

# Bio-84Y

COMPOSITION					
Au	Pt	Pd	Ag	Cu	Other
84	11	0	2	0	Zn In Ti Fe Ir

## Rich Yellow Porcelain Alloy



### APPLICATION

Single Units, Short & Long Span Bridges, Implants

**SOLDER** Pre: PSF Yellow Post: 720, 650, 615

### TECHNICAL DATA

	<u>HARDENED</u>
Vickers Hardness:	185
Proof Stress:	74,000 psi
Tensile Strength:	79,500 psi
Elongation:	5%
Melting Range:	1830-2110°F / 1000-1100°C
Casting Temperature:	2280°F / 1250°C
Density g/cm <sup>3</sup> :	18.1
Thermal Expansion:	14.5 @ 500°C / 14.7 @ 600°C



### TECHNICAL INSTRUCTIONS

**WAXING:** Maintain optimal pattern thickness of 0.3 – 0.5 mm. Build out deficient areas to insure uniform porcelain thickness. Avoid sharp corners and angles. Provide adequate bulk in connection areas.

**SPRUNG:** *Direct:* Attach 8-10 gauge wax sprue with reservoirs to the heaviest portion of the pattern. Keep pattern(s) 1/4" from top of ring.

*Indirect:* Attach 10 gauge wax sprue to the heaviest portion of the pattern(s). Trim to 1/8" and attach a 6 gauge runner bar. Build up crucible former with soft wax and attach runner bar to crucible former with 2 or 3, 8 gauge gate sprues.

**INVESTING:** Use a high heat phosphate bonded investment as per manufacturer's instructions.

**BURNOUT:** *Single Stage:* Room temperature to 1450-1550°F (788-843°C) at medium rate.

*Two Stages:* 1. Room temperature to 800°F (427°C) at 20°F/min.  
2. 800°F (427°C) to 1450-1550°F (788-843°C) at 30°F/min.

Heat soak at 1450-1550°F (788-843°C) for at least 1 hour. Add 15-20 minutes soak time for each additional ring.

**MELTING:** Multi-orifice gas/oxygen torch or induction. Do not use flux. Oxygen pressure should be between 6-9 pounds.

**CASTING:** Allow metal to pool to a shiny mirror surface. Continue heating until the shine is reduced to a dull, flat white color, and cast. Bench cool to room temperature.

**FINISHING:** Use high quality aluminum oxide barrel stones, carbides or sintered diamond points to achieve a smooth scratch-free surface. Blast with 50 micron aluminum oxide. Clean in distilled water using ultrasonic cleaner for 10 minutes

**OXIDATION:** Air fire at 1200-1850°F (650-1010°C). Remove casting and allow to bench cool.

**OPAQUING:** Fire one thin slurry. Use a second coat to mask remaining oxide show through. Bake to an egg shell finish.