JP-I

HIGH NOBLE WHITE SILVER FREE PORCELAIN ALLOY

Our interpretation of the classic 52% gold, silver free porcelain dental alloy, **JP-I** has been one of Jensen's most popular PFM alloys for over 30 years. Suitable for all types of restorations, our customers continually tell us that JP-I offers sharper, more stable margins than competitive alloys of this type. JP-I gives the technician a moderate gray, uniform and consistent oxide layer, reliable bonding, and excellent cast ability. JP-I is used with virtually all conventiontional dental PFM ceramics, but prefers low to moderate expansion porcelains that tend to be silver sensitive. A great alloy for Pulse press-to-metal.

PROPERTIES	
Melting Range	2075º to 2220ºF (1135º to 1215ºC)
Coefficient of Thermal Expansion	
from 25ºC to 500ºC:	13.8x10-6C^{-1}
from 25ºC to 600ºC:	14.1x10-6C^{-1}
Density	14 g/cm^3
Grain Size	38 microns
Hardness	240 HV
Tensile Elongation	25%
Tensile Yield Strength	73,000 psi (505 MPa)
Ultimate Tensile Strength	110,000 psi (760 MPa)

CHEMISTRY	
Gold	51.5%
Palladium	38.5%
Indium	8.5%
Gallium	1.5%
Contains less than 1% Ruthenium	
Au & Pt group - 90%	
Classification - High Noble	

PROCESSING TECHNIQUE

WAXING Wax to a minimum thickness of 0.3mm for single units and 0.5mm for bridge work. Avoid sharp angles and wax to provide for an even thickness of porcelain.

SPRUING The indirect method 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" (6mm) to 3/8" (9mm) long. Sprues longer than 3/8" (9mm) should have a reservoir 1/16" (1.5mm) from pattern. Patterns should be a maximum of 1/4" (6mm) from top of investment.

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

BURNOUT 1500ºF (815ºC)

MELTING AND CASTING Wind casting arm one turn more than used for casting gold. Use a multi-orifice torch with 10 lbs. gas and 20 lbs. oxygen. As JP-I melts, a cloudy surface will appear. Continue heating until the cloudy surface clears, before releasing the casting arm. DO NOT OVERHEAT. The casting temperature is 2300ºF (1260ºC). DO NOT USE CASTING FLUX.

DEVESTING AND FINISHING Blast with aluminum oxide to remove investment particles. Shape and finish down metal with aluminum oxide stones. Blast outer surface with non-recycled aluminum oxide (50 micron-white preferred). Clean in ultrasonic for 10 minutes in distilled water.

OXIDATION Oxidize from 1200º to 1850ºF (650º to 1010ºC) at 145°F/min (80°C/min) in air. Hold for 5 minutes at 1850ºF (1010ºC) 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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