

Argeloy NP (Special)

“A nickel-free and beryllium-free alloy, designed to produce high quality porcelain fused to metal restorations.”

Composition

Co	Cr	Mo	Si	Mn	C, Fe
59.5%	31.5%	5.0%	2.0%	1.0%	1.0%

Technical Data

Type	Melting Range °C	Modulus of Elasticity MPa	Density gm/cc	CTE $\times 10^{-6}/^{\circ}\text{C}$ at 25-600°C
PFM	1240-1351	160,000	8.8	14.8

Vickers Hardness DPN		Yield Stress MPa (0.2% offset)		Tensile Stress MPa		Elongation %	
S	H	S	H	S	H	S	H
-	280	-	448	-	766	-	9

Solders

Pre-solder	Argesol NP	
Post-solder	Argesol Lo	Argesol R

Laser Wire

Laser Wire	LWNPCO
-------------------	--------



*Note the colour of this card in no way represents the colour of the alloy.

Argeloy NP (Special)

Argeloy NP (Special) is a nickel-free and beryllium-free alloy with a balance of properties designed to produce high quality porcelain fused to metal restorations. It offers high strength and hardness.

Instructions for use:

Spruing	Single:	Use direct spruing with adequate reservoirs. Use 2.5 mm to 3.5 mm diameter sprues, 10 – 15 mm in length.
	Multiple:	Use indirect spruing with 4.0 mm diameter reservoir bars. Use 2.5 mm diameter sprues from the crowns to the reservoir bar and 3.5 mm diameter sprues from the reservoir bar to the sprue former cone.
Investment:		Use a high quality phosphate-bonded investment. Do not use carbon-containing investments. Maximum expansion is generally required. Follow the manufacturer's instructions.
Burnout:		After adequate bench setting, place the invested ring into a room temperature furnace and raise the temperature to 430°C and heatsoak for 30 minutes. Then raise the temperature to 871°C and heatsoak for a minimum of 50 minutes. For rapid burnout techniques, follow the investment manufacturer's instructions.
Melting:		It is recommended to use a quartz crucible using propane/oxygen or gas/oxygen torch with a multi-orifice tip. As the alloy has a low density, ensure that the casting machine is set at the maximum torque. Place the alloy into a preheated crucible and heat evenly. The individual ingots will not pool together to form a single mass. Do not stir or rupture the oxide surface. When the oxide appears to bubble up, cast. If using an induction casting machine, preheat the empty ceramic crucible. Set the arm speed to 400-450 rpm and set the power to high. Be sure that the alloy is pulsating and slumping. Set the temperature to 1482°C with a 5 second heatsoak. Do not use flux. After casting, allow the ring to bench cool before devesting. Add 50% new alloy to the clean buttons.
Finishing:		Grind the alloy with non-contaminating aluminum oxide stones. After grinding, sandblast with non-recycled 50 micron aluminum oxide grit. Steam clean or clean in distilled water using an ultrasonic cleaner for 5 minutes.
Oxidation:		Insert the casting into the porcelain furnace at 600°C. Raise the temperature to 982°C with vacuum. No hold time. A slightly dark oxide will form. Removal of this oxide is advisable by sandblasting with non-recycled 50 micron aluminum oxide grit, followed by cleaning in distilled water using an ultrasonic cleaner for 5 minutes.
Porcelain application:		Follow the recommendations of the porcelain manufacturer. Ideally the opaque material should be fired in two layers. First, a wash opaque, followed by a regular opaque layer.
Polishing:		The oxide layer is removed using a rubber wheel or a fine sandpaper disc before buffing with polishing wheels or diamond paste.