



ResinVest™

**Phosphate investment for
resin partial denture patterns**

ResinVest™ is a high performance phosphate investment designed to meet all your partial dental framework casting needs when using printed resin patterns. It features rapid burnout as well as easy pouring and divesting capabilities. In addition, ResinVest™ provides the widest expansion range and the best surface qualities of any investment available. To ensure success with ResinVest™, please follow the instructions carefully.

Recommended Liquid: Special Liquid Concentrate – Plus

WARNING: Investments contain free silica — DO NOT BREATHE DUST.
May cause delayed lung injury (silicosis/lung cancer).

1. Pattern Preparation:

- Attach sprue to the resin pattern using pliable sticky wax.
- Mount patterns on crucible former base.
- Spray with Whip Mix SMOOTHEx Wax Pattern Cleaner. Gently blow excess cleaner from pattern.
- Place ring onto former base.

2. Mixing:

For best results, store and use powder and liquid at room temperature (between 20° C (68° F) and 25° C (77° F)).

- Prepare liquid at suggested concentration following the chart below (distilled water recommended for dilution).
- Rinse bowl with water and shake out excess. Use separate mixing bowls for phosphate and gypsum investments.
- Add measured liquid to mixing bowl. Incorporate powder by hand spatulating for 10 – 15 seconds.
- Mechanical mix under vacuum, slow speed (350 – 600 RPM) for **2 minutes (120 seconds)**.
- Mixing large volumes of ResinVest (over 500g) may require a reduced mix time (90 seconds.)

Note: Different paddle designs and mixer speed may require varying mixing time.

3. Benchset:

- Once the mold is poured, benchset 30 minutes minimum.
- Trim glaze off top of mold before burnout.

4. Burnout:

Note: Use rapid burnout method for benchsets up to 1 hour. For benchsets longer than 1 hour, conventional burnout is recommended. Molds allowed to set more than 12 hours should be re-wet prior to burnout by soaking in water for 1–3 minutes.

Rapid Technique (Preheated Oven):

- Place molds in preheated oven at alloy manufacturer's recommended temperature, minimum of 760°C (1,400°F) maximum 925°C (1,700°F).
- For burnout temperatures above 925°C (1,700°F), heat to final temperature at 14°–20°C (25°–36°F) per minute.
- Heat soak at final temperature for 60 minutes (1 hour), add 10 minutes more per additional mold.

Note: Maximum preheat entry temperature for metal ring is 870°C (1,600°F).

Two-Stage Burnout:

- Place molds in oven at room temperature.
- First stage - Raise oven temperature 8°–11°C (14°–20°F) per minute to 427°C (800°F), hold 30 minutes.
- Second stage – Raise oven temperature 14°–20°C (25°–36°F) per minute until final temperature is reached. Follow alloy manufacturer's recommended temperature with a minimum of 760°C (1,400°F), maximum 925°C (1,700°F).
- For burnout temperatures above 925°C (1,700°F), heat to final temperature at 14°–20°C (25°–36°F) per minute.
- Heat soak at final temperature for 60 minutes (1 hour), add 10 minutes more per additional mold.

Standard Technique (Conventional Burnout)

- Place molds in oven at room temperature.
- Heat to desired temperature at 14°–20°C (25°–36°F) per minute. For final temperature, follow alloy manufacturer's recommended temperature with minimum of 760°C (1,400°F), maximum 925°C (1,700°F).
- For burnout temperatures above 925°C (1,700°F), heat to final temperature at 14°–20°C (25°–36°F) per minute.
- Heat soak at final temperature for 60 minutes (1 hour), add 10 minutes more per additional mold.

5. Casting (Alloy):

- Upon removal from oven, immediately cast according to alloy manufacturer's instructions.

6. Divesting:

- Allow metal castings to cool completely before divesting.

Note:

- **Special Liquid Concentrate – Plus may freeze during shipment in cold weather. If liquid should have crystallized upon arrival, it will no longer be usable. Keep liquid from freezing.**

Physical Properties:

Liquid/Powder Ratio	22 ml/100 gram
Working Time	6–8 minutes
Setting Expansion	1.6%
Thermal Expansion	0.65%
Compressive Strength	1,350 psi (9.2 MPa)

Liquid to Powder Ratio; 22 ml:100g

Example: Use 88 ml Total Liquid (Liquid + Water) with 400g ResinVest.

Liquid Concentration

Example: A Liquid concentration of 75% with 400g ResinVest would be:

Special Liquid	Water	Total Liquid
66 ml	22 ml	88 ml

The above ratio should be considered a starting point.

Technical Tips for ResinVest

Alloy Casting

Rough Casting Surface

Use water-based debubbler (i.e. Smoothex) and be sure to blow patterns dry.

Make sure vacuum mixing unit is functioning correctly as ResinVest should be mixed under vacuum.

Hold mix under vacuum for an additional 30 seconds after mixing.

Replace worn mixing bowl.

Tight Fit

Increase liquid concentration (liquid to water ratio) but still maintain 22ml total (liquid + water)/100g ResinVest. Maximum expansion is achieved by using 100% Special Liquid Concentrate Plus.

If still tight at 100% liquid concentration, reduce total liquid by 1-2 ml per 100g ResinVest.

Decrease mixing time in 30 second increments (this may increase expansion).

Replace worn mixing bowl.

Avoid overheating the alloy. Refer to the alloy manufacturer's instructions.

Loose Fit

Decrease liquid concentration (liquid to water ratio) but still maintain 22 ml total (liquid + water)/100g ResinVest.

Mold Cracking/Exploding

When using a ringless casting system, provide a minimum of 10mm investment from the edge of the ring.

Reduce number of patterns in a ring.

Decrease mix time to 90 seconds. **Note:** This may increase expansion.

If using a ringless casting system, remove mold at 30 minutes. Trim the top then allow the mold to benchset an additional 10 minutes.

If using Rapid Technique, reduce entry temperature to 650°C (1200°F) hold for 20 minutes then raise temperature 14°–20°C (25°–36°F) per minute to final temperature. Heat soak as directed.

Consider using a two-stage burnout.

If mold has dried out, place trimmed mold in a bowl of room temperature water for 1-3 minutes prior to burnout.

Overnight burnout may require placing molds in a plastic bag to avoid investment drying out and cracking. Standard or two-stage burnout recommended.

Investment Setting Too Fast

Store investment and liquid at room temperature of 20°–24°C (68°–75°F).

Cool bowl by running it under cold water prior to mixing. Shake out excess water from bowl before adding measured liquid and powder.

Keep temperature of mixed investment under 30°C (86°F).

Replace worn mixing bowl.



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