inCoris NP

Operating Instructions
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1 Technical Data

Intended use
CoCr burn-on alloy for crown and bridge techniques (free from nickel and beryllium according to EN ISO 9693 and DIN EN ISO 22674)

CE mark

Chemical composition [mass %]

<table>
<thead>
<tr>
<th></th>
<th>Co</th>
<th>Cr</th>
<th>Mo</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>60.0</td>
<td>26.0</td>
<td>5.8</td>
<td>5.7</td>
</tr>
</tbody>
</table>

C; Ce; Fe; Mn; Si

Mechanical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Rp0.2</th>
<th>Rm</th>
<th>E</th>
<th>A5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proof stress</td>
<td>MPa</td>
<td></td>
<td>GPa</td>
<td>%</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>MPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-module</td>
<td>GPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elongation at break</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardness</td>
<td>HV 10</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Physical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>8.6 g/cm</td>
</tr>
<tr>
<td>Melting interval</td>
<td>1420 - 1450 °C</td>
</tr>
<tr>
<td>Thermal expansion coefficient (25°C - 500°C)</td>
<td>10^-6 K^-1 14.2</td>
</tr>
</tbody>
</table>
2 Processing hints

2.1 Application procedure

inCoris NP burn-on alloy is generatively converted to dental restorations from an electronic record only via direct metal laser sintering in variations such as e.g. "Selective Laser Melting (SLM)", "Direct Metal Laser Sintering (DMLS)", etc.

2.2 Veneer

Preparation:

Processing if necessary with a fine, cross-toothed hard-metal burr, a ceramic-bonded grinding tool or an abrasive diamond pencil with a single-layer galvanic coating. Sandblasting of restorations, especially of surfaces to be veneered, with corundium having a particle size of 125 - 250 µm (e.g. Korox® 250) at 3 - 4 bar. Then the restorations must be thoroughly cleaned (e.g. steam blasted or boiled in distilled water). After cleaning the restorations, hold them with an pair of artery forceps or a similar instrument and do not touch them again.

The frameworks can be veneered with veneering ceramics that correspond to the CTE value (e.g. Ivoclar Vivadent d.SIGN).

CAUTION

Metallic powders may be dangerous to one's health:

A suction removal system and a respirator mask with a type P3 fine dust particle filter (e.g. FFP3-EN149:2001) must be used when manually performing mechanical processing and sandblasting.

Oxide firing:

Only if necessary, i.e. possibly to check the surface. If oxide firing is used, set the temperature to 950°C - 980°C and perform for 5 - 6 minutes under vacuum. Following oxide firing, sandblast the restorations with corundium having a particle size of 250µm (e.g. Korox® 250) at 3 - 4 bar. Then the restorations must be thoroughly cleaned (e.g. steam blasted or boiled in distilled water). After cleaning the restorations, hold them with an pair of artery forceps or a similar instrument and do not touch them again.

Ceramic firing:

The ground coat should always be applied in two layers. Each individual layer is fired. The first layer must be applied thinly (washbrand). The second layer must be applied as a cover coating. The restorations must be rinsed off under running water prior to each ceramic coating.

Slow cooling is recommended (cooling phase down to approx. 600°C). Ceramics or ceramic residues must be removed mechanically. Hydrofluoric acid (HF) corrodes the metal framework.
2.3 Aftertreatment

Visible metal surfaces must be sandblasted with corundium having a particle size of 50 µm. Then the outer surfaces can be blast-polished with a suitable blasting abrasive, e.g., Perlablast®. Further surface finishing is initially performed with rubber polishing, and finally using cobalt-chromium polishing paste. Finally, the finish-worked restorations must be thoroughly cleaned (e.g., steam blasted or boiled in distilled water).

2.4 Soldering and welding

inCoris NP is basically solderable and weldable. The instructions for laser welding and soldering provided by the manufacturers of the unit and of the laser welding wire or solder used must be observed. Furthermore, it is also advisable to use CoCr laser welding wire or solder, e.g., manufactured by Dentaurum; Bego or a comparable firm.

2.5 Side effects

Allergies to components of the alloys are possible in rare cases.

2.6 Interactions

In case of occlusal or approximal contact between different alloys, electrochemically induced paresthesia may result in rare individual cases.

2.7 Contraindications

- in case of proven incompatibilities and
- allergies to components of alloy