RESINIFY — INSTRUCTIONS FOR USE (IFU)

Product Name: WaxCast — High-Precision Wax-Filled Castable Resin **Intended Use:** For Jewelry Investment Casting

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1. Product Overview

WaxCast is a premium wax-filled castable photopolymer engineered for high-precision jewelry patterns. The material produces smooth surfaces, sharp detail, and clean burnout with minimal ash residue. WaxCast is optimized for gold, silver, and brass casting workflows that require predictable burnout performance and consistent production results.

2. Intended Use

WaxCast is designed for:

- Jewelry patterns used for investment casting
- Filigree, micro-pavé, and high-detail designs
- Production casting and small-batch manufacturing
- DLP/mSLA 385–405 nm 3D printers

3. Storage & Handling

- Store between **18–28°C (65–82°F)**.
- Shake gently before every print — wax-filled materials can settle slightly.
- Keep the bottle closed when not in use.
- Filter resin through a 190–220 µm filter before returning to the bottle.

4. Printing Instructions

Recommended baseline settings for 50 µm layers:

Setting	Recommendation
Layer Height	50 µm (25 µm for very fine detail)
Normal Exposure	2.8–3.8 sec
Bottom Exposure	30–45 sec
Bottom Layers	4–6
Lift Speed	Slow–Medium
Light-Off Delay / Rest Time	Enabled (improves layer bonding)

Supports & Orientation:

- Angle delicate rings 30–45° from the build plate.
- Add extra supports for sprues, prongs, and signet surfaces.
- For filigree jewelry: use light supports but increase the number of contact points.

Mixing:

- Stir gently every 1–2 hours for long prints.
- Avoid aggressive mixing (can introduce bubbles).

5. Cleaning Instructions

Two-Stage Wash (Required for Best Cast Quality):

1. **First Wash:** 20–30 seconds in fresh IPA (or approved resin cleaner). Gently agitate — *do not over-wash; it may soften detail.*
2. **Second Wash:** 20–30 seconds in a cleaner bath (fresh IPA or TPM-type cleaner). Remove immediately once resin residue is gone.

Drying:

- Allow parts to air dry for **10–15 minutes**.
- Use compressed air gently for small cavities.

Important: Do not leave WaxCast submerged in IPA. Long exposure removes wax content and damages casting behavior.

6. Post-Curing Instructions

UV Cure (Low-Temperature Cure Only):

- Cure for **5–10 minutes maximum** under 405 nm UV.
- Keep temperature **below 40°C (104°F)**.
- Over-curing can harden the wax matrix and negatively affect burnout. *Note:* WaxCast is designed to burn out cleanly *without full polymer crosslinking*. A light cure is sufficient.

7. Investing Instructions

Compatible Investments:

- R&R Ultra-Vest, Plasticast, Gold Star investments
- Any gypsum-bonded, vacuum-mixed jewelry-grade investment

Best Practices:

- Mix investment under vacuum for 90–120 seconds.
- Vibrate gently to remove trapped air (avoid aggressive vibration).
- Position the wax tree away from flask walls to prevent cracking.
- Let flasks bench-set for **at least 2 hours** before placing in the kiln.

8. Burnout Schedule (Standard Cycle)

Standard Burnout (Gypsum-Bonded Investment):

Step	Temperature	Time
Ramp 1	Room Temp → 300°C (570°F)	2 hours

Step	Temperature	Time
Hold	300°C	1 hour
Ramp 2	300°C → 730°C (1350°F)	2 hours
Hold	730°C	2 hours
Pour	500–600°C flask temp (alloy dependent)	—

Notes:

- Slow ramps prevent investment cracking.
- For thick or solid parts: extend 300°C hold to 2 hours.
- For platinum: final burnout can be raised to **850°C** if investment allows.

9. Casting Recommendations

- WaxCast behaves similarly to a medium-hard wax pattern.
- Ideal for: Gold (all karats), Silver, Brass, Bronze.
- For sterling silver: ensure full burnout time to avoid micro-ash defects.

Tips for Best Surface Finish:

- Ensure parts are dry before investing.
- Do not over-cure.
- For filigree: reduce flask vibration to avoid damaging delicate features.
- For large pieces: use additional vents and sprue channels.

10. Post-Casting Cleanup

- **Quench according to alloy:** Silver/brass: quench in water immediately after color change. Gold: allow minimal cooling before quench.
- Use ultrasonic cleaning to remove residual investment.
- Surface finish can be improved via polishing, tumbling, or sandblasting.

11. Safety & Disposal

- Wear gloves and eye protection when handling uncured resin.
- Avoid skin contact and prolonged IPA exposure.
- Cure waste resin before disposal.
- Dispose of IPA according to local chemical regulations.
- **Do not burn uncured resin directly.**