



## CERACAST NB (MMI-CERACAST-NB) updated Aug 05, 2015

### Non-Precious Dental Casting Ceramic Alloy - Beryllium Free

#### Technical Specifications

Melting range (°C)	1,301 - 1,364
Yield strength (MPa)	261
Tensile strength (MPa)	316
Elongation (%)	3.0
Density (g/cc)	8.3
Vickers hardness (HV)	200
Coefficient of linear expansion (25-500°C)	14.07

#### Composition

Nickel	61.0%
Chrome	25.0%
Molybdenum	10.5%
Silicon	1.5%
Titanium	<1%
Iron	<1%
Cobalt	<1%
Aluminum	<1%

#### Waxing

Procedure is similar to the application of precious and semi-precious alloys. Waxing could be as thin as 0.3mm.

#### Sprueing

Use direct method of sprueing for single units, and indirect method for multiple units.

#### Investing

Use high heat phosphate bound investment. Use ring liner. Use investment manufacturer instructions.

#### Burnout

After proper bench set, place the ring in the oven at room temperature (or as high as 600°F = 315°C), and raise the temperature to 1800°F (982°C) with one hour soaking time. Add extra time to hold time for additional rings placed in the oven.

#### Melting & Casting

Use Induction Casting unit or Torch Casting (gas/oxygen). For torch casting, use multiple orifice tip. Do not use acetylene torch. Do not use crucible used for another alloy. Keep the torch moving in rotating motion for even distribution of heat on the ingots. Release the casting arm when ingots lose definition, slumped, and ingots are joined.

**Note:** *Ingots will not puddle, do not over heat ingots.* Induction casting, set the temperature to 2700°F (1480°C). Set the casting arm speed between 425 and 450 rpm.

#### Preparation of Framework

Follow the same procedure as used for precious alloys. Sandblast the area bearing porcelain, and clean with ultrasonic.

#### Degassing

Place the metal work in a furnace at 1200°F (650°C), create a vacuum and increase the temperature 100°F (38°C) per minute to 1800°F (982°C). Brake the vacuum and let it cool down. After degassing sandblast the area of the frame bearing porcelain.

#### Opaque & Porcelain Application

Apply opaque in thin slurry. Fire the opaque slurry coating in a temperature 10° higher. A quicker method uses the same procedure without degassing. Use opaque and porcelain manufacturers instructions.

**Caution: This alloy contains Nickel. Not to be used on individuals with Nickel hypersensitivity.**

