# FOUNDATION

## HIGH NOBLE WHITE PORCELAIN ALLOY

**FOUNDATION** is a high noble alloy for porcelain fused to metal restorations. Its exceptional mechanical properties, high melting temperature for ease of soldering, and optimal thermal expansion make FOUNDATION an outstanding alloy for long span bridges when high nobility is desired. FOUNDATION is compatible with Creation, Ceramco II and other similar porcelains.

| PROPERTIES | |
|---|---|
| Melting Range | 2150º to 2335ºF (1175º to 1280ºC) |
| Coefficient of Thermal Expansion | |
| from 25ºC to 500ºC: | $14.1x10\text{-}6C^{-1}$ |
| from 25ºC to 600ºC: | $14.4x10\text{-}6C^{-1}$ |
| Density | $13.9\ g/cm^3$ |
| Grain Size | 25 microns |

| CHEMISTRY | |
|---|---|
| Gold | 51.9% |
| Palladium | 34.0% |
| Indium | 6.0% |
| Silver | 5.0% |
| Zinc | 3.0% |
| Contains less than 1% Rhenium | |
| Au & Pt Group - 85.9% | |
| Classification-High Noble | |

| | Porcelain Fired |
|---|---|
| Hardness | 225 HV |
| Tensile Elongation | 30% |
| Yield Strength, 0.2% Offset | 70,050 psi (485 MPa) |
| Ultimate Tensile Strength | 100,660 psi (695 MPa) |
| Modulus of Elasticity | $12.2x10^6$ psi |

## 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 sprue method is recommended for multi-units. Use at least an 8 gauge runner bar with 10 gauge connectors. The direct method may be used on single units and small bridges. Use no smaller than 10 gauge sprues with reservoirs 1/8" from the patterns. Patterns should be a maximum of 1/4" from top of investment.

**INVESTMENT** A high heat phosphate investment with or without carbon is recommended.

**BURNOUT** 1450ºF (790ºC)

**MELTING AND CASTING** One extra wind of the casting arm is recommended. 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 2430ºF (1330ºC).

**DEVESTING AND FINISHING** Blast with aluminum oxide to remove investment particles. Finish with carbides or aluminum oxide stones. Reblast porcelain receiving surface with non-recycled aluminum oxide. Clean in ultrasonic for 10 minutes in distilled water or denatured alcohol (high purity only).

**OXIDATION** Oxidize from 800ºF to 1800ºF (500ºC to 980ºC) at 145°F/min (80°C/min) under vacuum with no hold time. The oxide should have a neutral grey color. Please note: degassing in air can form a green oxide. If this occurs, sand blast the metal, ultrasonic clean and re-oxidize under vacuum.

**SOLDERS AND FLUX** Pre-Solder: PWS or LX Solder
Post-Solder: 1400 Solder
Flux: Brown Fluoride Flux for both pre and post soldering.

5219Y r2

Jensen Industries, Inc.
50 Stillman Road
North Haven, CT 06473 USA

EC REP
Jensen GmbH
Gustav – Werner Str. 1
D-72555 Metzingen
Freecall: 0800-8 57 32 30
info@jensendental.de www.jensendental.de

Jensen Technical Service is available 8:00 AM - 8:00 PM EST by calling **1-800-243-2000**

JENSEN DENTAL