

CAST | INVESTMENT CASTING RESIN

1. Product Overview

CAST™ is a next-generation, wax-free investment casting resin designed for ultra-fast printing and clean burnout performance. It delivers exceptional accuracy and fine detail for intricate castings, from jewellery to industrial components.

The unique formulation enables rapid layer curing, smooth surface finish, and minimal post-processing effort.

With its easy-burn, low-emission behaviour, CAST™ leaves virtually zero residue after burnout (<0.003%).

2. Key Features & Benefits

- ✓ Wax-free formula for rapid, precise printing
- ✓ Clean burnout with virtually no residue (<0.003%)
- ✓ Supports fast burnout cycles (as short as 6 hours)
- ✓ Minimal expansion during burnout, no cracking
- ✓ High accuracy for fine detail and thin features
- ✓ Print large parts without support failures
- ✓ Compatible with MSLA printers

3. Applications

- ★ Dental prosthetic frameworks
- ★ Crown and bridge structures
- ★ Orthodontic appliances and expanders
- ★ Implant bars and superstructures
- ★ Precision attachment components

4. Physical Properties

Property	Value	Test Method
Viscosity @ 25 °C	200–400 cps	ASTM D2196
Odour	Low	VDA 270
Shelf Life	24 months	Internal QC
Optimal UV Cure	365–405 nm	Internal
Cure Speed	Fast (2–3 sec layers)	Internal
Tensile Strength (MPa)	40	ASTM D638
Elongation at Break (%)	3	ASTM D638
Young’s Modulus (GPa)	1.5	ASTM D638
Shore Hardness (D)	88	ASTM D2240
Heat Deflection Temp (°C)	62	ASTM D648

5. Casting Cobalt-chrome Burnout Procedure

1. Increase temperature to 300°C at a rate of 8°C per minute.
2. Hold at 300°C for 1 hour.
3. Increase temperature to 500°C at the same ramp rate.
4. Hold at 500°C for 1 hour.
5. Increase temperature to 1050°C at the same ramp rate.
6. Hold at 1050°C for 1 hour to allow full heat soak
7. Proceed with casting.

Alloy	Melting Range
Cobalt chrome (CoCr)	1300°C to 1450°C
Nickel chrome (NiCr)	1200°C to 1400°C
Gold alloys (high noble and noble)	900°C to 1100°C
Silver palladium alloys	1000°C to 1200°C
Titanium	Approx. 1660°C
Stainless steel	1400°C to 1450°C

10. Disclaimer

The information provided in this Technical Data Sheet is based on laboratory testing and intended as a general guideline. Actual results may vary depending on printing conditions, curing methods, and environmental factors. Monocure3D assumes no liability for improper use of this product.

6. Printing & Post-Processing Guidelines

Tested with: Anycubic M7 / Phrozen Mini 8K

Layer thickness 50–100 µm
Base layer exposure 30–35 seconds
Normal exposure 2–3 seconds
Lift speed 70 mm/s
Lift height 8–12 mm



(Refer to printer settings database)

Post-Processing Steps

1. Wash in ResinAway® or IPA immediately after printing.
2. Ultrasonically clean in ResinAway® for 5 to 10 minutes.
3. Dry using compressed air or allow to air dry naturally.
4. Post-cure under UV light for a minimum of 30 minutes.
5. Cast within one week of printing.
6. Avoid exposure to humidity, as this may cause cracking.
7. Store printed models away from heat, humidity, and direct sunlight.

7. Health & Safety Information

- **When casting:** wear heat-resistant gloves, face shield, and protective clothing. Work in a well-ventilated, heat-safe area away from flammable materials.
- **Refer to the Complete User Guide for full safety procedures.**
- Not intended for intraoral or direct food contact use.
- When printing: Use in a ventilated area and avoid skin and eye contact. If contact occurs, wash thoroughly with soap and water.
- **Refer to the SDS (Safety Data Sheet) for complete handling guidelines at www.monocure3d.com.au**

8. Storage & Handling

- **Storage Temperature:** 10 - 30°C (Avoid direct sunlight)
- **Shelf Life:** 36 months
- **Handling:** Use recommend red PPE eg. **gloves & safety goggles** when handling liquid resin
- Disposal: Follow local hazardous waste disposal regulations.

9. Ordering Information

- **Available Sizes:** 1kg & 5kg UV-safe bottles
- **Where to Buy:** Available through **Monocure3D resellers**
- For technical support or bulk orders, contact:

✉ support@monocure3d.com.au | 🌐 www.monocure3d.com.au