

## CASTELL

### YELLOW CROWN AND BRIDGE ALLOY

**CASTELL** is a noble, yellow, type III crown and bridge casting alloy. It is one of two gold-palladium-indium yellow casting alloys offered by Jensen Industries. It features 20% gold with a yellow gold color, high strength, and low cost. Castell finishes and polishes like a higher gold content alloy.

#### PROPERTIES

Melting Range . . . . . 1560° F to 1735° F  
Density . . . . . 11.0 g/cm<sup>3</sup>  
Hardness. . . . . 175 HV  
Tensile Elongation . . . . . 8%  
Tensile Yield Strength (PSI) . . . . . 40,800  
Ultimate Tensile Strength (PSI). . . . . 75,000

#### CHEMISTRY

Silver. . . . . 38%  
Gold. . . . . 20%  
Palladium. . . . . 20%  
Indium. . . . . 17%  
Zinc . . . . . 4%  
Copper . . . . . 1%

Classification - Noble

### PROCESSING TECHNIQUE

#### SPRUNG

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 pattern. Patterns should be a maximum of 1/4" (6mm) from top of investment.

#### INVESTMENT

Gypsum investment (e.g. Beauty-Cast) is recommended and should be used at a burnout temperature of 1200°F (650°C). Phosphate investments may be used at a burnout temperature of 1300°F (705°C). Hold at the burnout temperature for a minimum of one hour. Add ten minutes for each larger ring size and each additional ring.

#### MELTING AND CASTING

Extra winds of the casting arm are not required. Melt with a reducing flame using gas and compressed air or gas and oxygen with 5 PSI gas and 10 PSI oxygen. **DO NOT HEAT TO POINT OF ALLOY FORMING A BALL.** Cast as soon as a consolidated pool is formed. **DO NOT USE CASTING FLUX.** The casting temperature is 1750°F (960°C). Water quench from a dull red heat.

#### DEVESTING AND FINISHING

Remove castings from investment. Blast with aluminum oxide to remove investment particles and oxidation. Do not pickle. Finish and polish using standard techniques.

#### SOLDER AND FLUX

Solder: 615 Fine Solder  
Flux: Brown Fluoride Flux