wieland S28

1.2 Relevant identified uses of the substance or mixture and uses advised against
- No further relevant information available.
- Application of the substance / the preparation: Semi-finished product

1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Wieland-Werke AG
  Graf-Arco-Straße 36
  89079 Ulm (Germany)
  Tel.: +49 (0)731/944-0
  Fax: +49 (0)731/944-2799
- Information department: Department testing laboratories
  michael.ebner@wieland.de
- Emergency telephone number: Factory security offices
  Phone: +49 (0) 731-944-3706

2 Hazard(s) identification

2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008 (CLP-Regulation):
  The product is not classified according to the CLP regulation.

2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008: Void
- Hazard pictograms: Void
- Signal word: Void
- Hazard-determining components of labeling: Void
- Hazard statements: Void

2.3 Other hazards
- Semi-finished products from copper or copper-alloys, as offered for sale as manufactured present no health hazard to man or for the aquatic environment.
- Results of PBT and vPvB assessment
- PBT: Not applicable to metals
- vPvB: Not applicable to metals.

3 Composition/information on ingredients

3.2 Chemical characterization: Mixtures
- Description: Metal in compact form.
- UNS-number: C44300
- Information:
  The classifications mentioned below reflect the respective pure substance and are for information only.
  Copper alloys are special preparations according to Regulation (EC) 1907/2006 (REACH Regulation).
  The classification of a pure substance is not applicable to its use as element of a copper alloy.

(Contd. on page 2)
Trade name: Wieland S28

- Components:

<table>
<thead>
<tr>
<th>CAS: 7440-50-8</th>
<th>copper</th>
<th>70-72.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-159-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: GL 5325000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7440-31-5</th>
<th>tin</th>
<th>0.9-1.3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-141-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: XP 7320000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7440-66-6</th>
<th>zinc</th>
<th>balance%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-175-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: ZG 8600000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7440-38-2</th>
<th>arsenic</th>
<th>0.02-0.06%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-148-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: CG 0525000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 First-aid measures

- 4.1 Description of first aid measures
  - General information:
    No special measures required.
  - First Aid information refer to any dust which is generated.
  - After inhalation:
    Supply fresh air and to be sure call for a doctor.
    In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact:
    Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: Rinse out mouth and then drink plenty of water.

- 4.2 Most important symptoms and effects, both acute and delayed:
  No further relevant information available.

- 4.3 Indication of any immediate medical attention and special treatment needed:
  No further relevant information available.

5 Fire-fighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents:
    Non-flammable. Use fire fighting measures that suit the environment.

- 5.2 Special hazards arising from the substance or mixture
  No further relevant information available.

- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures: Not required.

- 6.2 Environmental precautions: Not required

- 6.3 Methods and material for containment and cleaning up:
  Dispose of the collected material according to regulations.

- 6.4 Reference to other sections:
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
7 Handling and storage

· 7.1 **Precautions for safe handling:** No special measures required.
  · Information about protection against explosions and fires: No special measures required.

· 7.2 **Conditions for safe storage, including any incompatibilities**
  · Storage:
    · Requirements to be met by storerooms and receptacles: No special requirements.
    · Further information about storage conditions: None.

· 7.3 **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· 8.1 **Control parameters**

  · Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-50-8 copper</td>
<td>Long-term value: 1* 0.1** mg/m³ as Cu</td>
<td>Long-term value: 1* 0.1** mg/m³ as Cu</td>
<td>Long-term value: 1* 0.2** mg/m³ as Cu</td>
</tr>
<tr>
<td></td>
<td>*dusts and mists **fume</td>
<td>*dusts and mists **fume</td>
<td>*dusts and mists **fume as Cu</td>
</tr>
<tr>
<td>7440-31-5 tin</td>
<td>Long-term value: 2 mg/m³ metal</td>
<td>Long-term value: 2 mg/m³</td>
<td>Long-term value: 2 mg/m³ metal</td>
</tr>
</tbody>
</table>

· Additional Occupational Exposure Limit Values for possible hazards during processing:

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1314-13-2 zinc oxide</td>
<td>Long-term value: 15* 5** mg/m³ *total dust **respirable fraction and fume</td>
<td>Short-term value: 10** mg/m³</td>
<td>Short-term value: 10* mg/m³</td>
</tr>
<tr>
<td></td>
<td>*dust only **fume</td>
<td>Long-term value: 5 mg/m³</td>
<td>Long-term value: 2* mg/m³ *as respirable fraction</td>
</tr>
<tr>
<td></td>
<td>Ceiling limit value: 15* mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

· Additional information: The lists that were valid during the creation were used as basis.

· **8.2 Exposure controls**

  · Personal protective equipment:
    · General protective and hygienic measures:
      Wash hands before breaks and at the end of work.
      Do not inhale dust / smoke / mist.
  
    · Breathing equipment: Use a suitable industrial gas mask when work-place-limits are exceeded.
  
    · Protection of hands:
      Protective gloves are recommended, depending upon how the semis are further processed.

(Contd. on page 4)
44.0 Eye protection: Protective goggles are recommended, depending upon how the semis are further processed.
44.0 Body protection: Wear suitable protective clothing, depending upon how the semis are further processed.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties
- General Information
  - Form: Solid
  - Color: Metallic-yellow
  - Odor: Odorless
  - Odor threshold: Not determined.

- Change in condition
  - Melting point/Melting range: 890-975 °C (1634-1787 °F) (Lit.)
  - Boiling point/Boiling range: Undetermined.

- Flash point: Not applicable.
- Danger of explosion: Product does not present an explosion hazard.
- Density at 20 °C (68 °F): 8.56 g/cm³ (71.433 lbs/gal) (Lit.)

- Solubility in / Miscibility with
  - Water: Not soluble.

9.2 Other information
No further relevant information available.

10 Stability and reactivity

10.1 Reactivity: Not applicable.
10.2 Chemical stability: Not applicable.
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions: No dangerous reactions known.
10.4 Conditions to avoid: No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Based on available data, the classification criteria are not met.
- Primary irritant effect:
  - on the skin: Based on available data, the classification criteria are not met.
  - on the eye: Based on available data, the classification criteria are not met.
- Sensitization: Based on available data, the classification criteria are not met.
- Additional toxicological information:
  - When used and handled according to specifications, the article does not have any harmful effects to our experience and the information provided to us.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
  - 7440-38-2 arsenic
12 Ecological information

- 12.1 Toxicity
  - Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability: No further relevant information available.
- 12.3 Bioaccumulative potential: No further relevant information available.
- 12.4 Mobility in soil: No further relevant information available.
- Ecotoxicological effects:
  - Remark: Very toxic for fish
- Additional ecological information
  - General notes:
    For semi-finished products in copper or copper-alloys no information regarding ecology is suitable, as it is not soluble in water.
    Very toxic for aquatic organisms
- 12.5 Results of PBT and vPvB assessment
  - PBT: Not applicable to metals.
  - vPvB: Not applicable to metals.
- 12.6 Other adverse effects: No further relevant information available.

13 Disposal considerations

- 13.1 Waste treatment methods
  - Recommendation: Contact manufacturer for recycling information.

14 Transport information

- 14.1 UN-Number
  - DOT, ADR, ADN, IMDG, IATA: Void
- 14.2 UN proper shipping name
  - DOT, ADR, ADN, IMDG, IATA: Void
- 14.3 Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA
    - Class: Void
- 14.4 Packing group
  - DOT, ADR, IMDG, IATA: Void
- 14.5 Environmental hazards:
  - Marine pollutant: No
- 14.6 Special precautions for user:
  - Not applicable.
- 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:
  - Not applicable.
15 Regulatory information

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

- Sara
  - Section 355 (extremely hazardous substances):
    None of the ingredients is listed.
  - Section 313 (Specific toxic chemical listings):
    - 7440-50-8 copper
    - 7440-66-6 zinc
    - 7440-38-2 arsenic
  - TSCA (Toxic Substances Control Act):
    All ingredients are listed.
  - Proposition 65
    - Chemicals known to cause cancer:
      - 7440-38-2 arsenic
  - Chemicals known to cause reproductive toxicity for females:
    None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for males:
    None of the ingredients is listed.
  - Chemicals known to cause developmental toxicity:
    None of the ingredients is listed.

- Cancerogenity categories
  - EPA (Environmental Protection Agency)
    - 7440-50-8 copper D
    - 7440-66-6 zinc D, I, II
    - 7440-38-2 arsenic A
  - TLV (Threshold Limit Value established by ACGIH)
    - 7440-38-2 arsenic A1
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    - 7440-38-2 arsenic
  - Chemical safety assessment void.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific article features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: Department testing laboratories
- Contact:
  - Dr. Michael Ebner
  - Phone (+)49 (0)731/944-3706
- Date of preparation / last revision 08/24/2017 / 7
- * Data compared to the previous version altered.