

ENDURANCE

HIGH NOBLE YELLOW PORCELAIN ALLOY

ENDURANCE just may be the highest performing yellow ceramic alloy on the market today. Exceptional strength and hardness for an 84.5% gold formulation, a solidus temperature of 1100°C for stability and ease of soldering, tenacious porcelain to metal bonding, and a pleasant light yellow color. ENDURANCE is compatible with virtually any ceramic you'd care to fire on it. For demanding cases requiring a high gold yellow ceramic alloy, ENDURANCE is an exceptional choice.

PROPERTIES	
Melting Range	2005° to 2185°F (1100° to 1195°C)
Coefficient of Thermal Expansion	
from 25°C to 500°C:	14.1x10 ⁻⁶ K ⁻¹
from 25°C to 600°C:	14.4x10 ⁻⁶ K ⁻¹
Density	18.2 g/cm ³
Grain Size	9 microns
Hardness	215 HV
Tensile Elongation	7%
Tensile Yield Strength	74,500 psi (515 MPa)
Ultimate Tensile Strength	90,000 psi (620 MPa)
Modulus of Elasticity	12.8x10 ⁶ psi (88,000 MPa)

CHEMISTRY	
Gold	84.5%
Platinum	8%
Palladium	5%
Indium	2%
Contains less than 1% Iron, Rhenium	
Au & Pt group - 97.5%	
Classification - High Noble	

PROCESSING TECHNIQUE

WAXING AND SPRUING

Wax to a minimum thickness of .3mm for single units and .5mm for bridge work. Avoid sharp angles and corners. The indirect method of spruing 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" to 3/8" long. Sprues longer than 3/8" should have a reservoir 1/16" 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

1300°F (705°C)

MELTING AND CASTING

Extra winds of the casting arm are not required. Use a multi-orifice torch with 10 psi fuel and 20 psi oxygen. The alloy will fully puddle and form a ball before it is ready to cast. **DO NOT OVERHEAT. DO NOT USE CASTING FLUX.** The casting temperature is 2285°F (1255°C).

DEVESTING AND FINISHING

Blast with aluminum oxide to remove investment particles. Finish with aluminum oxide stones (Refer to our *Finishing and Polishing Guide – Yellow Ceramic Alloys* for more information). Reblast porcelain receiving surface with nonrecycled aluminum oxide. Clean in ultrasonic for 10 minutes in distilled water.

OXIDATION

Oxidize from 1200°F (650°C) to 1850°F (1010°C) at 145°F/min (80°C/min) in air with 5 minutes hold time. Bench cool. Proceed with normal opaque technique.

SOLDERS AND FLUX

Pre-Solder: Spirit Solder or LX Solder
 Post-Solder: 615 Solder
 Flux: Brown Fluoride Flux for both pre and post soldering

5060Y r3

