1 Identification

1.1 Product identifier
- Trade name: Wieland-ZC4

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

1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Wieland-Werke AG
  Graf-Arco-Str. 36
  89079 Ulm
- Information department: Associations & Management Systems
  stefan.priggemeyer@wieland.com

1.4 Emergency telephone number: +49 731 944 2794 (Monday - Friday from 9 a.m. to 4 p.m.)

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 enviroment.
- Results of PBT and vPvB assessment
  - PBT: Not applicable to metals.
  - vPvB: Not applicable to metals.

3 Composition/information on ingredients

- Description: Metal in compact form.
- Material Code (CEN/TS 13388): -
- Material number (CEN/TS 13388): -
- UNS-number: -
- Information:
  The classifications listed below reflect the classification of the relevant alloying constituents and are only for information.
  Mentioned percentages are references values.
- Components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>RTECS</th>
<th>Copper</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-50-8</td>
<td>231-159-6</td>
<td>GL 5325000</td>
<td>61%</td>
<td></td>
</tr>
</tbody>
</table>
Trade name: Wieland-ZC4

<table>
<thead>
<tr>
<th>CAS: 7440-66-6</th>
<th>EINECS: 231-175-3</th>
<th>Zinc</th>
<th>Balance%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7439-92-1</td>
<td>EINECS: 231-100-4</td>
<td>Lead</td>
<td>1.2%</td>
</tr>
<tr>
<td>CAS: 7440-02-0</td>
<td>EINECS: 231-111-4</td>
<td>Nickel</td>
<td>max. 0.3%</td>
</tr>
</tbody>
</table>

4 First-aid measures

○ 4.1 Description of first aid measures
  ∙ General information:
    First Aid information refer to any dust which is generated.
    The mixture in solid form does not pose any significant health hazard. However, melting or activities
    which produce metal dust, smoke or fumes can cause that metal dust enter the body in harmful
    amounts.
  ∙ 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

(Contd. on page 3)
Trade name: **Wieland-ZC4**

6.3 Methods and material for containment and cleaning up:
Collect the material and if necessary dispose it as waste according to section 13.

6.4 Reference to other sections:
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

7.1 Precautions for safe handling:
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: Store in dry conditions.

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

8 Exposure controls/personal protection

8.1 Control parameters
Components with limit values that require monitoring at the workplace:
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

<table>
<thead>
<tr>
<th>7439-92-1 lead</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEL</strong></td>
</tr>
<tr>
<td>Long-term value: 0.05* mg/m³</td>
</tr>
<tr>
<td>*see 29 CFR 1910.1025</td>
</tr>
<tr>
<td><strong>REL</strong></td>
</tr>
<tr>
<td>Long-term value: 0.05* mg/m³</td>
</tr>
<tr>
<td>*8-hr TWA ;See PocketGuide App.C</td>
</tr>
<tr>
<td><strong>TLV</strong></td>
</tr>
<tr>
<td>Long-term value: 0.05* mg/m³</td>
</tr>
<tr>
<td>*and inorganic compounds, as Pb; BEI</td>
</tr>
</tbody>
</table>

Ingredients with biological limit values:

7439-92-1 lead

| BEI |
| 30 µg/100 ml |
| Medium: blood |
| Time: not critical |
| Parameter: Lead |

| 10 µg/100 ml |
| Medium: blood |
| Time: not critical |
| Parameter: Lead (women of child bearing potential) |

Additional information: The lists that were valid during the creation were used as basis.
49.0

8.2 Exposure controls
· Personal protective equipment:
· General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Wash hands before breaks and at the end of work.
  Store protective clothing separately.
  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.
· Material of gloves neoprene or leather
· Eye protection:
  Protective goggles are recommended, depending upon how the semis are further processed.
· 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
  · Appearance:
    Form: Solid
    Color: Brass yellow
  · Odor: Odorless
  · Odor threshold: Not determined.
· Change in condition
  · Melting point/Melting range: 871-893 °C (1599.8-1639.4 °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): 8.43 g/cm³ (70.34835 lbs/gal)
· Solvent content:
  VOC content: 0.00 %

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

General information:
The solid product does not pose a health hazard if handled properly.

Effect on the skin: No effects.
Effect on eyes: No effects.
Sensitization: Due to the nickel content avoid direct and prolonged skin contact.

12 Ecological information

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.

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.

Waste disposal key:
12 01 03: Non-ferrous metal fillings and turnings
16 01 18: Non-ferrous metal for non-contaminated waste

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):
    All ingredients are listed.
  - TSCA (Toxic Substances Control Act):
    | CAS Number | Chemical | Status |
    |-------------|----------|--------|
    | 7440-50-8   | copper   | ACTIVE |
    | 7440-66-6   | zinc     | ACTIVE |
    | 7439-92-1   | lead     | ACTIVE |
    | 7440-02-0   | nickel   | ACTIVE |
  - Hazardous Air Pollutants:
    | CAS Number | Chemical |
    |-------------|----------|
    | 7439-92-1   | lead     |
  - Proposition 65
    - Chemicals known to cause cancer:
      | CAS Number | Chemical |
      |-------------|----------|
      | 7439-92-1   | lead     |
      | 7440-02-0   | nickel   |
    - Chemicals known to cause reproductive toxicity for females:
      | CAS Number | Chemical |
      |-------------|----------|
      | 7439-92-1   | lead     |
    - Chemicals known to cause reproductive toxicity for males:
      | CAS Number | Chemical |
      |-------------|----------|
      | 7439-92-1   | lead     |
    - Chemicals known to cause developmental toxicity:
      | CAS Number | Chemical |
      |-------------|----------|
      | 7439-92-1   | lead     |
### Trade name: Wieland-ZC4

#### Cancerogenity categories

<table>
<thead>
<tr>
<th>EPA (Environmental Protection Agency):</th>
<th>TLV (Threshold Limit Value established by ACGIH):</th>
<th>NIOSH-Ca (National Institute for Occupational Safety and Health):</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-50-8 copper</td>
<td>7439-92-1 lead</td>
<td>7440-02-0 nickel</td>
</tr>
<tr>
<td>7440-66-6 zinc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7439-92-1 lead</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7440-02-0 nickel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7439-92-1 lead</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7440-02-0 nickel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- *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: Associations & Management Systems
- Contact:
  - Dr. Stefan Priggemeyer
  - Phone +49 731 944 2794
- * Data compared to the previous version altered.