

ERNST HINRICHS GmbH

Dental and gypsum products



THERMAL

THERMAL is a fine flowing, gypsum bound and graphite free jewellery investment for precious alloys and all low alloys with a maximum casting temperature of 1.200°C. THERMAL can be used as a conventional and speed casting investment.

Technical data:

Mixing liquid:	distilled water	Final setting time:	30 - 45 min.
Powder : liquid:	100 g powder : 32 - 33 ml	Compressive strength:	4 MPa
Mixing under vacuum :	45 - 60 sec.	Max. preheat temperature	800°C
Working time:	6 – 8 min.	Setting expansion:	0.6 – 0.8 %
Initial setting time:	12 - 15 min.	Linear THERMAL expansion:	0.8 – 0.9%

1. Mixing. Weigh out the correct amount of THERMAL and sprinkle it into the distilled water. Allow to soak for approximately 20 sec. and briefly spatulate manually before mixing under vacuum for 45-60 seconds. Always use a special mixing bowl and never allow THERMAL to come into contact with phosphate-bonded investments. As with all plaster-bonded investments, the setting expansion of THERMAL is regulated by the powder to water ratio. Using less distilled water gives a higher setting expansion and using more distilled water gives a lower setting expansion.

2. Investing (2 step method). First the mixed compound is applied by means of a soft hair brush to the previously degreased wax model until the model is coated with a layer approx. 0,5 cm thick. Closely follow the contours of the piece when applying this coating to provide a uniform layer over the complete wax model. The core produced in this way is to be left in the air for approx. 30 to 40 minutes.

Once this has been done the second investing process is to be carried out. This is done by freshly mixing the investing compound to the same consistency as used for the first investing layer. Now either the core is to be inserted in the muffle filled with bedding compound or the muffle is to be placed over the core fastened to the sprue cone and the compound poured into it. The core has to be moistened with fresh pulp or water to ensure good adhesion of the compound to the hardened core before investing in the muffle. Once the investing compound has hardened, remove the casting pin or sprue cone and place the muffle in a preheating furnace.

3. Investing (new method). Smear the casting ring with Vaseline and line with asbestos-free liner. Use a double thickness of liner with larger rings and ensure that the liner extends slightly above the top edge of the ring. It is not necessary to use wetting agent on the wax pattern. Fill the rings using light vibration and do not vibrate after filling. Then leave to set for 30 – 45 minutes.

4. Pressure investing. Pressure casting is **not required** due to the homogenous grain distribution of this investment.

5. Preheating

a) Conventional preheating: Place the casting ring in a cold furnace and heat to 270°C at a rate of 5°C per min. and hold at this temperature for 30 – 60 min. depending on the size of the casting ring. Then heat to the final temperature recommended by the alloy manufacturer (max. 700°C) at a rate of 7 – 9°C per minute. Final hold time 30 – 60 min. depending on the size of the casting ring.

b) Speed casting: THERMAL can be speed cast and placed in a preheated furnace 40 – 50 min. after investing. Maximum preheat temperature is 700°C. The holding time with muffle ring #3 takes 60 min., with muffle ring #6 about 90 min.

6. Casting. THERMAL is suitable for use with all dental casting systems. It is essential to follow the manufacturer's instructions.

7. Devesting. THERMAL is easily devested after the casting ring has completely cooled down to room temperature (the casting button should face downwards!). Soaking before devesting under running water is recommended.

8. Storage. Like all gypsum-bonded investments, THERMAL reacts according to the amount of humidity. It is therefore absolutely essential to close the container and ensure that it is airtight after use. THERMAL can be stored for 12 months in an airtight and properly sealed container.

Note: We guarantee perfect quality, but if used for other purposes, we are not liable for results which are generally beyond our control. The recommendations for technical use are based on tests and experience gained in our development laboratory. These recommendations can only be regarded as guidelines. All ERNST HINRICHS products are subjected to strict quality controls. We reserve the right to make technical changes.

WARNING: Inhaling silicate dust is a health risk. Use a safety mask.

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