

SOFT NON-PRECIOUS CERAMIC ALLOY

Made in the USA

TECHNICAL DATA

Melting Range	1165°C - 1207°C
Yield Strength	880 MPa
Tensile Strength	1160 MPa
Elongation	7%
Density	7.9 (g/cc)
Coefficient of the Line 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%

INSTRUCTION OF USE

SPRUEING: Direct for single unit. Based on the size and thickness of crowns use 6-8 gauge sprues. Indirect for multiple units. Use straight 8 gauge, about 1/8" (3 or 4 mm) in length, and connect to the unit.

INVESTING: Use high heat investments; Use debubbler. Use one/two ring liner. After investment, let the gas escape by scrapping the top of the investment.

BURNOUT: Place the ring in the furnace at room temp. (or as high as 600°F = 315°C if needed) increase temp. to 1800°F (982°C) and hold for one hour. Add 10/15 min. for each additional ring.

CASTING: Torch Casting: Use multiple orifice tips: Do Not use crucible used for other alloys. Move the torch to distribute heat evenly. Adjust oxygen regulators at approx. 25-30Lbs. Propane. Adjust valves until the inner flame cone is blue and approx. 1/2" long; the outside of the flame cone should be 3 1/2" 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 cools the cast until the redness goes away. Induction Casting: Set temp. to 2700°F (1480°C). Set the casting arm speed between 425 and 450 rpm. When ingots pool together and shadow disappear, release the arm.

CLEANING: Sandblast the investing with pure non-recycled aluminum oxide. Do Not smooth the surface of the frame bearing porcelain. Use carbides, discs, diamonds and stones for metal finishing.

PREPARATION: Sandblast the area bearing porcelain, and do not touch the area accepting porcelain; clean with ultrasonic cleaner. Degassing the metal is to achieve the desirable oxidation. Place the metal work in a furnace at 1200°F (650°C): create a vacuum and increase the temp. 100°F (38°C) per minute to 1900°F (1035°C); brake the vacuum and let it cool down.

OPAQUE & PORCELAIN APPLICATION: Bonding slurry must be applied to all surface bearing porcelain, apply slurry and dry it quickly in the over with open muffle; fire the slurry coating in ten degrees higher temp., as per instructions for opaque. Quicker method is using the same procedure without degassing. Try to complete opaque firing in a single step.

PORCELAIN APPLICATION: Follow the instructions of the ceramics manufacturers. Build up your porcelain and try to save extra firing.

NOTE: For best results use at least 50% new metal with 50% sandblasted and cleaned buttons.

CAUTION: 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.