

CHROMO

Cobalt-based denture base alloy, Type 5

As at: 03/2011

CHROMO is a nickel free and beryllium free chrome-cobalt denture base alloy.

CHROMO is suitable for flame casting, induction casting and for compatible vacuum pressure casting machines.

CHROMO features maximum corrosion resistance and biocompatibility. CHROMO is easy to laser weld.

Chemical composition:

| Co % | Cr % | Mo % | Si % | C % | Mn % |
|------|------|------|------|-----|------|
| 62 | 30 | 5,5 | 1 | 0,6 | 06 |

Physical properties:

| | |
|------------------------|-----------------------|
| Density: | 8,3 g/cm ³ |
| Hardness: | < 400 HV 10 |
| Tensile strength: | 700 MPa |
| 0,2 % Proof stress: | 620 MPa |
| Modulus of elasticity: | 230 GPa |
| Elongation at rupture: | > 6 % |
| Preheat temperature: | 930 - 950 °C |
| Solidus/Liquidus: | 1,250 - 1,260 °C |

Technique:

Waxing up

The pattern should be at least 0.4 mm thick to ensure reliable flow of the alloy. All waxes and resins used must burn out without residue. We recommend round sprues with a 3.5 – 4 mm diameter for spruing.

Investing, preheating

The expansion of Chromo-Speed chrome cobalt investment is optimally matched to CHROMO.

The preheat temperature is 930°C - 950°C (optional speed heating or programmed heating).

Casting

On average 4 - 5 ingots are required per denture base. Only ceramic crucibles and not graphite crucibles should be used for melting CHROMO. Casting fumes should be extracted. When casting with a flame the ingots should be uniformly heated from above, as vertically as possible. The metal should be cast as soon as the last ingot has slumped.

The casting crust should not split open! Overheating of the molten metal can cause microporosities, coarse grain formation and contraction cavities. Do not use flux powder! The instructions of the torch manufacturer must be followed when casting with an open flame (set oxygen to 2 – 3 bar and propane to 1 bar pressure). Allow the mould to bench cool slowly. Casting buttons should not be reused, as certain components of the alloy are lost by renewed melting.

Preparation

Prepare CHROMO castings using commercially available tungsten carbide cutters or aluminium oxide stones. Rotary instruments should only be used for one type of alloy to prevent contamination.

Soldering

Cobalt-based solders are suitable for use. CHROMO is easily laser welded.

Cleaning

CHROMO should be cleaned using a steam cleaner or in an ultrasonic cleaner.

Further information

CHROMO is intended for single use. The user is responsible for correct application and preparation. All technique recommendations are based on thorough practical experience as well as the latest material science findings. The information on preparation does not represent a guarantee of product properties.

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