

JIV-PF

HIGH NOBLE YELLOW TYPE 4 CROWN & BRIDGE ALLOY

JIV-PF is a high-noble Type 4 crown and bridge alloy. JIV-PF is Pd free and has almost 5% more Au than JIV. Similar to JIV, JIV-PF is suitable for restorations that must endure a high level of stress such as implants, long-span bridges and partial dentures. When it's water-cooled, the alloy is ideal for crowns, inlays, and onlays. JIV-PF has a delightful yellow color that finishes and polishes with ease and accuracy.

PROPERTIES	
Melting Range	1615° to 1670°F (880° to 910°C)
Density	15.9 g/cm ³
Grain Size	33 microns
Modulus of Elasticity	12.9 x 10 ⁶ psi (89 GPa)

CHEMISTRY	
Gold	72.5%
Platinum	2.8%
Silver	10.2%
Copper	13.5%
Contains less than 1% Indium, Iridium, Zinc	
Au & Pt group - 75.3 %	
Classification - High Noble	

	AS CAST	
	BENCH COOLED	QUENCHED
Hardness	230 HV	175 HV
Elongation	18%	40%
Yield Strength	91,370 psi (630 MPa)	57,290 psi (395 MPa)
Ultimate Tensile	101,530 psi (700 MPa)	76,870 psi (530 MPa)

HEAT TREATED	
SOFT	HARD
155 HV	255 HV
46%	18%
47,140 psi (325 MPa)	92,820 psi (640 MPa)
68,170 psi (470 MPa)	105,150 psi (725 MPa)

PROCESSING TECHNIQUE

SPRUIING

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 the pattern. Patterns should be 1/4" (6mm) from the top of the ring.

INVESTMENT

Either gypsum or phosphate bonded investments may be used following the manufacturer's instructions. The burnout temperature should be at least 900°F (480°C) and should not exceed 1200°F (650°C).

MELTING AND CASTING

JIV-PF can be melted with gas and compressed air. When melting with gas and oxygen, set gas pressure at 5 psi bars and oxygen pressure at 10 psi. Cast the alloy when it is fully puddled, balled and free from oxide on the surface. DO NOT OVERHEAT. To obtain the as cast properties, water quench from a dull red heat for quenched properties and bench cool for hardened properties. The casting temperature is 1760°-1850°F (960°-1010°C).

DEVESTING AND FINISHING

Blast with aluminum oxide to remove investment particles and oxidation. Protect margin areas.

HEAT TREATMENT

Anneal at 1350°F (730°C) for 10 minutes then water quench to obtain the softened condition. After annealing, age harden at 450°F (230°C) for 20 minutes to obtain the hardened condition.

POLISHING

Use low speeds and light pressure

1. Rubber wheel with white flexi wheel
2. Polish with tripoli compound using a soft or medium felt wheel and/or a soft bristle brush
3. Polish with rouge using a rag wheel and/or soft bristle brush.
4. Ultrasonically clean in water or ethyl alcohol for five minutes, then shine with tin oxide and soft bristle brush either dry or with ethyl alcohol.

SOLDER AND FLUX

Solder: 615 Fine Solder
Flux: Brown Fluoride Flux

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