1 Identification

1.1 Product identifier
- Trade name: Wieland GD2

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
- 1.4 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):
  For products there is no obligation to classify acc. to 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

3.2 Chemical characterization: Mixtures
- Description: Metal in compact form.
- UNS-number: -
- 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 GD2

- Components:
  - CAS: 7440-50-8  EINECS: 231-159-6  RTECS: GL 5325000  copper  80.0-87.0%
  - CAS: 7439-92-1  EINECS: 231-100-4  RTECS: OF 7525000  lead  8.0-10.0%
  - CAS: 7440-31-5  EINECS: 231-141-8  RTECS: XP 7320000  tin  4.0-6.0%
  - CAS: 7440-02-0  EINECS: 231-111-4  nickel  0-2.0%

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 contaminated material as waste according to item 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.
  Open and handle receptacle with care.
  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>7440-50-8 copper</th>
<th>PEL</th>
<th>Long-term value: 1* 0.1** mg/m³ as Cu *dusts and mists **fume</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>REL</td>
<td>Long-term value: 1* 0.1** mg/m³ as Cu *dusts and mists **fume</td>
</tr>
<tr>
<td></td>
<td>TLV</td>
<td>Long-term value: 1* 0.2** mg/m³ *dusts and mists; **fume; as Cu</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>7440-31-5 tin</th>
<th>PEL</th>
<th>Long-term value: 2 mg/m³ metal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>REL</td>
<td>Long-term value: 2 mg/m³ metal</td>
</tr>
<tr>
<td></td>
<td>TLV</td>
<td>Long-term value: 2 mg/m³ metal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7440-02-0 nickel</th>
<th>PEL</th>
<th>Long-term value: 1 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>REL</td>
<td>Long-term value: 0.015 mg/m³ as Ni; See Pocket Guide App. A</td>
</tr>
<tr>
<td></td>
<td>TLV</td>
<td>Long-term value: 1.5* mg/m³ elemental, *inhalable fraction</td>
</tr>
</tbody>
</table>

(Contd. on page 4)
Trade name: Wieland GD2

- Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>7439-92-1 lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI 30 µg/100 ml</td>
</tr>
<tr>
<td>Medium: blood</td>
</tr>
<tr>
<td>Time: not critical</td>
</tr>
<tr>
<td>Parameter: Lead</td>
</tr>
<tr>
<td>10 µg/100 ml</td>
</tr>
<tr>
<td>Medium: blood</td>
</tr>
<tr>
<td>Time: not critical</td>
</tr>
<tr>
<td>Parameter: Lead (women of child bearing potential)</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:
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - 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.
- 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: copper red
  - Odor: Odorless
  - Odor threshold: Not determined.

- Change in condition
  - Melting point/Melting range: 855-1000 °C (1571-1832 °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): 8.9 g/cm³ (74.271 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.
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)

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Substance</th>
<th>Carcinogenic Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1</td>
<td>lead</td>
<td>2B</td>
</tr>
<tr>
<td>7440-02-0</td>
<td>nickel</td>
<td>2B</td>
</tr>
</tbody>
</table>

- NTP (National Toxicology Program)

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Substance</th>
<th>Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1</td>
<td>lead</td>
<td>R</td>
</tr>
<tr>
<td>7440-02-0</td>
<td>nickel</td>
<td>R</td>
</tr>
</tbody>
</table>

- OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

12.1 Toxicity

Aqueous 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.

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.

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 | Void |
| 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 |
| 7439-92-1 | lead |
| 7440-02-0 | nickel |
| TSCA (Toxic Substances Control Act): |
| All ingredients are listed. |
| Proposition 65 |
| Chemicals known to cause cancer: |
| 7439-92-1 | lead |
| 7440-02-0 | nickel |
| Chemicals known to cause reproductive toxicity for females: |
| 7439-92-1 | lead |
| Chemicals known to cause reproductive toxicity for males: |
| 7439-92-1 | lead |
| Chemicals known to cause developmental toxicity: |
| 7439-92-1 | lead |

| Cancerogenity categories |
| EPA (Environmental Protection Agency) |
| 7440-50-8 | copper | D |
| 7439-92-1 | lead | B2 |
| TLV (Threshold Limit Value established by ACGIH) |
| 7439-92-1 | lead | A3 |
Trade name: Wieland GD2

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 08/23/2017 / 6
- * Data compared to the previous version altered.