

# INTEGRITY

## NOBLE WHITE PORCELAIN ALLOY

A white, noble, 75% Pd porcelain dental alloy with a small percentage of silver, INTEGRITY is considered to be “tried and true.” INTEGRITY’s uniform, light-gray oxide makes opaque coverage easy. Well known for its small grain size, INTEGRITY is resistant to hot tearing. INTEGRITY has a coefficient of thermal expansion that works with all major porcelains on the market.

PROPERTIES	
Melting Range	2050° to 2375°F (1120° to 1300°C)
Coefficient of Thermal Expansion	
from 25°C to 500°C:	13.8x10 <sup>-6</sup> C <sup>-1</sup>
from 25°C to 600°C:	14.1x10 <sup>-6</sup> C <sup>-1</sup>
Density	10.9 g/cm <sup>3</sup>
Grain Size	15 microns
Hardness	250 HV
Tensile Elongation	30%
Tensile Yield Strength	79,200 psi (545 MPa)
Ultimate Tensile Strength	114,000 psi (790 MPa)
Elastic Modulus	13.7x10 <sup>6</sup> psi (94,500 MPa)

CHEMISTRY	
Palladium	75%
Silver	7%
Gold	6%
Indium	6%
Gallium	6%
Contains less than 1% Ruthenium, Rhenium	
Au & Pt group - 81%	
Classification - Noble	

### PROCESSING TECHNIQUE

- WAXING** Wax to a minimum thickness of 0.4mm for single units and 0.5mm for bridge work.
- SPRUING** Indirect spruing with 10 gauge sprues from an 8 gauge runner bar is recommended. If multiple units are individually sprued in a single ring, units should be separated by a minimum of 4mm (3/16”).
- INVESTMENT** A high heat phosphate bonded investment must be used. A carbon free investment is preferred.
- BURNOUT** 1450°F (790°C)
- MELTING AND CASTING** Melt in a high heat crucible using a multi-orifice torch with gas pressure at 10psi and oxygen pressure at 20psi. The ingots will melt together forming a single fluid pool. Heat with the reducing portion of the flame. Cast after heating for 10 seconds after the melt surface appears free of oxides. The casting temperature is 2475°F (1355°C). Do not use a casting flux.
- DEVESTING AND FINISHING** Finish all surfaces to receive porcelain coverage with aluminum oxide stones and discs. Blast surfaces with nonrecycled, 50 micron, white aluminum oxide at a pressure of 80psi. Ultrasonically clean for 10 minutes in distilled or deionized water.
- OXIDATION** Oxidize under vacuum by heating from 1200° to 1850°F (650° to 1010°C) at 145°F/min (80°C/min). Hold for 5 minutes under vacuum at the upper temperature. Remove, bench cool, and proceed with opaquing according to the porcelain manufacturer’s instructions.
- SOLDERS AND FLUX** Pre-Solder: Spirit Solder or LX Solder  
 Post-Solder: 1400 Solder  
 Flux: Brown Fluoride Flux for both pre and post soldering

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