

STABILITY

NOBLE WHITE SILVER FREE PORCELAIN ALLOY

A silver-free, 77% Pd porcelain alloy, STABILITY is perfect for just about any type of restoration from single units to long-span bridges. STABILITY contains 2% Au and finishes to a high luster while offering a strong resistance to tarnishing and plaque.

PROPERTIES	
Melting Range	2050° to 2210°F (1120° to 1210°C)
Coefficient of Thermal Expansion	
from 25°C to 500°C:	13.5x10 ⁻⁶ C ⁻¹
from 25°C to 600°C:	13.9x10 ⁻⁶ C ⁻¹
Density	10.7 g/cm ³
Grain Size	9 microns
Hardness	300 HV
Tensile Elongation	20 %
Tensile Yield Strength	103,230 psi (719 MPa)
Ultimate Tensile Strength	128,620 psi (890 MPa)

CHEMISTRY	
Palladium	77%
Copper	10%
Gallium	7%
Indium	4%
Gold	2%
Contains less than 1% Zinc, Ruthenium	
Au & Pt group - 79%	
Classification Noble	

PROCESSING TECHNIQUE

WAXING	Wax to a minimum of .3mm for single units and .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 without carbon is recommended.
BURNOUT	1450°F (785°C)
MELTING AND CASTING	Wind casting arm one turn more than used for casting gold. Use a multi-orifice torch with 10 psi gas and 20 psi oxygen. Add 50% new metal to button. Use a high heat crucible. Heat the button and ingots until they pool together. After the alloy becomes molten, count slowly to 10 before releasing the casting arm. The casting temperature is 2300°F (1260°C).
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.
OXIDATION	Oxidize from 1200°F (650°C) to 1850°F (1010°C) at 145°F/min (80°C/min) under vacuum. Remove and bench cool. Proceed with opaque according to 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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