American Dent-All, Inc.

Made in the USA

SUPREMCAST V ®

Nickel-Chrome with
Beryllium Ceramic Alloy

Intended Use: Fabrication of Crown& Bridge metal-ceramic (ceramic-fused-metal) restoration

Technical Data

Melting Range	1165°C – 1207°C
Yield Strength	880 MPa
Tensile Strength	1160 MPa
Density	7.9 (g/cc)
Elongation	7%
Coefficient of Liner Expansion	13.4 (25-500°C)

Composition

Nickel	73%
Chrome	14%
Molybdenum	8.5%
Aluminum	1.7%
Beryllium	1.8%
Titanium	<1%
Silicon	<1%
Cobalt	<1%

FDA CE 0473 Intertek

EC REP Wellkang Ltd 29 Harley St. W1G 9QR LONDON, U.K.

R18.1 Instructions for use

WAXING:

Waxing procedure is very similar to the application of precious and semi-precious alloys. However, waxing could be as thin as 0.3mm.

SPRUEING:

A- Direct for single units. Sprueing should be ¼ (6mm) in length. Based on the size and the thickness of crowns, Use 6-8 gauge sprues.

B- Indirect for multiple units. Use straight 8 gauge sprue, about 1/8”(3or4mm) in length and connect it to the unit. For long spanned bridges, use additional sprues to connect the last unit.

INVESTING:

Use high heat investments & follow the Instructions carefully. Use debubblizer. Use one/two ring liner. After investment has set, scrape the top of the investment to allow gases to escape.

BURNOUT:

Place the ring in the furnace at room temperature (or as high as 600F°=315°C if needed) increase the temperature to1800F° (982C°) with one hour holding time. Add 10/15 extra minutes for each additional ring.

MELTING& CASTING:

Can be melted with the induction machine or with as/oxygen torch.

A- Torch Casting: Use multiple orifice torch tips. Do not use crucibles used for other alloys. Move the torch allowing even distribution of heat. Adjust oxygen regulators at approximately 25-30Lbs. Propane. Adjust valves until the inner flame cone is blue and approximately ½” long. The outside of the flame cone should be 3½” from the inner cone. Preheat the crucible. Release the casting arm when the ingots lose definition and puddle: molten ingots usually vibrate from the force of the flame. Bench cool the cast until the redness goes away.

B- Induction Casting: Set the temperature to 2700F^{O}(1480C^{O}).Set the casting arm speed between 425 and 450rpm. When ingots pool together and shadow disappears, release the arm.

METAL FINISHING:

Sand blast the investment with pure non-recycled aluminum oxide. Do not smooth the surface of the frame bearing porcelain.

METAL PREPERATION:

Sand blast the area bearing porcelain and do not touch the area accepting porcelain. Clean with ultrasonic cleaner

DEGASSING:

Place the metal work in a furnace at 1200F°(650C°).Create a vacuumandincreasethetemperature100F° (32C°)per minute to 1800°F(982°C).Release the vacuum and let it cool down. After degassing, sand blast the area of the frame bearing porcelain.

OPAQUE & PORCELAIN APPLICATION:

Bonding slurry must be applied to all surfaces bearing porcelain. Apply slurry and dry it quickly in the oven with open muffle. Fire the slurry coating in ten degrees higher temperature, as per instructions for opaque. Quicker method is using the same procedure without degas procedure. Use opaque manufacturer’s instructions. Try to complete opaque firing in a single step.

PORCELAIN APPLICATION:

Follow the ceramic manufacturer’s instructions. Build up your porcelain and try to save extra firing.

INDICATIONS: Fabrication of Crown& Bridge metal-ceramic (ceramic-fused-metal) restoration

CONTRAINDICATIONS: Not to be used as partial casting alloy.

COMPATABILITY: Not to be used with any other devices and with dental cements and ceramics as recommended by American Dent-All, Inc.

REUSE: not intended for patient reuse

WARNINGS: See risks above

ENVIRONMENTAL: No Special environmental requirements.

Note: For best results use at least 50% new metal with 50% sandblasted and cleaned buttons. For clinical use, the product is never to be used more than once.

Rev3

RISKS: This alloy contains Ni & Be, not to be used in individuals with Ni sensitivity. Inhalation of Be dust and fumes can be toxic, grind and polish with adequate ventilation, and wear protective clothing.

WARNINGS: See risks above

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