

# emdin | instructions

## HI-THERM

### HIGH HEAT CROWN & BRIDGE CASTING INVESTMENT

#### Instructions for use

*HI-THERM is an excellent all purpose high heat casting investment. When used according to instructions, HI-Therm will yield most consistent castings in semi-precious and non-precious alloys of all types. HI-THERM is designed to provide you with consistency from batch to batch. Most competitively priced, HI-THERM will save you time and money while at the same time giving you very satisfactory quality castings.*

#### **1. Properties At 100% Liquid:**

Liquid to Powder Ratio: 17 /100

Working Time: 3 to 5 minutes

Setting Time: 7 to 10 minutes

Setting Expansion: 1.0 %

Thermal Expansion: 1.2 %

Hygroscopic Expansion: 2.0%

Compression Strength at 60 minutes: 1000 PSI

#### **Recommended Liquid Dilution:**

Semi-precious alloys: 2 part liquid to 1 part water

Non-precious alloys: 3 part liquid to 1 part water

#### **ADJUSTING EXPANSION:**

**To INCREASE expansion:** Use one or more of the following:

Increase use of liquid. Example 4 parts liquid to 1 part water.

Use Hygroscopic Technique at 100 degree F.

Use softer wax.

**To DECREASE expansion:** Use more water and/or harder wax.

#### **IMPORTANT**

**High temperatures and high humidities may shorten the working and setting time. In these instances you may refrigerate the liquid which will increase the working and setting times.**

#### **2. DIRECTIONS**

Follow instructions of the alloy manufacturer with respect to the spuring technique. Leave at least 1/4 inch space between the top of the pattern and the top of the casting ring. Also leave enough space between patterns and also from ring.

Line the casting ring with a suitable liner. Use thicker or double liner when casting a longer span bridge.

Paint the patterns with **MAXIFILM**, the finest debubbler for vacuum mixing and investing, to reduce the surface tension on the patterns.

Mix investment mechanically under vacuum for 30 to 45 seconds at 400 rpm. Increase mixing time another 15 seconds if mixing at 200 rpm. Hold the mix under vacuum for 30 seconds and then pour into the casting ring from its sides under gentle vibration.

Allow casting ring to bench set for 60 minutes. Scrape away investment skin at the top of the ring to allow gases to escape freely during burn-out procedure

Remove crucible former and place the casting ring into a burn-out oven. Raise temperature to 1400 to 1700 degree slowly over at least 60 minutes, longer for larger molds. Top temperature should be that recommended by the alloy manufacturer. In general semi-precious alloys should be cast at 1300 to 1400 degree F, whereas the non-precious alloys should be cast at 1500 to 1700 degree F. Heat soak the flask for 30 minutes, longer if there are several flasks in the oven, before casting. Add 15 minutes soaking time for each additional flask in the burn-out oven. Cast as usual.

Manufactured by:

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