

JPW

HIGH NOBLE WHITE PORCELAIN ALLOY

JPW is a white, high noble porcelain dental alloy with exceptional properties. The alloy has an unusually light oxide, lighter than most other alloys with a similar gold content. This means your opaque will cover the coping easily and completely. JPW's average grain size of 12 microns eliminates hot tears and marginal flaking. Because it contains 15% Ag, it may be a more cost-effective choice when high nobility is desired.

PROPERTIES	
Melting Range	2020° to 2325°F (1105° to 1275°C)
Coefficient of Thermal Expansion	
from 25°C to 500°C:	14.0x10 ⁻⁶ C ⁻¹
from 25°C to 600°C:	14.6x10 ⁻⁶ C ⁻¹
Density	13.6 g/cm ³
Grain Size	12 microns
Hardness	260 HV
Tensile Elongation	12%
Tensile Yield Strength	80,600 psi (555 MPa)
Ultimate Tensile Strength	100,500 psi (695 MPa)
Modulus of Elasticity	13.5x10 ⁶ psi (94,000 MPa)

CHEMISTRY	
Gold	49%
Palladium	31.5%
Silver	15%
Tin	4.5%
Contains less than 1% Rhenium	
Au & Pt group - 80.5%	
Classification - High Noble	

PROCESSING TECHNIQUE

- WAXING** Wax to a minimum thickness of .3mm for single units and .5mm for bridge work. Avoid sharp angles and wax to provide for an even thickness of porcelain.
- SPRUIING** The indirect method is recommended for multi-units. Use an 8 gauge (3mm diameter) runner bar with a 10 gauge (2.5mm diameter) connectors. If preferred, the direct method may be used on both single units and small bridges. Use a 10 gauge (2.5mm diameter) sprue 1/4" to 3/8" (6mm to 9mm) long. Sprues longer than 3/8" (9mm) should have a reservoir 1.5mm from the pattern. Patterns should be a maximum of 6mm from the top of the investment.
- INVESTMENT** A phosphate-bonded, high heat investment with or without carbon content is recommended.
- BURNOUT** 1400°F (760°C)
- MELTING AND CASTING** Wind casting arm one turn more than usual. Use a multi-orifice torch tip with 10 psi gas pressure and 20 psi oxygen pressure. Continue heating until the cloudy surface clears, releasing casting arm. **DO NOT OVERHEAT. DO NOT USE CASTING FLUX.** The casting temperature is 2425°F (1330°C).
- DEVESTING AND FINISHING** Finish with aluminum oxide stones and wheels. Blast with 50 micron (220 mesh) non-recycled aluminum oxide (50 micron-white preferred). Clean castings for 5 minutes in distilled water.
- OXIDATION** Oxidize from 1200°F to 1800°F (650°C to 980°C) at 145°F/min (80°C/min) in air. Bench cool. Proceed with opaque following porcelain manufacturer's instructions.
- SOLDERS AND FLUX** Pre-Solder: Spirit Solder or LX Solder
Post-Solder: 1400 Solder
Flux: Brown Fluoride Flux for both pre and post soldering

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