JP-I
WHITE CERAMIC ALLOY
HIGH NOBLE-SILVER FREE

PROPERTIES	
Melting Range	2075°F to 2220°F
Coefficient of Thermal Expansion	
from 25°C to 500°C:	$13.8 \times 10^{-6} C^{-1}$
from 25°C to 600°C:	$14.1 \times 10^{-6} C^{-1}$
Density	14 g/cm^3
Grain Size	38 microns
Hardness	240 HV
Tensile Elongation	25%
Tensile Yield Strength (PSI)	73,000
Ultimate Tensile Strength (PSI)	110,000

CHEMISTRY	
Gold	51.5%
Palladium	38.5%
Indium	8.5%
Gallium	1.5%

Contains less than 1% Ruthenium

Classification - High Noble

PROCESSING TECHNIQUE

WAXING
Wax to a minimum thickness of 0.3mm for single units and 0.5mm for bridge work. Avoid sharp angles and wax to provide for an even thickness of porcelain.

SPRUING
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 1500°F (815°C). Hold at 1500°F (815°C) for one and one-half hours. Increase hold time for larger or multiple rings.

MELTING AND CASTING
Wind casting arm one turn more than used for casting gold. Use a multi-orifice torch with 10 lbs. gas and 20 lbs. oxygen. As JP-I melts, a cloudy surface will appear. Continue heating until the cloudy surface clears, before releasing the casting arm. DO NOT OVERHEAT. The casting temperature is 2300°F (1260°C). DO NOT USE CASTING FLUX.

DEVESTING AND FINISHING
Blast with aluminum oxide to remove investment particles. Shape and finish down 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° to 1850°F (650° to 1010°C) in air. Hold for 5 minutes at 1850°F in air. Bench cool. Proceed with opaque following porcelain manufacturer's instructions.

SOLDERS AND FLUX
Pre-Solder: Spirit Solder
Post-Solder: 1400 Solder
Flux: Brown Fluoride Flux for both pre and post soldering