

GC Initial™ CAST NP
Cobalt-Chrome (CoCr) based casting alloy
for metal ceramic veneering
(type 4)

For use only by a dental professional in the indications for use.

INDICATIONS FOR USE
GC Initial™ CAST NP is a cobalt chrome based casting alloy for metal veneering. Initial CAST NP is used for the fabrication of crowns & bridges with a suitable metal veneering ceramic or acrylic veneering material.To its thermal expansion of $14 \times 10^{-6} K^{-1}$ it is suitable for the metal veneering. Initial CAST NP has the same physical properties as an normal casting performance an extra fine molecular structure resulting in smooth, compact surfaces offering an easy and straightforward processing. The alloy offers a reduced oxide formation after repeated ceramic firings.

GC Initial™ CAST NP is produced conform the ISO9693-1 and ISO 22674 standards. It has passed the cytotoxicity test according to the norm ISO 10993-5. The alloy is highly corrosion resistant and it is free of beryllium, indium and gallium.

COMPOSITION

| | | |
|----------|---------|-----|
| Cobalt | Co | 63% |
| Chromium | Cr | 28% |
| Tungsten | W | 3% |
| Niobium | Nb | 4% |
| Silicon | Si | 1% |
| Others | Fe / Mo | 1% |

ALLOY CHARACTERISTICS

Solidus-liquidus temperature: 1253 - 1304°C

Casting temperature: 1450 °C

Highest firing temperature: 950°C

Thermal expansion coefficient: $13 \times 10^{-6} K^{-1}$ ($25 - 1000^{\circ}C$)

Density: 8.4 g/cm³

Vickers Hardness: 324 HV10

Percentage elongation at fracture: 3.4%

Load strength: 475 MPa

Modulus of elasticity: 194 GPa

Colour: White

Recommended ceramics: GC Initial MC.

INSTRUCTIONS FOR USE

I.WAX-UP

Wax walls should be 0.5 mm thick to ensure that after the manufacturing process the metal wall thickness is at least 0.3 mm.

Avoid high edges and undercuts. Frameworks need to be anatomically reduced ensuring a uniform thickness of the ceramic layer. Connectors should be modelled as strong and as high as possible.

Single crowns can be directly sprued. Suggested round casting sprues of 3.0 mm to 4.0 mm.

Bridges, a crossbar sprueing technique is advised.

Connections to crossbar 3 to 3.5mm.

Distance from modelation to crossbar 2.5mm. Thickness of the crossbars 0.5mm.

Thickness of sprues to crossbar 3 to 4mm.

The higher the volume of the casting the thicker the sprue should be. The casting sprue depends on the object dimensions.

I.LINESTRING

Use only phosphate bonded investment material for Crown & Bridges.

GC Fujiteit Premium and GC Fujiteit II are optimized for producing high precision castings in combination with smooth casting surfaces.

For investments for Crown & Bridges can be found in the "GC Focus Edition - Phosphate Bonded Investments for C&B techniques". A pre-heating temperature of 850-950°C is advised.

Follow the manufacturer's Instruction for Use related to the pre-heating times before casting.

I.CASTING

We recommend to only use fresh alloys in own crucibles. Do not re-use GC Initial Cast NP. Optimal results of the alloy can be guaranteed only if new material is used.

Melt GC Initial CAST NP in pre-heated crucibles used for this alloy only.

The following are the instructions of the respective manufacturer of the casting devices for parameters and casting procedures.

I.VENEERING

Use tungsten bars to grind and finish the prepared frameworks. Use always the same grinding instruments to avoid contamination.

Do not use diamond bars. Grind the surface with slow speed and low pressure.

Grind the surface in one direction only to avoid creating air bubbles or void air bubbles after the first (opaque) firing.

Sandblast the prepared framework using a non-recycling sandblaster with 110 to 150 µm aluminum oxide at a pressure of 3-4 bar and then steam clean.

I.XODYE FIRING

Fire for 5 min. under vacuum at 950-980°C (10% more than opaque material firing temperature).

After firing, carefully sandblast the oxide layer using a non-recycling sandblaster with 110 to 150 µm aluminum oxide at a pressure of 3-4 bar and then steam clean. The framework should have a homogeneous grey surface. Proceed with firing using a compatible veneering ceramic following the manufacturer's instruction.

I.VENEERING

A pre-heating time of 5 min. prior to use GC Initial MC, please refer to GC Initial MC Technical Manual.

B Veneering with other ceramics: please refer to the manufacturer's instruction for use

C Veneering with acrylics: please refer to the manufacturer's instruction for use.

PACKAGING

GC Initial™ CAST NP: 250g

GC Initial™ CAST NP: 500g

GC Initial™ CAST NP: 1000g

CAUTION

1 Cobalt-Chrome-based alloys seldom cause dermatitis on sensitive subjects.

A Patch-Test is thus advisable.

2 Metal dusts and smoke are dangerous for health.

Use exhaust fans while casting and sandblasting.

3 We recommend to catch records and link it to the software to allow its complete traceability.

4 This product does not need any special preservation precautions. Nonetheless it has to be employed within the expiry date on the packaging.

5 Disposal of all waste according to local regulations.

6 Personal protective equipment (PPE) such as gloves, mask and safety eyewear should always be worn.

7 The medical devices can not be used with other metal implants in patient's oral cavity. Coexistence of different materials can cause a "puff" effect.

8 GC Initial CAST NP contains Cobalt, substance classified as CMR.

9 Do not re-use GC Initial CAST NP. Optimal results of the alloy can be guaranteed only if new material is used.

GUARANTEES

All recommendations are based on GC findings and GC initial test and are therefore only to be used as guidelines. Any claim for compensation GC receive, in any event, shall not exceed the value of the individual order of GC Initial CAST NP.

Some products referred in this present I.PU may be classified as hazardous according to GHS. Always familiarize yourself with the safety data sheets, available at: <https://www.gc-dental.eu/europe/>For the Summary of Safety and Clinical Performance (SSCP) please see EU EUDAMED database (<https://ec.europa.eu/tools/eudamed>) or contact us at Regulatory@gc-dental

Undesired effects - Reporting:

If you become aware of any adverse effect, report it similar to what is reported by this product, including any adverse effect to your use, please report them directly through the relevant vigilance system, selecting the proper authority of your country accessible through the following link:

https://ec.europa.eu/growth/sectors/medical-devices/contacts_en**GC Initial™ CAST NP**
Кобалт-хром (CoCr) базирана отливка
сплав за металокерамика**GC Initial™ CAST NP**
Silitna kov na chromokobaltové (CoCr)
bází pro metalokeramické fazety
(typ 4)Da se izpolza samo od dentista nekari, zlazivki in
instrukcije za uporabo.**ИНДИКАЦИЈА ЗА УПОТРЕБА**

GC Initial™ CAST NP je baza na krom na krom (CoCr) ali po metalokeramickim fazetam (tip 4). Ustvari vrednost k površju do 100°C.

Vsebina: GC Initial™ CAST NP je baza na krom na krom (CoCr) ali po metalokeramickim fazetam (tip 4).

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