1 Identification

1.1 Product identifier
Trade name: Wieland-GC4

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

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 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):

GHS08 Health hazard
Carc. 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.
Repr. 1A H360 May damage fertility or the unborn child.
STOT RE 1 H372 Causes damage to the respiratory system through prolonged or repeated exposure.
Route of exposure: Inhalation.

GHS07
Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements:
Labelling according to Regulation (EC) No 1272/2008:
The product is classified and labeled according to the CLP regulation.

Hazard pictograms: GHS07, GHS08
Signal word: Danger
Hazard statements:
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer. Route of exposure: Inhalation.
H360 May damage fertility or the unborn child.
H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

(Contd. on page 2)
Trade name: Wieland-GC4

P308+P313 IF exposed or concerned: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· 2.3 Other hazards
· 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 massive form.
· Material Code (CEN/TS 13388): CuSn3Zn8Pb5-C
· Material number (CEN/TS 13388): CC490K
· 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.

· Alloy components:
  CAS: 7440-50-8 copper 81.0-86.0%
  EINECS: 231-159-6
  RTECS: GL 5325000
  CAS: 7440-66-6 zinc 7.0-9.5%
  EINECS: 231-175-3
  RTECS: ZG 8600000
  CAS: 7439-92-1 lead 3.0-6.0%
  EINECS: 231-100-4
  RTECS: OF 7525000
  CAS: 7440-02-0 nickel 0-2.0%
  EINECS: 231-111-4
  RTECS: XP 7320000
  CAS: 7440-31-5 tin 2.0-3.5%
  EINECS: 231-141-8
  RTECS: XP 7320000

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.
Safety Data Sheet
acc. to OSHA HCS

Trade name: Wieland-GC4

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:
  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.
Trade name: Wieland-GC4

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

8 Exposure controls/personal protection

8.1 Control parameters

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

Components with limit values that require monitoring at the workplace:

7440-50-8 copper
PEL Long-term value: 1* 0.1** mg/m³
as Cu *dusts and mists **fume
REL Long-term value: 1* 0.1** mg/m³
as Cu *dusts and mists **fume
TLV Long-term value: 1* 0.2** mg/m³
*dusts and mists; **fume; as Cu

7439-92-1 lead
PEL Long-term value: 0.05* mg/m³
*see 29 CFR 1910.1025
REL Long-term value: 0.05* mg/m³
*8-hr TWA ;See PocketGuide App.C
TLV Long-term value: 0.05* mg/m³
*and inorganic compds., as Pb; BEI, A3

7440-02-0 nickel
PEL Long-term value: 1 mg/m³
REL Long-term value: 0.015 mg/m³
as Ni; See Pocket Guide App. A
TLV Long-term value: 1.5* mg/m³
*elemental, *inhalable fraction, A5, BEI

7440-31-5 tin
PEL Long-term value: 2 mg/m³
metal
REL Long-term value: 2 mg/m³
TLV Long-term value: 2* mg/m³
metal, *inh. fraction

Ingredients with biological limit values:

7439-92-1 lead
BEI 200 µg/L
Medium: blood
Time: not critical
Parameter: Lead

(Contd. on page 5)
Trade name: Wieland-GC4

7440-02-0 nickel
BEI 5 μg/L
  Medium: urine
  Time: post-shift at end of workweek
  Parameter: Nickel (background)

30 μg/L
Medium: urine
Time: post-shift at end of workweek
Parameter: Nickel (background)

- **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.
    - 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

<table>
<thead>
<tr>
<th>9.1 Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
</tr>
<tr>
<td>Appearance</td>
</tr>
<tr>
<td>Form: Solid</td>
</tr>
<tr>
<td>Color: Copper red</td>
</tr>
<tr>
<td>Odor: Odorless</td>
</tr>
<tr>
<td>Odor threshold: Not determined.</td>
</tr>
<tr>
<td>Change in condition</td>
</tr>
<tr>
<td>Melting point/Melting range: 830-1040 ºC (1526-1904 ºF)</td>
</tr>
<tr>
<td>Boiling point/Boiling range: Undetermined.</td>
</tr>
<tr>
<td>Flash point: Not applicable.</td>
</tr>
<tr>
<td>Danger of explosion: Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Density at 20 ºC (68 ºF): 8.9 g/cm³ (74.2705 lbs/gal)</td>
</tr>
<tr>
<td>Solubility in / Miscibility with water at 20 ºC (68 ºF): Not soluble.</td>
</tr>
</tbody>
</table>
53.1.31 · Solvent separation test
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

- 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:
  May cause an allergic skin reaction.
- 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)
    7439-92-1 lead: 2B
    7440-02-0 nickel: 2B
  - NTP (National Toxicology Program)
    7439-92-1 lead: R
    7440-02-0 nickel: R
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.
12 Ecological information

- 12.1 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.
- 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: Must not be disposed of together with household garbage. Contact manufacturer for recycling information.

14 Transport information

- 14.1 UN-Number
  - DOT, ADR, IMDG, IATA: Void
- 14.2 UN proper shipping name
  - DOT, ADR, 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:
  - Not applicable.
- 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
    7439-92-1 lead
    7440-02-0 nickel

· TSCA (Toxic Substances Control Act):
  All components have the value ACTIVE.

· Hazardous Air Pollutants:
  7439-92-1 lead

· 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
    7440-66-6 zinc: D, I, II
    7439-92-1 lead: B2
  · TLV (Threshold Limit Value established by ACGIH):
    7439-92-1 lead: A3
    7440-02-0 nickel: A5

· NIOSH-Ca (National Institute for Occupational Safety and Health):
  7440-02-0 nickel

· 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
  - Email: stefan.priggemeyer@wieland.com
- * Data compared to the previous version altered.