High Gold Content Universal Alloy, Type 4
for low-fusing high-expanding ceramics
free of copper

Item no. 7325 3 001
Delivery form Casting plates
Indication Special ceramics veneering and plastic veneering,
  inlays, onlays, crowns,
  large span bridges,
  milling-, conus- and telescope technique
  supra constructions, model casting

Alloy: Au 73 Ag 16 Pd 5

<table>
<thead>
<tr>
<th>Type</th>
<th>Colour</th>
<th>Density g/cm³</th>
<th>Composition content in % (m/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>yellow</td>
<td>15.7</td>
<td>Au 80.4 Pt 73.4 Pd 1.4 Ir 5.5 Ag 0.1 Zn 16.0 Sn 3.0 Nb 0.5</td>
</tr>
</tbody>
</table>

The alloy is free of Ni, Co, Cr, Be, Cd.

Technical data

<table>
<thead>
<tr>
<th>Vickers hardness HV 5/30</th>
<th>0.2 % proof stress MPa</th>
<th>Elongation %</th>
<th>Modulus of elasticity MPa</th>
<th>Average linear CTE μm/m·K 25-500 °C</th>
<th>Melting range °C</th>
<th>Pre-heating temp. °C</th>
<th>Casting temp. °C</th>
<th>Annealing °C min</th>
<th>Hardening °C min</th>
</tr>
</thead>
<tbody>
<tr>
<td>g</td>
<td>n</td>
<td>w</td>
<td>a</td>
<td>n</td>
<td>w</td>
<td>a</td>
<td>n</td>
<td>w</td>
<td>a</td>
</tr>
<tr>
<td>220</td>
<td>225</td>
<td>150</td>
<td>225</td>
<td>660</td>
<td>340</td>
<td>630</td>
<td>7</td>
<td>19</td>
<td>7</td>
</tr>
</tbody>
</table>

The alloy is free of Ni, Co, Cr, Be, Cd.

Solders

<table>
<thead>
<tr>
<th>Application</th>
<th>Solder</th>
<th>Working temp. °C</th>
<th>Composition content in % (x &lt; 0.1 %)</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary solder/ before firing</td>
<td>PLATINOR® M-Lot 2</td>
<td>880</td>
<td>Au 76.0 Pt 2.9 Ir 0.1 Ag 10.0 Cu 6.0 Zn 5.0</td>
<td>yellow</td>
</tr>
<tr>
<td>Secondary solder/ after firing</td>
<td>PLATINOR® CPF-Lot 2</td>
<td>710</td>
<td>Au 73.0 Pt 0.5 Ir x Ag 12.5 Cu - Zn 14.0</td>
<td>yellow</td>
</tr>
</tbody>
</table>

Instruction for use

Heimerle + Meule GmbH  ·  Dennigstrasse 16  ·  75179 Pforzheim  ·  Germany  ·  Tel. +49(0)7231 940-140  ·  Fax +49(0)7231 940-2701  ·  www.heimerle-meule.com
Instruction for use PLATINOR® M 4

1. **Modelling**
   Create an anatomically reduced wax model, considering the planned veneering. Sharp edges are to be avoided, soft level crossings are to be striven at.
   Due to stability reasons, care has to be taken at bridge frames to achieve solid modulation of the connections and in the case of larger spans to create palatal and interdental strength of the connecting parts. Wall thickness of the modelled (waxed) single crowns at least 0.4 (0.3) mm, bridge pillar crowns at least 0.5 (0.4) mm.

2. **Spruing System**
   - Direct spruing with casting channel: at least Ø 3.5 mm
   - From 2 single crowns on and bridges:
     - Running bars or rings with object spruing:
       - 3.0 x 3.0 mm
     - running bars/rings:
       - Ø 4.0 – Ø 5.0 mm
     - casting channels:
       - Ø 3.5 – Ø 4.0 mm

3. **Position of the Wax Model in the Investment Mould**
   Distance from the mould wall: The units should have at least 5-10 mm distance from the mould wall.
   Distance from the mould bottom: Direct spruing between wax units and mould bottom a distance of 10 – 15 mm has to be kept.
   Investment of running bars or rings: the middle of the running bar or ring should cover the middle of the mould.

4. **Investment**
   Cover investment mould with investment ring spacer.
   Investment mould x 1 / x 3: 1 layer
   Investment mould x 6 / x 9: 1 – 2 layers
   Phosphate bonded investment material is required.
   The investment material manufacturer’s instructions for use have to be complied with strictly.

5. **Burnout / Preheating**
   Conventional heating: the first preheating step at approx. 280 °C has to be hold according to the mould size for respectively 30/40/50/60 min.; further heating steps in compliance with the investment material manufacturer’s instruction for use. After reaching the final temperature (see data sheet), the holding time is according to the mould size respectively 20/30/45/60 min.; further heating steps in compliance with the investment material manufacturer’s instruction for use. After reaching the final temperature (see data sheet), the holding time is according to the mould size respectively 20/30/45/60 min.
   In regard to the firing process the indications of the respective ceramic manufacturer have to be complied with strictly.

6. **Crucible Material**
   Ceramic and graphite crucibles can be used.

7. **Casting Units**
   All common melting and casting units can be used.

8. **Casting**
   Check data sheet for casting temperatures.
   Further heating times after reaching the liquid temperature according to the quantity of material used and unit output.
   Resistance heating: 20 – 60 sec.
   High frequency: 5 – 10 sec.
   Propane / Oxygen torch: 5 – 10 sec.
   In the case of torch melting, pay attention to the correct setting of the torch (danger of carbon damage) and melt with the reduced zone.

9. **Casting Residues**
   In order to preserve the alloy characteristics and the casting quality, no more than 50 % cleaned casting residues should be used. The weight used is calculated from: wax weight x alloy density (see Heimerle + Meule calculation sheet).

10. **Cooling and Divestment**
    Let mould cool down to hand temperature and carefully divest. This avoids deviations in fitting, change of alloy characteristics, and hot fissures. Sandblast with high grade corundum (approx. 100 μm) or with a market picking agent to remove the investment material.

11. **Finishing and Cleaning**
    Pickling and Polishing
    - Soft level polishing
    - Rubber-wheel the frame; final polishing can be accomplished with pastes, brushes, buffing wheels, and felt.

Our recommendations and instructions for use are based on our experience. They do not, however, replace professional knowledge and experience of dentists and dental technicians who hold sole responsibility for their decisions to select and process particular alloys. Our customer service is a non mandatory service not establishing any liability. Warranty and damage claims are limited to the contracted contents of our General Terms and Condition.