Title 18 Kt

Master alloy for casting of 750‰ (18 Kt) yellow gold

**Typology**
Master alloy for gold

**Production process**
Casting

**Color**
Yellow

**Color shade**
Light yellow

**Density [g/cm³]**
15.1

**Melting temperatures**
- Solidus [°C]
  - 845
- Liquidus [°C]
  - 870

**Commercial composition**
- Ag (%)
  - 49
- Cu (%)
  - 43
- Zn (%)
  - 8

**General characteristics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>As cast grain size [µm]</td>
<td>120</td>
</tr>
<tr>
<td>Fluidity (grid filling test) [%]</td>
<td>99</td>
</tr>
<tr>
<td>L*</td>
<td>86</td>
</tr>
<tr>
<td>a*</td>
<td>2.4</td>
</tr>
<tr>
<td>b*</td>
<td>21.4</td>
</tr>
<tr>
<td>c*</td>
<td>21.5</td>
</tr>
</tbody>
</table>

**Mechanical characteristics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength (Rm) [MPa]</td>
<td>384</td>
</tr>
<tr>
<td>Yield strength (Rp0.2) [MPa]</td>
<td>250</td>
</tr>
<tr>
<td>Elongation at rupture (A) [%]</td>
<td>38</td>
</tr>
<tr>
<td>As cast hardness [HV 0.2]</td>
<td>149</td>
</tr>
<tr>
<td>Hardness after 70% area red. [HV 0.2]</td>
<td>261</td>
</tr>
<tr>
<td>Hardness after annealing [HV 0.2]</td>
<td>144</td>
</tr>
<tr>
<td>Single step age-hardening hardness [HV 0.2]</td>
<td>243</td>
</tr>
</tbody>
</table>

**Product applications**

- Casting in open systems
- Casting in closed systems
- Stone-in-place casting
- Casting without stones
- Age-hardening

**Related products**

- C182D: Higher deoxidizers content
- OG604Z: Mechanical working, 750‰ light yellow gold
- LSG406B: Soft solder for 750‰ yellow gold
- LSG409V: Medium solder for 750‰ yellow gold
Master alloy for casting of 750‰ (18 Kt) yellow gold

CASTING PROCESSING PARAMETERS

<table>
<thead>
<tr>
<th>Casting temperatures</th>
<th>Metal - from [°C]</th>
<th>Metal - to [°C]</th>
<th>Flask - from [°C]</th>
<th>Flask - to [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thin (below 0.5 mm)</td>
<td>970</td>
<td>1000</td>
<td>650</td>
<td>720</td>
</tr>
<tr>
<td>Medium (from 0.5 to 1.2 mm)</td>
<td>950</td>
<td>970</td>
<td>580</td>
<td>650</td>
</tr>
<tr>
<td>Thick (above 1.2 mm)</td>
<td>930</td>
<td>950</td>
<td>460</td>
<td>580</td>
</tr>
</tbody>
</table>

Trees without stones
Let the flask cool down for 10-15 minutes, then quench in water.

Stone-in-place casting trees
Let the flask cool down for 30-45 minutes, then quench in water.

Pickling
Dip in RADIAL solution (50 g/l conc. at 60°C for 2 min.), or in sulphuric acid (10% conc. at 50°C for 5 min.)