PD CASTA H (MMI-PD-CASTA-H) updated Oct 30, 2015

Partial Denture Dental Casting Alloy

Technical Specifications

Melting range (°C)	1,388 - 1,431
Yield strength (MPa)	640
Tensile strength (MPa)	711
Elongation (%)	3.4
Density (g/cc)	8.33
Vickers hardness (HV)	384

Composition

Cobalt	60.0%
Chromium	29.0%
Molybdenum	6.2%
Nickel	2.0%
Iron	2.0%
Carbon	<1%
Silicon	<1%
Manganese	<1%

Investment

Use investment recommended by manufacturers only for high heat Chromium-Cobalt Partial Denture alloy. Follow the manufacturers instructions carefully. Phosphate base investments, water or liquid is recommended.

Torch Casting

1. Multi-orifice tips are recommended.
2. Set gauges to 20 psi oxygen and 8 psi acetylene.
3. Light the torch; for better results allow the blue inner flame to expend not more than 1/8"; (3 mm), and the outer flame approximately 1½"; (38 mm) from the torch tip.
4. Place sufficient alloy in the preheated crucible.
5. Heat the alloy uniformly. Cast immediately after slumping to avoid excessive burning.

Induction Casting

Follow the manufacturer's instructions; set the temperature to 2700°F (1480°C). When the metal has melted as one mass; release the machine immediately to avoid overheating.

Finishing

1. Use thin cut-off wheels to remove buttons by cutting sprues close to the casting, and trim remaining metal from sprues and shape with heavy cut-off wheels.
2. Use barrel shape stones to grind the surface of lingual and palatal bars, and shape the finish line areas on upper cases.
3. Use inverted cone type stones to trim or grind tight areas.
4. Do not stone stippled surfaces; electro polish the high shine.
5. Casting should be ready for sandblasting and polishing.

Electro Polishing

Use Electro Polishing units that are recommended for high heat Chromium-Cobalt Partial Denture Alloys; Follow the manufacturer's instructions; remove the case from the solution and rinse thoroughly with running water; go over entire case and remove all surface marks with rubber wheels and points.

Welding & Soldering

1. Clean by grinding or sandblasting the surface of the areas and then invest.
2. Thick areas should be ground to shape so that the top of the surface is wider than the bottom.
3. Adjust the torch to one (1) psi oxygen and one (1) psi acetylene.
4. After lighting the torch adjust to neutral flame with approximately ½"; (12mm) blue cone extending from the torch tip.
5. Heat the welding rod and dip it into the flux: heat both parts of welding areas.
6. Clean the case in an ultrasonic cleaner.

Recommended solder: Use cobalt based dental solder recommended by solders manufacturer.

Note

For best results use at least 50% new metal with 50% sandblasted and cleaned buttons.

Caution: This alloy contains Nickel. Not to be used on individuals with Nickel hypersensitivity.

600 N. Mountain Avenue, Suite D204, Upland, CA 91786 · p: 909.931.0688 · f: 909.931.0908 · e: info@mountainmedico.com