

As at: 06-10

NEMO[®] is a nickel-free and beryllium-free chrome/cobalt bonding alloy without carbon. Extra bonding oxide formers suitable for the alloy ensure an optimal metal-porcelain bond with all high-fusing porcelains.

NEMO[®] is suitable for casting with a flame as well as induction casting.

NEMO[®] features high corrosion-resistance and biocompatibility.

NEMO[®] is easily laser-welded.

Chemical composition:

Co %	Cr %	W %	Si %	Fe %	Mn %
61	28	8.5	~1.7	< 0.5	0.25

Determination, range and validity of the chemical composition in accordance with EN 10 204-3.1

Physical properties:

Density:	8.3 g/cm ³
Hardness:	285 HV 10
Solidus/Liquidus:	1,390 – 1,415°C
Casting temperature	1,475°C
Modulus of elasticity:	190000 MPa
Elongation at rupture:	10%
CTE (20-600 °C)	14.1 µm/mK
Dimensions	Ø 8 x 15 mm; ~6 g/ingot

Technique:

Waxing-up

The pattern should be at least 0.4 mm thick to ensure reliable flow of the alloy. We recommend adding a reservoir sphere to act as a suction reservoir with solid full crowns or bridge pontics.

Investing, preheating

Dreibettmasse[®] investment from Klasse 4 Dental GmbH is optimally matched to NEMO[®] with an expansion of up to 4.2%. The preheat temperature is 950°C (optional speed heating or programmed heating).

Casting

Only ceramic crucibles and **not graphite crucibles** should be used for melting NEMO[®]. The casting fumes should be extracted.

When casting with a flame, the ingots should be uniformly heated from above, as vertically as possible. The alloy should be cast as soon as the last ingot has slumped. The casting crust should **not split open!**

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The instructions of the torch manufacturer must be followed when casting with an open flame. 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 NEMO® 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. The minimum thickness of the prepared copings should be 0.2 mm.

Firing of the porcelain

Complete oxide firing at 980°C atmospheric for 10 minutes, though this is not essential. Then sandblast the framework at max. 2 bar using 110 µm aluminium oxide and clean it in the usual way using distilled water in an ultrasonic cleaner or using a steam cleaner. **NEMO® must not be placed in a pickling solution.**

Complete the wash and opaque firings according to the instructions for use of the porcelain. All firing cycles (except opaque) **should be completed with long-term cooling.**

Soldering

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

Cleaning

NEMO® should be cleaned with a steam cleaner.

Further information

NEMO® has been used with great success in our testing laboratory for over 3 years. The technique recommendations are therefore based on thorough practical experience as well as the latest material science findings.

NEMO® is intended for single use. The user is responsible for correct application and preparation. The information on preparation does not represent a guarantee of product properties.

CE 0297

EN ISO 22674

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