

Superior **NOBLE WHITE CERAMIC ALLOY**

Superior is a noble palladium-silver alloy for porcelain fused to metal restorations. It features a narrower melting range and improved as-cast microstructure for superior casting performance. The silver concentration is minimized to improve porcelain compatibility over traditional palladium-silver alloys.

PROPERTIES¹

Melting Range	2175°F to 2330°F
Coefficient of Thermal Expansion	
from 25°C to 500°C:	14.2 x10 ⁻⁶ K ⁻¹
from 25°C to 600°C:	14.6 x10 ⁻⁶ K ⁻¹
Density	11.0 g/cm ³
Grain Size	8 microns
Hardness	220 HV
Tensile Elongation	35%
Tensile Yield Strength (psi)	69,000
Ultimate Tensile Strength (psi)	110,000
Modulus of Elasticity (psi)	20.0 x 10 ⁶

CHEMISTRY²

Palladium	62.5%
Silver	24.5%
Tin	9%
Indium	2%
Zinc	2%

Contains less than 1%
Ruthenium, Rhenium

Classification - Noble

Au & Pt Group - 62.5%

PROCESSING TECHNIQUE

WAXING AND SPRUING

Wax to a minimum thickness of .3mm for single units and .5mm for bridge work. Avoid sharp angles and corners. The indirect method of spruing is recommended for multi-units. Use an 8 gauge runner bar with 10 gauge connectors. If preferred, the direct method may be used on both single units and small bridges. Use a 10 gauge sprue 1/4" to 3/8" long. Sprues longer than 3/8" should have a reservoir 1/16" from pattern. Patterns should be a maximum of 1/4" from top of investment.

INVESTMENT

A phosphate-bonded, high heat investment without carbon content is recommended.

BURNOUT

Place in a cold furnace and raise temperature to 700°F. Hold at 700°F for one half hour. Increase temperature to 1550°F and hold for one hour. Increase hold time for larger or multiple rings.

MELTING AND CASTING

Wind casting arm one turn more than used for casting gold. Use a multi-orifice torch with 10 psi fuel and 20 psi oxygen. The alloy will fully puddle and form a ball before it is ready to cast. **DO NOT OVERHEAT. DO NOT USE CASTING FLUX.** The casting temperature is 2435°F.

DEVESTING AND FINISHING

Blast with aluminum oxide to remove investment particles. Finish with aluminum oxide stones. Reblast porcelain receiving surface with non-recycled aluminum oxide. Clean in ultrasonic for 10 minutes in distilled water or denatured alcohol.

CONDITIONING

Oxidize from 1200°F to 1850°F in air. Hold for 5 minutes. Bench cool. Proceed with normal opaque technique.

SOLDERS AND FLUX

Pre-Solder:	PWS
Post-Solder:	1400 Solder
Flux:	Brown Fluoride Flux for both pre and post soldering

¹ Test methods conform to ISO Standard 9693 and ANSI/ADA Standard 38

² Jensen Industries certifies the composition to be within the tolerances of ISO 9693 and ANSI/ADA 38.

