

JP-80
HIGH NOBLE YELLOW CERAMIC ALLOY

PROPERTIES

Melting Range 2170°F to 2260°F
Coefficient of Thermal Expansion
 from 25°C to 500°C: 14.3x10⁻⁶C⁻¹
 from 25°C to 600°C: 14.6x10⁻⁶C⁻¹
Density 16.0 g/cm³
Grain Size. 32 microns
Hardness 195 HV
Tensile Elongation 20%
Tensile Yield Strength (PSI) 55,900
Ultimate Tensile Strength (PSI) 74,200

CHEMISTRY

Gold 75%
Palladium 10%
Silver 10%
Platinum 3%
Indium 2%

Contains less than 1%
Rhenium

Classification - High Noble

PROCESSING TECHNIQUE

WAXING

Wax to a minimum thickness of .3mm for single units and .5mm for bridge work. Avoid sharp angles and corners.

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

A phosphate-bonded, high heat investment with or without carbon content is recommended.

BURNOUT

Place in a cold furnace and raise temperature to 1350°F (730°C). Hold at 1350°F (730°C) for one hour. Increase hold time for larger or multiple rings.

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 2350°F (1290°C).

DEVESTING AND FINISHING

Blast with aluminum oxide to remove investment particles. Shape and finish metal with aluminum oxide stones. Blast outer surface with non-recycled aluminum oxide (50 micron-white preferred). Clean in ultrasonic for 10 minutes in distilled water.

CONDITIONING

Oxidize from 1200°F (650°C) to 1800°F (980°C) in air. Hold for 5 minutes. Bench cool. Proceed with opaque following porcelain manufacturer's instructions.

SOLDERS AND FLUX

Pre-Solder: P-80 Solder
Post-Solder: 1400 Solder
Flux: Brown Fluoride Flux for both pre and post soldering

