SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Name: Cu-Zn Alloys

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
Industrial/Professional use spec: Industrial
For professional use only
Use of the substance/mixture: Rods, plates and ingots
Intermediate for copper alloy castings.

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
ALEACIONES, PREALEACIONES Y DESOXIDANTES, SL
P.I. Pla de Llerona, Carrer Luxemburg s/n
08520 Les Franqueses del Vallés - Spain
T (+34) 93 840 49 95 - F (+34) 93 840 49 96
info@apd-fundicion.com

1.4. Emergency telephone number
Emergency number: (+34) 93 840 49 95
Office hours

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not classified

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

2.3. Other hazards
PBT: not yet assessed
vPvB: not yet assessed

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (powder/dust, &gt; 10µm and &lt;1 mm)</td>
<td>(CAS-No.) 7440-50-8 (EC-No.) 231-159-6</td>
<td>55 - 87,5</td>
<td>Aquatic Acute 1, H400 Aquatic Chronic 3, H412</td>
</tr>
<tr>
<td>Zinc powder - zinc dust (stabilised)</td>
<td>(CAS-No.) 7440-66-6 (EC-No.) 231-175-3 (EC Index-No.) 030-001-01-9</td>
<td>40 - 50</td>
<td>Aquatic Acute 1, H400 Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td>Nickel (powder &lt;1mm)</td>
<td>(CAS-No.) 7440-02-0 (EC-No.) 231-111-4 (EC Index-No.) 029-002-00-7</td>
<td>&lt;= 6</td>
<td>Skin Sens. 1, H317 Canc. 2, H351 STOT RE 1, H372 Aquatic Chronic 3, H412</td>
</tr>
</tbody>
</table>
Manganese  
substance with a Community workplace exposure limit  
(CAS-No.) 7439-96-5  
(EN-No.) 231-105-1  
<= 5  
Not classified

Lead (powder/dust <1mm)  
(CAS-No.) 7439-92-1  
(EN-No.) 231-100-4  
<= 2,8  
Repr. 1A, H360  
STOT RE 1, H372  
Aquatic Acute 1, H400  
Aquatic Chronic 1, H410

Tin (metal massive)  
substance with a Community workplace exposure limit  
(CAS-No.) 7440-31-5  
(EN-No.) 231-141-8  
<= 1,5  
Not classified

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

First-aid measures after skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Brush off loose particles from skin. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/effects: Inhalation of fumes may cause metal fume fever. Heated product causes burns.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Foam. Dry powder.

Unsuitable extinguishing media: Do not use extinguishing media containing water.

5.2 Special hazards arising from the substance or mixture

Fire hazard: In molten state: reacts violently with water (moisture).

5.3 Advice for firefighters

Precautionary measures fire: Exercise caution when fighting any chemical fire.

Firefighting instructions: Exercise caution when fighting any chemical fire.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

General measures: Take care while working with the hot material.

6.1.1 For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.

6.1.2 For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

6.2 Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters. Avoid release to the environment.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: On land, sweep or shovel into suitable containers. Collect the hardened product as any solid. Store away from other materials.

6.4 Reference to other sections


SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling: Avoid breathing fume. Upon heating, toxic fumes are formed. Provide local exhaust or general room ventilation.
**Cu-Zn Alloys**

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

<table>
<thead>
<tr>
<th>Hygiene measures</th>
<th>Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.</th>
</tr>
</thead>
</table>

### 7.2 Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Storage conditions</th>
<th>Store in a cool, well-ventilated place. Store in a dry place. Protect from moisture.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incompatible products</td>
<td>Strong bases. Strong acids.</td>
</tr>
</tbody>
</table>

### 7.3 Specific end use(s)

See section 1.

**SECTION 8: Exposure controls/personal protection**

#### 8.1 Control parameters

<table>
<thead>
<tr>
<th><strong>Copper (powder/dust, &gt;10µm and &lt;1 mm) (7440-50-8)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Local name</td>
<td>Copper</td>
</tr>
<tr>
<td>EU IOELV TWA (mg/m³)</td>
<td>0.01 mg/m³ (respirable fraction)</td>
</tr>
<tr>
<td>EU Notes</td>
<td>SCOEL Recommendations (2014)</td>
</tr>
<tr>
<td>United Kingdom Local name</td>
<td>Copper</td>
</tr>
<tr>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>0.2 mg/m³ fume (as Cu) 1 mg/m³ and compounds, dusts and mists (as Cu)</td>
</tr>
<tr>
<td>United Kingdom WEL STEL (mg/m³)</td>
<td>2 mg/m³ and compounds, dusts and mists (as Cu)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Nickel (powder &lt;1mm) (7440-02-0)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Local name</td>
<td>Nickel metal</td>
</tr>
<tr>
<td>EU IOELV TWA (mg/m³)</td>
<td>0.005 mg/m³ (respirable fraction) 0.01 mg/m³ (inhalable fraction)</td>
</tr>
<tr>
<td>EU Notes</td>
<td>SCOEL Recommendations (2011)</td>
</tr>
<tr>
<td>United Kingdom Local name</td>
<td>Nickel</td>
</tr>
<tr>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>0.1 mg/m³ and its inorganic compounds (except nickel tetracarbonyl), water-soluble nickel compounds (as Ni) 0.5 mg/m³ and its inorganic compounds (except nickel tetracarbonyl), nickel and water insoluble nickel compounds (as Ni)</td>
</tr>
<tr>
<td>United Kingdom Remark (WEL)</td>
<td>Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity), Carc (nickel oxides and sulphides)(Capable of causing cancer and/or heritable genetic damage. See paragraphs 49–51), Sen (nickel sulphate)(Capable of causing occupational asthma. See paragraphs 53–56)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Lead (powder/dust &lt;1mm) (7439-92-1)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Local name</td>
<td>Lead and its inorganic compounds</td>
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<tr>
<td>EU IOELV TWA (mg/m³)</td>
<td>100 µg/m³</td>
</tr>
<tr>
<td>EU Notes</td>
<td>SCOEL Recommendations (2002)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Tin (metal massive) (7440-31-5)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Local name</td>
<td>Tin and inorganic tin compounds</td>
</tr>
<tr>
<td>EU Notes</td>
<td>SCOEL Recommendations (2003)</td>
</tr>
<tr>
<td>United Kingdom Local name</td>
<td>Tin</td>
</tr>
<tr>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>2 mg/m³ compounds, inorganic, except SnH₄, (as Sn₄) 0.1 mg/m³ compounds, organic, except Cyhexatin (ISO), (as Sn)</td>
</tr>
<tr>
<td>United Kingdom WEL STEL (mg/m³)</td>
<td>4 mg/m³ compounds, inorganic, except SnH₄, (as Sn₄) 0.2 mg/m³ compounds, organic, except Cyhexatin (ISO), (as Sn)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Aluminium (powder stabilised) (7429-90-5)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom Local name</td>
<td>Aluminium</td>
</tr>
<tr>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>2 mg/m³ alkyl compounds 2 mg/m³ salts, soluble 10 mg/m³ metal, inhalable dust 4 mg/m³ metal, respirable dust</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Silicon (7440-21-3)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom Local name</td>
<td>Silicon</td>
</tr>
<tr>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>10 mg/m³ inhalable dust 4 mg/m³ respirable dust</td>
</tr>
</tbody>
</table>

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8.2. Exposure controls

Personal protective equipment:
Avoid all unnecessary exposure.

Hand protection:
Welders gloves (Technical Standard DIN 4841-4)

Eye protection:
For splash risk use face shield (EN 166).

Skin and body protection:
If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

Respiratory protection:
Wear appropriate mask. Filter EN 143 - P2

Personal protective equipment symbol(s):

Other information:
Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| Physical state | : Solid |
| Appearance     | : Rods, plates and ingots. |
| Colour         | : No data available |
| Odour          | : No data available |
| Odour threshold| : No data available |
| pH             | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point  | : 875 - 895 °C |
| Freezing point | : No data available |
| Boiling point  | : No data available |
| Flash point    | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Flammable solid, Metal powder |
| Vapour Pressure 20°C | : No data available |
| Vapour density  | : No data available |
| Relative density | : No data available |
| Density        | : 8.5 g/cm³ (20 °C) |
| Solubility     | : Insoluble in water |
| Log Pow        | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
### Oxidising properties
- No data available

### Explosive limits
- No data available

### Other properties
- Specific heat: 0.09 g/cm³. Thermal conductivity: 0.28-0.29 (cal·cm)/(cm²·s·°C) ((20 °C)).
- Electric conductivity: 16 mohm mm² ((20 °C)). Electrical resistivity: 0.062-0.064 ohmm²/m ((20 °C)).

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity
Stable (in terms of reactivity hazards) under recommended storage & use conditions (see Section 7).

#### 10.2. Chemical stability
Stable (in terms of chemical stability) under recommended storage & use conditions (see Section 7).

#### 10.3. Possibility of hazardous reactions
Violent to explosive reaction on exposure to temperature rise with water (moisture).

#### 10.4. Conditions to avoid
Water, humidity.

#### 10.5. Incompatible materials
Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products
Burning material releases heavy metal oxide fumes.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects
- Acute toxicity (oral) : Not classified
- Acute toxicity (dermal) : Not classified
- Acute toxicity (inhalation) : Not classified
- Skin corrosion/irritation : Not classified
- Serious eye damage/irritation : Not classified
- Respiratory or skin sensitisation : Not classified
- Germ cell mutagenicity : Not classified
- Carcinogenicity : Not classified
- Reproductive toxicity : Not classified

- STOT—single exposure : Not classified
- STOT—repeated exposure : Not classified
- Aspiration hazard : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity
- Acute aquatic toxicity : Not classified
- Chronic aquatic toxicity : Not classified

#### 12.2. Persistence and degradability
- Cu-Zn Alloys
  - Persistence and degradability : Not established.

#### 12.3. Bioaccumulative potential
- Cu-Zn Alloys
  - Bioaccumulative potential : Not established.

#### 12.4. Mobility in soil
- Cu-Zn Alloys
  - Ecology - soil : Not established.
Cu-Zn Alloys
Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

12.5. Results of PBT and vPvB assessment

Cu-Zn Alloys
PBT: not yet assessed
vPvB: not yet assessed

12.6. Other adverse effects

Additional information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN

<table>
<thead>
<tr>
<th>ADR</th>
<th>UN number</th>
<th>IMDG</th>
<th>IATA</th>
<th>ADN</th>
<th>RID</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1.</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
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<tr>
<td>14.2.</td>
<td>UN proper shipping name</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
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<tr>
<td>14.3.</td>
<td>Transport hazard class(es)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.4.</td>
<td>Packing group</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.5.</td>
<td>Environmental hazards</td>
<td>Dangerous for the environment: No</td>
<td>Dangerous for the environment: No</td>
<td>Dangerous for the environment: No</td>
<td>Dangerous for the environment: No</td>
</tr>
</tbody>
</table>

No supplementary information available

14.6. Special precautions for user

- Overland transport
  No data available

- Transport by sea
  No data available

- Air transport
  No data available

- Inland waterway transport
  No data available

- Rail transport
  No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

27. Nickel
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex V1to Regulation (EC) No 1272/2008 or not.
63. Lead and its compounds

Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

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15.1.2. National regulations
No additional information available

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information


Full text of H- and EUH-statements:

| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment — Chronic Hazard, Category 1 |
| Aquatic Chronic 3 | Hazardous to the aquatic environment — Chronic Hazard, Category 3 |
| Carc. 2 | Carcinogenicity, Category 2 |
| Repr. 1A | Reproductive toxicity, Category 1A |
| Skin Sens. 1 | Skin sensitisation, Category 1 |
| STOT RE 1 | Specific target organ toxicity — Repeated exposure, Category 1 |
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H360 | May damage fertility or the unborn child. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.