1 Identification

1.1 Product identifier
- Trade name: Wieland G36

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 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: -
- 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 G36

- Components:

<table>
<thead>
<tr>
<th>CAS: 7440-50-8</th>
<th>copper</th>
<th>55.0-66.0%</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: 7429-90-5</th>
<th>aluminium</th>
<th>1.0-3.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-072-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: BD 0330000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7439-96-5</th>
<th>manganese</th>
<th>1.0-4.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-105-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: OO 9275000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7440-02-0</th>
<th>nickel</th>
<th>0-3.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-111-4</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: 7439-89-6</th>
<th>iron</th>
<th>0.5-2.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-096-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: NO 4565500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7439-92-1</th>
<th>lead</th>
<th>0-0.3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-100-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: OF 7525000</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 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.
- **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

- **8.1 Control parameters**
  - **Components with limit values that require monitoring at the workplace**:

<table>
<thead>
<tr>
<th>Substance</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>REL</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* 0.1** mg/m³ as Cu</td>
</tr>
<tr>
<td>TLV</td>
<td>Long-term value: 1* 0.2** mg/m³ as Cu</td>
<td>Long-term value: 1* 0.2** mg/m³ as Cu</td>
<td>Long-term value: 1* 0.2** mg/m³ as Cu</td>
</tr>
</tbody>
</table>

| 7429-90-5 aluminium | Long-term value: 15*; 5** mg/m³ *Total dust; **Respirable fraction | Long-term value: 15*; 5** mg/m³ *Total dust; **Respirable fraction | Long-term value: 15*; 5** mg/m³ *Total dust; **Respirable fraction |
| REL | Long-term value: 10* 5** mg/m³ as Al*Total dust**Respirable/pyro powd./welding f. | Long-term value: 10* 5** mg/m³ as Al*Total dust**Respirable/pyro powd./welding f. | Long-term value: 10* 5** mg/m³ as Al*Total dust**Respirable/pyro powd./welding f. |
| TLV | Long-term value: 1* mg/m³ as Al; *as respirable fraction | Long-term value: 1* mg/m³ as Al; *as respirable fraction | Long-term value: 1* mg/m³ as Al; *as respirable fraction |

| 7439-96-5 manganese | Ceiling limit value: 5 mg/m³ as Mn | Short-term value: 3 mg/m³ | Long-term value: 1 mg/m³ fume, as Mn |
| PEL | Ceiling limit value: 5 mg/m³ as Mn | Short-term value: 3 mg/m³ | Long-term value: 1 mg/m³ fume, as Mn |
| REL | Short-term value: 3 mg/m³ | Long-term value: 1 mg/m³ fume, as Mn | Long-term value: 1 mg/m³ fume, as Mn |
| TLV | Long-term value: 0.02* 0.1* mg/m³ as Mn; *respirable **inhalable fraction | Long-term value: 0.02* 0.1* mg/m³ as Mn; *respirable **inhalable fraction | Long-term value: 0.02* 0.1* mg/m³ as Mn; *respirable **inhalable fraction |
Trade name: Wieland G36

7440-02-0 nickel

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

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

1314-13-2 zinc oxide

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

- 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.
  - Do not inhale dust / smoke / mist.

- Personal protective equipment:
  - 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 semi is further processed.
  - Eye protection:
    - Protective goggles are recommended, depending upon how the semi is further processed.
  - Body protection:
    - Wear suitable protective clothing, depending upon how the semi is further processed.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- General Information
  - Form: Solid
  - Color: copper red
  - Odor: Odorless
  - Odor threshold: Not determined.

- Change in condition
  - Melting point/Melting range: 860-880 °C (1580-1616 °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): 8.6 g/cm³ (71.767 lbs/gal) (Lit.)

- Solubility in / Miscibility with Water: Not soluble.
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)
      7440-02-0 nickel 2B
      7439-92-1 lead 2B
    - NTP (National Toxicology Program)
      7440-02-0 nickel R
      7439-92-1 lead R
    - OSHA-Ca (Occupational Safety & Health Administration)
      None of the ingredients is listed.

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.
- Ecotoxic 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.
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

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
  7429-90-5 aluminium
  7439-96-5 manganese
  7440-02-0 nickel
  7439-92-1 lead

- TSCA (Toxic Substances Control Act):
  All ingredients are listed.

- Proposition 65

- Chemicals known to cause cancer:
  7440-02-0 nickel
  7439-92-1 lead

- Chemicals known to cause reproductive toxicity for females:
  7439-92-1 lead

(Contd. of page 5)
### 44.0 Chemicals known to cause reproductive toxicity for males:
- 7439-92-1 lead

### 45.0 Chemicals known to cause developmental toxicity:
- 7439-92-1 lead

### Cancerogenity categories
- **EPA (Environmental Protection Agency)**
  - 7440-50-8 copper D
  - 7440-66-6 zinc D, I, II
  - 7439-96-5 manganese D
  - 7439-92-1 lead B2
- **TLV (Threshold Limit Value established by ACGIH)**
  - 7429-90-5 aluminium A4
  - 7440-02-0 nickel A5
  - 7439-92-1 lead A3
- **NIOSH-Ca (National Institute for Occupational Safety and Health)**
  - 7440-02-0 nickel

### 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 / 7
- *** Data compared to the previous version altered.**