ROMANOFF
INTERNATIONAL SUPPLY CORPORATION

Plasticast®investment

Strength for Casting Plastic or Wax/Plastic and Rapid Prototype Pattern Materials

Plasticast investment was developed, and is ideally suited for, the investing and burnout of commonly used plastic or wax/plastic pattern materials. The high expansion of these pattern materials requires an equally high expanding, extra high strength investment. Plasticast investment provides jewelry casters with a mold material that meets those demands while maintaining mold surface and dimensional integrity. Plasticast investment provides a smoother, cleaner casting surface not obtainable with standard brands of investment. Plasticast investment is designed for easy removal in water.

Typical Material Properties*

Water/Powder Ratio	Water Temperature	Working Time	Setting Time	Slump
38 parts water to 100 parts powder by weight	72–73°F (22–23°C)	10–10.5 minutes	<20 minutes	114–121mm

*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.

Application Instructions

1. Weigh the required amount of Plasticast investment. To determine the proper amount of water and powder to use per flask, use the online flask calculator located at www.ransomrandolph.com or calculate the volume of your flask ($V = \pi r^2 h$) and multiply by the appropriate factor in the chart below.

	W:P 38/100		W:P 39/100		W:P 40/100		W:P 41/100		W:P 42/100	
	Per in^3 volume	Per cm^3 volume	Per in^3 volume	Per cm^3 volume	Per in^3 volume	Per cm^3 volume	Per in^3 volume	Per cm^3 volume	Per in^3 volume	Per cm^3 volume
Investment Needed										
Grams Pounds Ounces (Weight)	21.0 0.05 0.74	1.28	20.7 0.05 0.73	1.26	20.4 0.04 0.72	1.25	20.1 0.04 0.71	1.23	19.8 0.04 0.70	1.21
Water Needed										
Grams Pounds Fluid Ounces	8.00 0.02 0.28	0.49	8.10 0.02 0.29	0.49	8.20 0.02 0.29	0.50	8.20 0.02 0.29	0.50	8.30 0.02 0.29	0.51

2. Measure or weigh the required amount of water (1 g = 1 ml, 1 fluid oz = 29.6 ml) and place in mixing bowl.
   Note: changes in temperature affect working time, to reduce variations, water and powder temperatures should be held to 72–75°F (22–24°C). Working time is defined as the time the powder is added to the water to the time the investment becomes thick.
   Note: deionized water is recommended to maintain consistency of the working time.
3. 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.
4. Wet out the powder with a mixing paddle or a wire whip. This should take no more than 30 seconds.
   Note: if using a vacuum investment mixing unit, mix with no vacuum on slow speed until the powder is completely wetted (approximately 1 minute).

9 Deforest St. Amityville NY, 11701 | sales@romanoff.com | 1-631-842-2400 | romanoff.com

Plasticast®investment

5. Mix with mechanical mixer for 3 minutes. Good mixing is important to activate essential ingredients that make the investment perform to its fullest potential.
   Note: if using a vacuum investment mixing unit, start vacuum, increase mixing speed and mix for an additional 3 minutes.
6. 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. If a longer time is required, the vacuum pump may be undersized, there may be an air leak or the vacuum system may be in need of repair.
7. 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.
   Note: if using a vacuum investment mixing unit, pour the investment down along the inside of the flask allowing it to flow up, around, through and over the top row of patterns.
8. 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. Release vacuum and fill the flask to the top of the metal edge. Do not overfill.
   Note: if using a vacuum investment mixing unit, after flasks are filled, continue to vacuum for 1½ to 2 minutes. Vibration may be applied, if available.
9. 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.
10. To achieve appropriate green strength, allow the investment to sit undisturbed (bench cure) for 2–6 hours.
    Note: if bench cure will exceed 6 hours, maintain moisture by rewetting, covering with a wet cloth and sealing in a plastic bag. This will reduce potential cracking of molds due to uneven drying.
11. After bench curing for 2–6 hours, remove the sprue base and investing collar.
12. Ideally, 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.
    Note: if loading into a cold oven, 300°F (150°C) temperature must be reached as fast as possible.
13. If steam dewax is used, transfer the flasks immediately from dewax into an oven preheated to 300°F (150°C). Do not allow flasks to stand at room temperature for more than 10 minutes.
14. Follow the pattern burnout schedule suitable for your application.
    Note: pattern burnout schedules described are recommendations. Adjustments may be required for various furnace types, flask sizes and oven loading.

Pattern Burnout Schedule				
		Flask size: up to 3" x 3" (7.6 cm x 7.6 cm)	**Flask size: up to 4" x 6" (10.2 cm x 15.2 cm)**	**Flask size: up to 4" x 8" (10.2 cm x 20.3 cm)**
Water Removal	Ambient to 300°F (150°C) as fast as possible (can be preheated)	Hold 1 hour	Hold 3 hours	Hold 3 hours
Thermal Transition	Raise to 700°F (370°C)	Raise over 1 hour Hold 1 hour	Raise over 2 hours Hold 2 hours	Raise over 2 hours Hold 2 hours
Pattern Removal	Raise to 1350°F (730°C)	Raise over 2 hours Hold 2 hours	Raise over 2 hours Hold 2 hours	Raise over 3 hours Hold 3 hours
	Reduce to casting temperature and allow for stabilization	Hold 1 hour	Hold 2 hours	Hold 2 hours

Note: refer to the mold casting temperatures recommended by your alloy supplier.

ROMANOFF®
INTERNATIONAL SUPPLY CORPORATION

Plasticast®investment

Important Tips

- Use deionized water for best results.
- Investment should always be added to the water.
- Equipment must be kept clean and free of set investment.
- Close the protective bag tightly in the container of unused investment powder and close the container when not in use.
- Always store investment in a dry area.
- Leave a minimum clearance from the patterns of ¼" (.05 cm) at the sides and 1" (2.54 cm) at the top and bottom.

North America: Danger. Contains crystalline silica. May cause cancer by inhalation. Causes damage to lungs through prolonged or repeated exposure by inhalation. See SDS for more information.
EU: Danger. Contains respirable crystalline silica. Causes damage to lungs through prolonged or repeated exposure. See SDS for more information.

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user. All potential liability related to the sale and use of this product is limited to the cost of the particular goods sold in their respective transactions.