Esteticor Avenir®
Instructions for use
High Gold Metal Alloy for the Ceramic-fused-to-metal Technique

Mixing of different alloys or alloys of similar types is not allowed! Wear darkened eye protection and protective gloves when melting.
Protect eyes, hands and breathing when pickling.
Protect eyes and breathing during processing with rotating instruments with an aspirator device.

With the publication of these instructions of use all previous editions are no longer valid.

The manufacturer refuses any liability for damages due to disregard of the instructions for use below.

Directions for High Gold Metal Alloys for the Ceramic-fused-to-metal Technique

These alloys have been proven for years and are distinguished by their fine-grained cast structure, their excellent corrosion resistance, their biocompatibility and their ease of processing. The high Au and Pt-group metal contents of the alloys in this group allow problem-free soldering; they are also well suited for the casting-on technique incorporating prefabricated attachments for combined work.

General instructions for use

Modeling
Usual modeling technique for ceramic-fused-to-metal works. Minimal wall thickness 0.4 mm. With bridgework the connections must have a minimum section of 6–9 mm². Modelling of garlands or inlay shaped reinforcements in the palatinal region will give added stability. The application of air and cooling vents improves casting results.

Investing
The following investments are recommended for this type of alloys: Cendres+Métaux-Ceramicor® (phosphate-based, containing graphite) CM-20 (based on quartz and cristobalite without graphite for the rapid preheating technique). Plaster-based investments must not be used for these types of alloys!

Re-use of alloy
Only use perfectly cleaned (by sand-blasting with aluminium oxide) buttons and sprues and add at least \( \frac{1}{3} \) of new alloy.

Traceability of lot numbers
If different lots of an alloy are being used for the realisation of a restoration, all lot numbers concerned must be noted in order to assure traceability.

Surface quality of cast objects
In order to prevent corrosion the cast object must have a surface free of shrink holes and porosities after trimming and polishing.

Cooling of castings
Do not quench the casting cylinder after casting, but bench cool to room temperature.

Pickling
After firing or soldering pickle in a warm, freshly prepared (clean) solution of 10 vol. % sulphuric acid (H₂SO₄)

Note: When using other pickling agents follow the instructions for use of the respective manufacturer.

Gilding of frameworks
Gilding is carried out at the user’s own risk.

Polishing
After the last firing free metal surfaces must be polished to a high shine in order to completely remove the oxide layer.

Disinfection
Each prosthetic restoration must be cleaned and disinfected before try-in or definite insertion in the mouth of the patient.

Further information
on processing precious metal alloys, soldering and casting-on are included in the Dental documentation of Cendres+Métaux and in the website www.cmsa.ch/dental.

Allergies
With patients having an existing allergy to one or several elements contained in any one alloy, this particular alloy must not be used. With patients suspected of having an allergy to one or several elements contained in any one alloy, this alloy can only be used after preliminary allergological testing and proof of a non-existing allergy.

Rx only

The products carry the CE sign.
See packaging for details.
### Physical and mechanical properties

<table>
<thead>
<tr>
<th>Alloys</th>
<th>Indications</th>
<th>Colour</th>
<th>Composition in weight %</th>
<th>Solder</th>
<th>Solder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Au + Pt-Met.</td>
<td>Au</td>
<td>Pt</td>
</tr>
<tr>
<td>Esteticor Avenir®</td>
<td>✓ ✓ ✓ ✓ ✓</td>
<td>Pale yellow</td>
<td>97.40</td>
<td>84.00</td>
<td>10.90</td>
</tr>
</tbody>
</table>

ISO 22674 / ISO 9693

### Indications

- a: Inlays, onlays
- b: Single crowns
- c: Short-span bridgework
- d: Long-span bridgework
- e: Milled work
- f: Clasps, lingual bars, palatinal plates

Note: The use of solders not mentioned in the table is subject to the user's risk. In case of uncertainties, consult the instructions of the manufacturer involved.

### Alloys

<table>
<thead>
<tr>
<th>Density</th>
<th>Melting range</th>
<th>Casting temp.</th>
<th>Crucible</th>
<th>Hardness as cast</th>
<th>Young's Modulus</th>
<th>0.2 % proof stress</th>
<th>Rp 0.2 %</th>
<th>Elongation A5</th>
<th>Linear coefficient of thermal expansion CTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>g/cm³</td>
<td>°C</td>
<td>°C</td>
<td>as cast</td>
<td>annealed HVS *</td>
<td>as cast MPa *</td>
<td>as cast MPa *</td>
<td>annealed</td>
<td>annealed</td>
<td>as cast (25 – 500 °C) 10⁻⁶ K⁻¹ (25 – 600 °C) 10⁻⁶ K⁻¹</td>
</tr>
<tr>
<td>18.7</td>
<td>1055 – 1185</td>
<td>1285 – 1335</td>
<td>210</td>
<td>255</td>
<td>100</td>
<td>520</td>
<td>670</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

* Graphite crucible
* Universal ceramic crucible
* Vitrified carbon crucible

* The values indicated result from measurements obtained under exactly defined conditions. Individual deviations of ± 10 % are possible and to be considered as normal.

### Particular instructions for use

<table>
<thead>
<tr>
<th>Preheating temperature</th>
<th>Recommended casting systems (not compulsory)</th>
<th>Recommended cleaning systems</th>
<th>Tested compatible ceramic compound</th>
<th>Other ceramic compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esteticor Avenir®</td>
<td>Propane-oxygen flame</td>
<td>Vacuum-pressure casting with electric resistance furnace</td>
<td>High frequency induction in atmosphere</td>
<td>The alloy is compatible with the usual high fusing ceramic compounds. In case of doubt, consult the instructions of the ceramic manufacturer concerned.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aluminium oxide (Al₂O₃) 50µm</th>
<th>Cleaning with steam jet</th>
<th>Oxide firing with vacuum</th>
<th>Pickling after oxide firing in a warm and clean solution of 10 vol. % sulphuric acid (H₂SO₄)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esteticor Avenir®</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slow cooling</th>
<th>Normal cooling</th>
<th>Rapid cooling</th>
<th>Heating rate max.</th>
<th>Tested compatible ceramic compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esteticor Avenir®</td>
<td>✓</td>
<td></td>
<td></td>
<td>VITA VMK 95 / IVOCLAR IPS d'SIGN</td>
</tr>
</tbody>
</table>

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