

# E-3

COMPOSITION					
Au	Pt	Pd	Ag	Cu	Other
46	0	6	39.5	7.5	Zn Sn In

## Yellow Type III Alloy



### APPLICATION

Onlays, 3/4 Crowns, Full Cast Crowns, Short & Long Span Bridges

**SOLDER** 585, 450

### TECHNICAL DATA

	<u>SOFT</u>	<u>HARD</u>
Vickers Hardness:	135	230
Proof Stress:	50,000 psi	84,000 psi
Tensile Strength:	65,000 psi	10,000 psi
Elongation:	30%	13
Melting Range:	1600-1725°F / 870-940°C	
Casting Temperature:	1900°F / 1040°C	
Density g/cm <sup>3</sup> :	12.7	



### TECHNICAL INSTRUCTIONS

**WAXING:** Trim die and define margins. Apply die spacer. Lubricate. Wrap, dip, build up, or vacu-form a coping. Build up with low shrinkage pattern wax. Contour and carve. Trim margins. Smooth polish completed wax up with silk cloth or cotton swab. Sprue.

**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 either a gypsum based or a high heat phosphate-bonded investment as per the manufacturer's recommended instructions.

**BURNOUT:** *Single Stage:* For gypsum based investment, room temperature to 1250°F (677°C) at slow-medium rate. For phosphate-bonded investment, room temperature to 1300°F (704°C) at slow-medium rate.

*Two Stages:* 1. Room temperature to 800°F (427°C) at 20°F/min.  
2. 800°F (427°C) to 1200-1250°F (647-677°C) at 30°F/min.

After reaching 1200-1250°F (649-677°C) heat soak for at least one hour. Add 15-20 minutes soak time for each additional ring.

**MELTING:** Multi-orifice gas/oxygen torch or via induction.

**CASTING:** Allow metal to pool to a shiny mirror surface. Rock crucible gently to insure fluidity. Cast. Bench cool to room temperature.

**CLEANING:** Blast clean with 50 micron aluminum oxide. Clean in distilled water using ultrasonic cleaner for 10 minutes.

**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. Rubber wheel and polish via conventional methods.