

# EMDIN INTERNATIONAL CORPORATION

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## Mollybond-503 PORCELAIN TO METAL ALLOY

Mollybond-503 is a Nickel-Chromium based alloy acceptable for use in fabrication of dental prosthetics and reconstruction.

LOT \_\_\_\_\_ KG: \_\_\_\_\_ OZ \_\_\_\_\_ P.N. 1965-1405 Rev. \_\_\_\_\_

### **CHEMISTRY**

NICKEL = 65.75% NOMINAL.  
CHROMIUM = 21.5% NOMINAL LBS.  
MOLYBDENUM = 9.00% NOMINAL  
NIOBIUM = 3.75% NOMINAL

### **PHYSICAL PROPERTIES:**

Co-Efficient of Expansion, @ 500°C =  
13.5 x 10<sup>6</sup>  
Elongation = 16%  
Ultimate Strength = 76,000 psi; 524 MPa  
Yield Strength = 40,000 psi; 276 MPa  
Casting Temperature = 2400°F-2450°F  
1315°C-1343°C

### **TECHNICAL INSTRUCTIONS**

WAXING:  
0.3 mm thickness

SPRUNG:  
8 gauge wax (3.0 – 3.5 mm) sprues, direct  
or indirect with a runner bar, put reservoirs  
opposite all pontics.

INVESTING:  
High heat phosphate bonded investment.  
Mix under vacuum (1 - 1 1/2 min.)

### **BURNOUT:**

Two-Stage burnout technique is recommended  
Stage #1: Room Temp. to 315 deg C, hold for 30 min.  
Stage #2; 315 deg C to 875 deg C, hold for 60 min.  
Single stage burnout: room temp. to 875 deg C,  
hold 60 min.

### **CASTING:**

Induction casting with argon is recommended.  
Use multiple orifice torch, preheat 100% quartz  
crucibles 20 psi oxygen + 10 psi propane gas  
Heat ingots evenly until they all “slump”  
Use 50% new alloy when recasting buttons

### **CLEANING:**

Sandblast with 50 micron white aluminum oxide  
at 5 - 6 cm Hg (80 psi).  
Use only aluminum oxide wheels and discs.  
Ultrasonic cleaner with distilled water for 3 -5 min.

### **WARNING: Caution:**

**• This alloy contains nickel and should not  
be used for individuals with known nickel  
Sensitivity.**

**• Please use alloy in accordance with the  
MSDS sheet supplied with the product.**