



The industry's only complete Print-to-Cast (P2C™) System for Jewelry features burnout cycles engineered to support both overnight and one-hour workflows.

R&R Castable Resins provide a validated Print-to-Cast (P2C™) System for jewelry, fully compatible with FlashCast™, Plasticast® PT, Plasticast®, Liberty-Vest™, and SC-RP investments. Offering clean burnouts and flawless results with flexible burnout cycles that support traditional and flash-fire.

Jewelry Castable resins

- P2C™ Fine
- P2C™ Bold

R&R's P2C™ Jewelry resins are specialized resins: Fine engineered for capturing the finest details in intricate filigree work, and Bold, formulated for exceptional results with heavy, bulky designs. Both offer jewelers the versatility to achieve precise, high-quality casts.

Compatible Investments – Developed to work with R&R's resins for high and low temperatures.

High Temperature

- FlashCast™
- Plasticast® PT

FlashCast™ and **Plasticast® PT** are high-performance investment systems designed for jewelry casting, both offering high expansion and strength to ensure reliable burnout and strong mold integrity. FlashCast™ is optimized for producing smooth castings supporting a fast, one-hour flash fire burnout process. Plasticast® PT is designed for delivering extra-high expansion and strength while maintaining excellent surface quality.

Low Temperature

- Plasticast®
- Liberty-Vest™
- SC-RP

The Jewelry Castable resins offer the only fully validated Print-to-Cast (P2C™) solution designed for jewelers, ensuring optimal results with R&R's trusted investments like Plasticast®, LibertyVest™, and SC-RP. Engineered for seamless compatibility, these resins deliver reliable burnout and superior surface quality.

Compatible Equipment

- Vulcan® burnout furnace
- Foil Lined Rings

Print-to-Cast System Process:

Step 1: Castable Printing

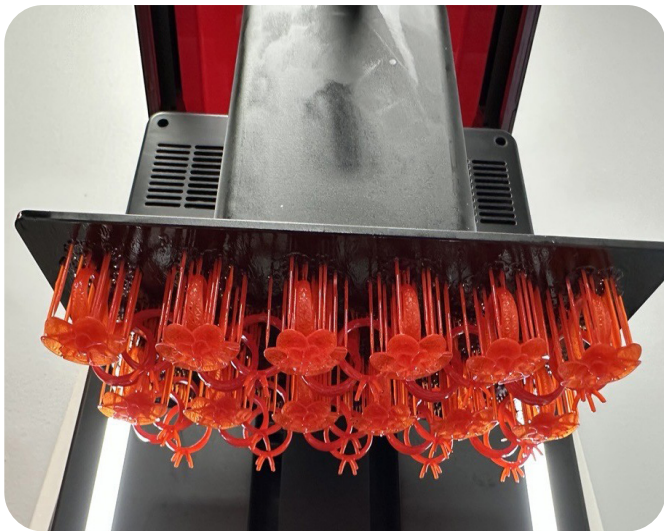
Thoroughly mix the resin. This step is necessary to re-disperse any pigment sediment at the bottom. Insufficient mixing may result in color deviations and print failures.

Prepare the STL file by importing it into the corresponding slicing software. Ensure proper design and placement of support structures to avoid print failures. Ensure the print platform is clean, dry, securely placed, and locked on the platform arm. Follow the printer manufacturer's instructions during operation.

Step 2: Post-Processing

Carefully detach the printed objects from the build platform using a firm spatula. Remove support structures as needed.

- Clean the print objects in two steps, using isopropyl alcohol (IPA) baths:
 - **Dirty Wash:** Clean for 2 minutes in a reusable IPA solution.
 - **Clean Wash:** Thoroughly clean for 2 minutes using IPA solution.
- Allow the parts to dry completely, which may take up to 30 minutes. For faster drying, gently use compressed air. If post-processing cannot be completed immediately, leave the printed patterns in the printer until ready.



Step 3: Post-Curing

Post-cure the cleaned print objects according to the manufacturer's instructions for the curing unit to ensure complete polymerization and stability before casting.

Note: Steps 1–3 apply to both High and Low Temperature Investments.

*High Temperature Investing pages 3–5.

*Low Temperature Investing pages 6–7.



High Temperature P2C Process:

FlashCast™

Step 4: Pattern Setup

Lightly polish the part with a rotary brush to remove any remaining support marks.

Using a rubber base, sprue the patterns in a conventional manner, either by attaching wax sprues or utilizing printed sprues.



- Using FlashCast requires a removable flask.

Step 5: Investing the Flask

1. Weigh out the required amount of investment and water/liquid for flask size.



2. Hand spatulate for approximately 10–20 seconds to wet out the powder, then mix under vacuum for 60 seconds at 250–350 RPM.
3. Pour the mixed investment into the ring using the normal techniques to avoid trapping air (i.e., vibration, rolling, brushing, etc.).

Step 6: Bench Cure

After a 20–minute bench cure, remove the base and the tear-away flask.

- To help gases escape, remove glazed surfaces prior to burnout.
- During bench cure, the mold will heat up and will melt the wax patterns.

Step 7: Burnout

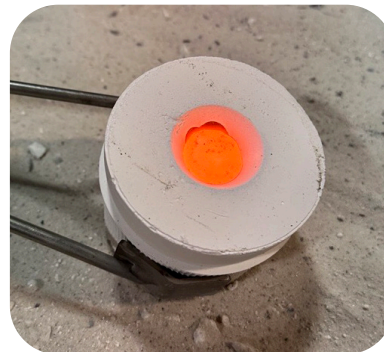
Place the flask in a preheated oven to 1500–1700°F (816–927°C), or at the mold casting temperature recommended by the alloy manufacturer. Allow oven to stabilize and cast after a minimum of 1 hour.



Step 8: Casting

Follow the alloy manufacturer's recommended metal and mold temperatures.

Step 9: Divesting & Cleanup



Allow the mold to air cool naturally instead of quenching in water. When removing the casting from the mold, use proper personal protective equipment to avoid inhaling dust particles.



High Temperature P2C Process:

Plasticast® PT

Step 4: Pattern Setup

Lightly polish the part with a rotary brush to remove any remaining support marks.

Using a rubber base, sprue the patterns in a conventional manner, either by attaching wax sprues or utilizing printed sprues.



Step 5: Investing the Flask

1. Weigh out the required amount of investment and water/liquid for flask size.
2. Mix 1 minute.
3. Vacuum for 1 minute.



4. Pour into the flask, avoid pouring directly onto the pattern. Apply vibration if possible. Do not fill the flask all the way; just enough to cover the pattern.
5. Vacuum up to 90 seconds.
6. Top off the flask with vibration if possible.

Step 6: Bench Cure

Immediately transfer the invested flask to a vibration free storage area. It is extremely important not to disturb the flask during the initial hardening process.

Allow the investment to sit undisturbed (bench cure) for 1 hour.

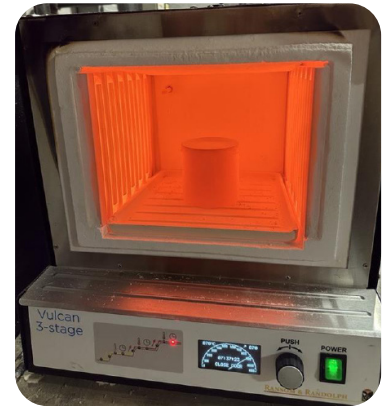
Step 7: Burnout

After bench curing for 1 hour, remove the sprue base. Load into furnace.

*For the burnout cycle, proceed to page 5.

Step 8: Casting

Follow the alloy manufacturer's recommended metal and mold temperatures.



Step 9: Divesting & Cleanup

Allow the mold to air cool naturally instead of quenching in water.

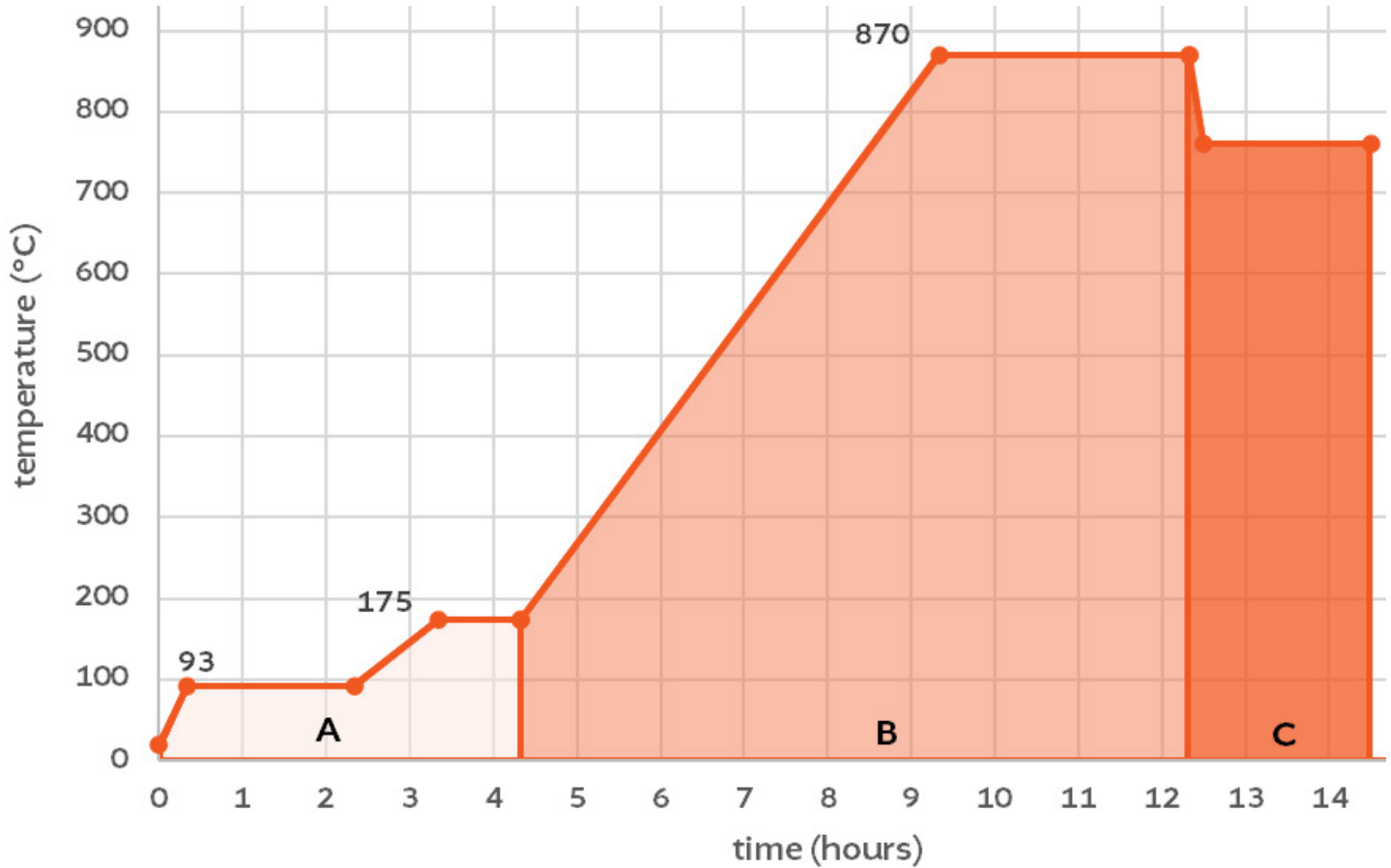


When removing the casting from the mold, use proper personal protective equipment to avoid inhaling dust particles.



High Temperature P2C Process: Burnout Cycle

Plasticast® PT



Burnout Schedule		Phase	Time (hours)	Schedule °C	Schedule °F
A	Dry	Ramp	As Fast As Possible		
		Hold	2	93	200
		Ramp	1	1.4 °C/min	2.5 °F/min
		Hold	1	175	350
B	Pattern Removal	Ramp	5	2.3 °C/min	4.2 °F/min
		Hold	3	870	1600
C	Casting	Ramp	As Fast As Possible		
		Hold	2	Alloy Manufacturer's Recommendations	

*These results are based on the testing methods, frequency and procedures of Ransom & Randolph or its approved suppliers. The levels referenced herein are only for general guidance and do not constitute a firm specification.



Low Temperature P2C Process:

Plasticast®, Liberty-Vest™, & SC-RP

Step 4: Pattern Setup

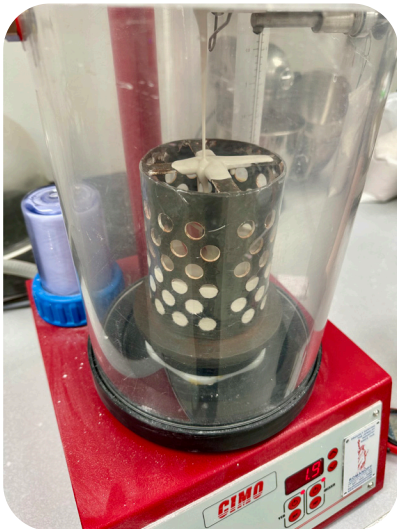
Using a rubber base, sprue the patterns in a conventional manner, either by attaching wax sprues or utilizing printed sprues.



- If the flask is perforated, wrap it with clear tape to contain the investment.

Step 5: Investing the Flask

1. Always add the preweighed quantity of investment to water. Adding the water to the powder will make it difficult to mix and will affect the working time.



2. Wet out the powder with a mixing paddle or a wire whip. This should take no more than 30 seconds.
3. Mix with a mechanical mixer for 3 minutes.
4. Place the mixed investment in a vacuum chamber and apply enough vacuum to cause a rapid boil. The

investment should be vacuumed until it rises and breaks. Do not exceed 2 minutes.

5. Pour the vacuumed investment into and down the side of the flask. Avoid pouring it directly over the patterns to prevent wax pattern breakage. Fill flask at least 1" (2.54 cm) over pattern
6. Vacuum the invested flask about 1½ minutes. Vibrating or tapping the flask during this operation will assist in releasing air bubbles from the pattern/investment interface.

Step 6: Bench Cure

Immediately transfer the invested flask to a vibration free storage area. It is extremely important not to disturb the flask during the gloss-off phase as well as during the initial hardening process.

Allow the investment to sit undisturbed (bench cure) for 2–6 hours.

After bench curing for 2–6 hours, remove the sprue base and investing collar.

Step 7: Burnout

Flasks should be loaded into a burnout oven, preheated to 300°F (150°C), button side down.

Flasks should be elevated at least 1" (2.54 cm) above oven floor to allow proper air circulation and wax drainage.

- Do not place flasks too close to the heat source or to each other.

*For the burnout cycle, proceed to page 7.

Step 8: Casting

Cast at mold casting temperatures per alloy supplier.



Step 9: Divesting & Cleanup

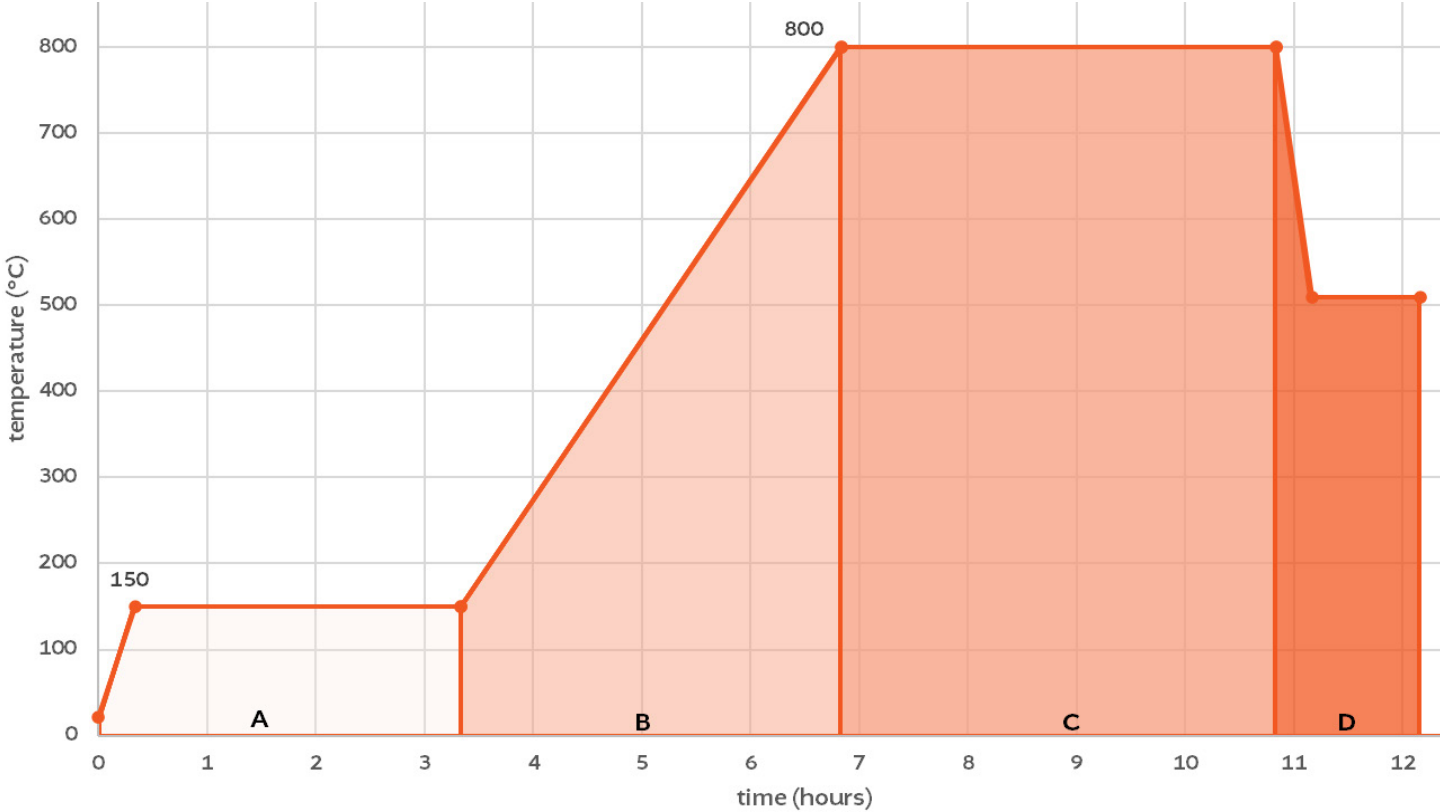
Divest with a typical quenching process via a waterbath.

When removing the casting from the mold, use proper personal protective equipment to avoid inhaling dust particles.



Low Temperature P2C Process: Burnout Cycle

Plasticast[®], Liberty-Vest[™], & SC-RP



Burnout Schedule		Phase	Time (hours)	Schedule °C	Schedule °F
A	Dry	Ramp		As Fast As Possible	
		Hold	3	150	300
B	Thermal Transition	Ramp	3.5	3°C/min	5.6°F/min
C	Pattern Removal	Hold	4	800	1470
D	Casting	Ramp		As Fast As Possible	
		Hold	1	Alloy Manufacturer's Recommendations	

*These results are based on the testing methods, frequency and procedures of Ransom & Randolph or its approved suppliers. The levels referenced herein are only for general guidance and do not constitute a firm specification.



Safety

When working with 3D printing resins, investment materials, and casting processes, always wear appropriate personal protective equipment (PPE), including gloves, safety glasses, and a mask. Follow all manufacturer safety guidelines for handling materials. See SDS for more information.

Contact

For questions regarding the P2C System or its process, please contact technical support by emailing jewelrytech@ransom-randolph.com

Availability

P2C™ Bold Jewelry™ resin

1 kg (2.2 lb.).....1730050

P2C™ Fine Jewelry™ resin

1 kg (2.2 lb.).....1730060

FlashCast™ investment

USA

44 lb. (20 kg) box.....427417

INTERNATIONAL

50 lb. (22.7 kg) box.....27417

FlashCast™ binder

USA & INTERNATIONAL

32 fl oz. (0.95 L) bottle.....27410

Plasticast® PT investment

USA

44 lb. (20 kg) kit.....64810

INTERNATIONAL

44 lb (20 kg) kit.....64810

Each kit includes investment powder and a 64 oz (1.9L) liquid binder.

Plasticast® investment

USA

44 lb. (20 kg) box.....40121

100 lb. (45.4 kg) pail.....0110

INTERNATIONAL

50 lb. (22.7 kg) box.....0121

50 lb. (22.7 kg) bag.....0105

100 lb. (45.4 kg) pail.....0110

Available with BANDUST™ technology for less respirable silica.

LibertyVest™ investment

USA

36 lb. (16.4 kg) sewn bag.....68181

44 lb. (20 kg) box.....468180

100 lb. (45.4 kg) pail.....68182

INTERNATIONAL

50 lb. (22.7 kg) box.....68180

100 lb. (45.4 kg) pail.....68182

SC-RP investment

INTERNATIONAL

50 lb. (22.7 kg) box.....31409

50 lb. (22.7 kg) bag.....31408

Vulcan® burnout furnace

USA & INTERNATIONAL

Single-stage 100-120 V.....5355730002

Single-stage 200-240 V.....5355730001

3-stage 200-240V.....5355740001

3-stage 100-120V.....5355740002

3-stage 200-240V.....5355740003

3-stage 100-120V.....5355740004

Foil Lined Rings

200 count box.....71000

To order, visit Shop.Ransom-Randolph.com, contact your region's R&R Customer Service Team, or contact an authorized distributor. For a list of authorized distributors, visit Ransom-Randolph.com/Distributors.