

PG-177

COMPOSITION					
Au	Pt	Pd	Ag	Cu	Other
1	0	77	9	1	Ga Sn Zn Ru

White Porcelain Alloy



APPLICATION

Single Units, Short & Long Span Bridges, Implants

SOLDER

Pre: Porc Silver Free Post: 450

TECHNICAL DATA

	<u>HARDENED</u>
Vickers Hardness:	245
Proof Stress:	98,000 psi
Tensile Strength:	124,500 psi
Elongation:	28%
Melting Range:	2010-2300°F / 1100-1260°C
Casting Temperature:	2500°F / 1370°C
Density g/cm ³ :	11.2
Thermal Expansion:	14.3 @ 500°C / 14.5 @ 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 **carbon-free** 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 10 minutes soak time for each additional ring.

MELTING: Multi-orifice gas/oxygen torch or induction. Do not use flux. Do not use carbon crucible. Add 50% of new alloy to the cleaned button(s).

CASTING: Allow metal to pool to a shiny mirror surface 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 1850°F (1010°C) and hold for 5 minutes. A light gray oxide will appear. Blast off this oxide and clean in distilled water using ultrasonic cleaner for 10 minutes.

OPAQUING: Fire one thin slurry. Use regular opaque coat(s) to mask remaining oxide show through.