

SINERGIA PRODUCTION

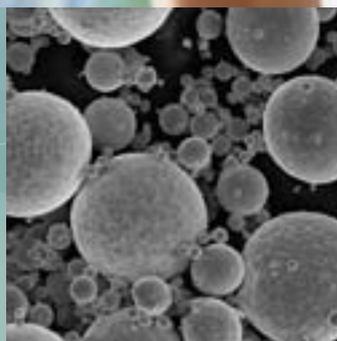


The first Italian laser sintering & melting centre



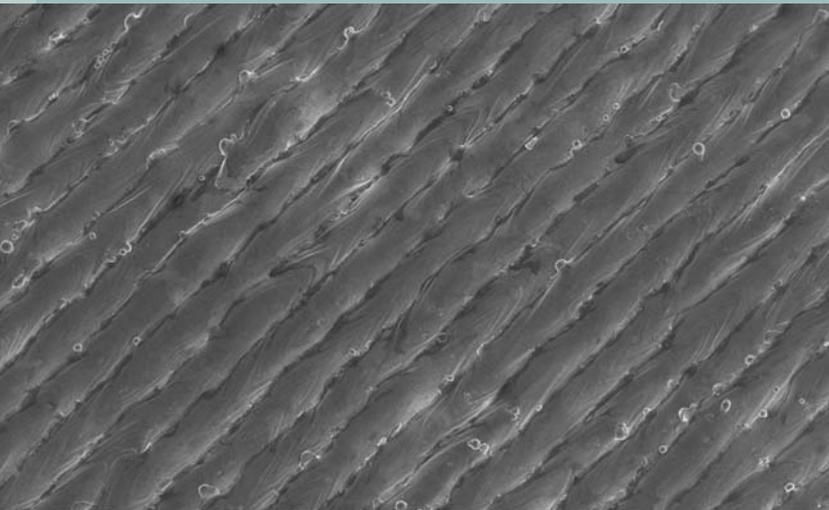
„a smile makes the difference“

Since 1988 Nobil Metal has produced atomized metals and precious alloys. More than 25 years of experience in this field assure expertise, quality and service.

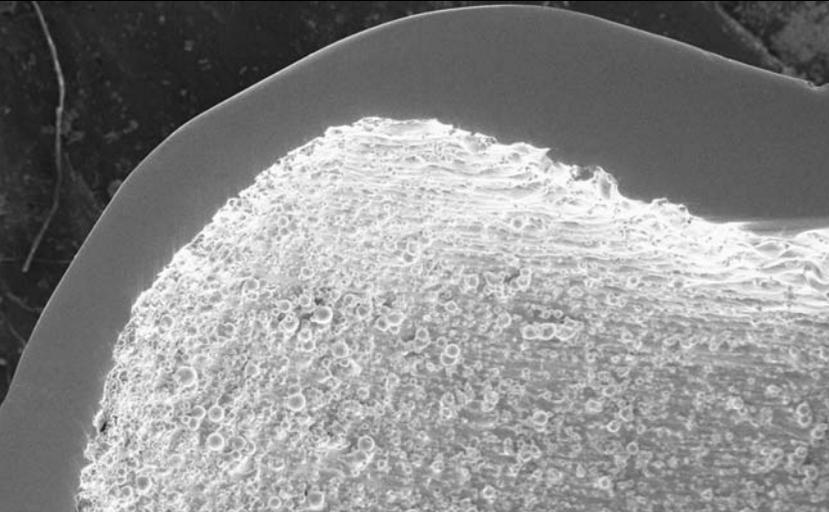


Alloy in powder: a special production of Nobil Metal

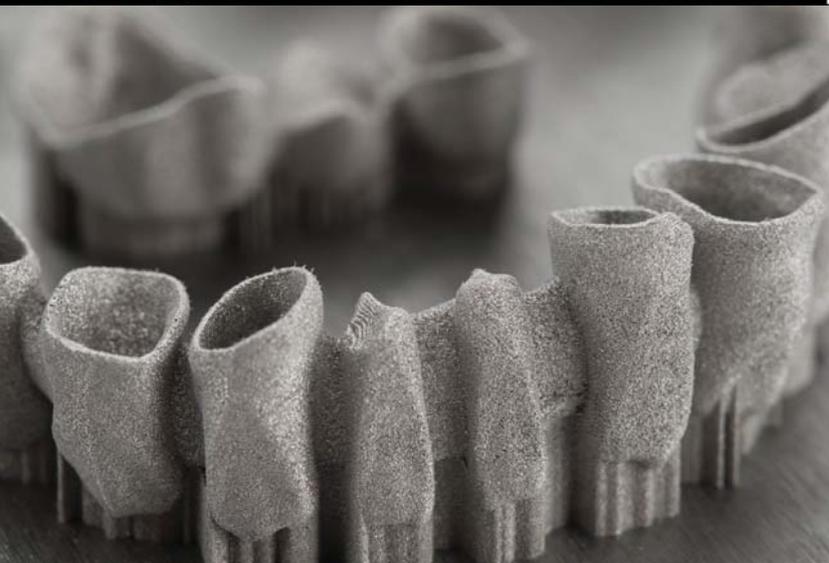
KERAMIT NP-S, Co-Cr dental alloy for ceramic



EHT=20.00 kV WD= 10 mm Mag= 200 X KERAMIT NP-S
30µm H Photo No.=1311 Detector= SE1 CL MLAB



EHT=20.00 kV WD= 15 mm Mag= 100 X 014
100µm H Photo No.=548 Detector= SE1



COMPOSITION

Co	Cr	W	Mo	Si	Nb
63%	24%	8%	3%	1%	1%

Advantages

- ✓ **safe:** the alloy is widely compatible with many ceramics due to its $CTE_{25-500^{\circ}C} 13,9 \times 10^{-6} K^{-1}$
- ✓ **tested and approved:** in combination with NM Bonding and the most sold ceramics for the layering and press technique.
- ✓ **economical:** easy to finish
Hardness 285 HV 10/30
- ✓ **versatile:** suitable to produce frameworks to be invested with both ceramic and composite and for all implantoprosthetic reconstructions.

TECHNICAL DATA

Colour	White
Density	8,3 g/cm ³
Melting range	1305-1370 °C
CTE 25 - 500°C	13,9 10 ⁻⁶ K ⁻¹
CTE 25 - 600°C	14,0 10 ⁻⁶ K ⁻¹
Modulus of elasticity	210 GPa
Yield strength	490 MPa
Elongation	10%
Adhesion Schwickerath	> 40 MPa
Vickers Hardness	285 HV 10/30

CORROSION RESISTANCE

E _{ocp}	E _p	I ₃₀₀	I _p
-128 mV	649 mV	4,34 µAcm ⁻²	37,33 µAcm ⁻²

ISO 22674 - ISO 9693-1

NM Bonding, aesthetical conditioner for non-precious alloys



NM Bonding makes a chemical reaction with the non-precious alloy and prevents an excessive oxidation of the framework.

The correct use assures the excellent ceramic coating also of long-span frameworks, without bubbles or cracks risks, improving the ceramic-metal adhesion.

The dark colour of the oxides are masked and the ceramic results of a warmer shade.

Finish with tungsten carbide burs and sandblast with Al_2O_3 , 250 μ m and ca. 3,5 bar.

Apply an unique thin and uniform layer. Proceed with the vacuum firing at an initial temperature 650°C, increase of 55°C/min up to final temperature of 980°C, without stabilisation.

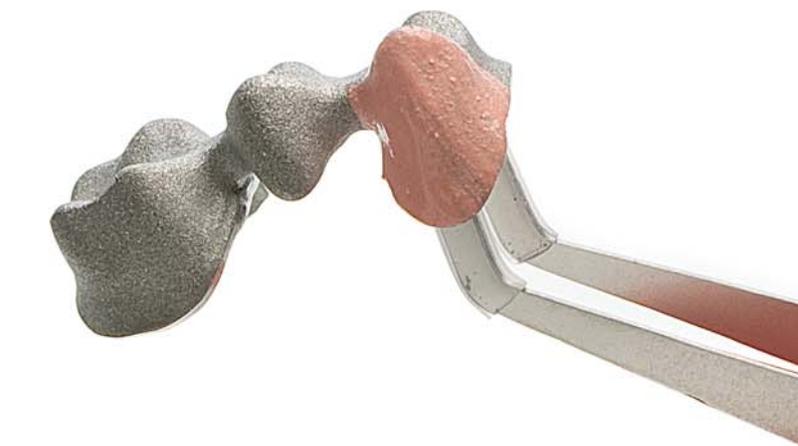
FIRING PARAMETERS

Low Temp [°C]	650
Dry time [min:sec]	02:00
Closing Time [min:sec]	02:00
Preheat [min:sec]	02:00
Heat Rate [°C/min]	55
High Temp [°C]	980
Hold time [min:sec]	00:00
Vacuum [%]	100

NM Bonding after the firing has a colour between light yellow and gold yellow, depending on the used non precious alloy.

Proceed with the ceramic as usual.

6 gr. pot: item code 0106VAR25001002



LASER SINTERING & MELTING, your reliable partner in your daily work

EXPERIENCE

Since **2007** the SINERGIA department of Nobil Metal Spa manufactures in a easy and quick way copings, bridges, implant bridges, bars, abutments and attachments, offering to the dental technicians quality and accuracy.

OPEN

Production from all open STL standard files.

LASER SINTERING AND LASER MELTING

Thanks to the continuous development and optimization of the production process, we are able to combine different machines and technologies: up to now we supply laser sintered and laser melted structures, always with high precision, density and stability. The structures are submitted to a specific thermic treatment in controlled atmosphere to assure a complete stretching.

The powders are totally developed and manufactured in NOBIL METAL, for a further guaranty of the whole production process.

CERTIFICATION

SINERGIA production is certified according to the UNI EN ISO 13485:2012 and UNI EN ISO 9001:2008 standards

QUALITY CONTROL

The R&D laboratory is provided with a complete last generation equipment:

- XRF spectrophotometer
- ICP spectrometer
- Electronic scanning microscope EDX analyses
- Granulometer Microtrac
- Differential Thermal Analysis (DTA)

They are some of the equipment and techniques used in the daily work to assure a constant quality of Nobil Metal product, maintaining the acknowledge of this particular know-how.

COMPETENCE AND SUPPORT

The continued training of our personnel assures qualified support.

Nobil-Metal S.p.A.
Strada San Rocco, 28
14018 Villafranca d'Asti
Italy

Tel. +39 0141 933811
www.nobilmetal.com