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AURITEX-ZP CERAMIC ALLOY TECHNIQUE OUTLINE

Auritex-ZP is a palladium-silver based precious metal ceramic alloy (60% palladium: 29 % silver) designed for use in applications where cost considerations preclude the use of gold alloys.

Wax-up: Minimum section thickness should be no less than 0.3 mm. Use 8 gauge sprues. Sprue length should not exceed ¼ inch.

Investing and Burnout: Use Aurivest investment or equivalent. Carefully follow manufacturer's recommended liquid to powder ratio. To prevent air entrapment in mold during casting, the pattern should be covered by no more than ¼ inch of investment. Burn out at 1500° F for a minimum of 45 minutes or according to manufacturer's recommended time.

Casting: If a spring loaded centrifugal casting machine is used (Kerr, Torit or Emesco), lock casting machine arm in position after winding three full turns. Use a standard alumina or mullite type crucible that has not been previously used for a different alloy. Avoid graphite crucibles or the use of carbon, asbestos or flux in contact with the metal during melting. If an automatic induction-casting machine is used, do not use a graphite insert in the crucible. Melt using a gas-oxygen flame with the inner cone of the flame about ½ inch long. To avoid excessive preferential oxidation of some of the alloying constituents, maintain the tip of the inner cone at a minimum distance of ½ inch from the metal. Cast at a temperature where the metal appears to flow freely but do not overheat. The metal should not be heated to the point where visible oxide vapors start rising from its surface. Quench after 4 to 5 minutes to allow the ring to bench cool.

Preparation for Porcelain: Remove adhering investment with brush and ultrasonically clean. If a sandblast is used, maintain air pressure below 30 psi to avoid damaging margins. Rough grind with a hard mounted stone all metal surfaces to which porcelain is to be applied. Heatless stones are not recommended. Place in 50% hydrofluoric acid solution for 15 minutes. Discard acid after it is severely discolored. Rinse with clean distilled water. Avoid contact with fingers.

Degas at 1950° F for a total of 5 minutes. The first 3 minutes should be in air and the final 2 minutes in vacuum. After this step take particular caution to avoid contact between the metal surface and fingers or any other foreign object that could leave a contaminant deposit on the surface.

Sandblast lightly with fine aluminum oxide abrasive at a pressure not in excess of 30 psi. After most of the heavy dark oxide layer appears to have been removed, clean in distilled water in an ultrasonic cleaner.

Alternatively the bond between the metal and porcelain can be enhanced by use of Aurident's Vanguard Bonder. If Vanguard Bonder is used, the need to degas is eliminated and additionally the golden color of the Vanguard Bonder will enhance the chroma and hues of the porcelain. Follow instructions with the bonder to apply.

Surfaces are now ready for application of opaque, according to manufacturer's instructions.

Recommended Solders: WCS, PSF