

Plasticast® Investment

Jewelry Investment for Casting Plastic or Wax/Plastic Pattern Materials Instructions for VisiJet® FTX Green material

PLASTICAST investment was developed, and is ideally suited for, the investing and burnout of commonly used plastic or wax/plastic pattern materials such as VisiJet® FTX Green material utilized in 3D Systems ProJet® 1200 3D Printer. The high expansion of these pattern materials requires an equally high expanding, extra high strength investment.

PLASTICAST investment provides a smoother, cleaner casting surface not obtainable with standard brands of investment. PLASTICAST investment is designed for easy removal in water.

1. Prepare patterns by dipping tree in a suitable debubbler/pattern wash solution. Drain thoroughly and dry prior to investing.
2. Measure the water and weigh the investment powder at a ratio of 38 parts water to 100 parts powder (38 ml water per 100 g powder). Deionized water is required for maximum strength.
Note: for best results, adjust water temperature between 75°F-80°F (24°C-26°C).
3. Add the investment powder to the water.
4. Using a spatula, mix contents, by hand, until the powder is thoroughly wetted. Using a mechanical mixer, mix on low speed for 1 minute and on medium speed for an additional 2 minutes.
5. Place mixing bowl under vacuum. Vacuum until the investment slurry rises in the bowl, the bubbles break and begin to boil vigorously. Continue to vacuum for 1 minute.
Note: due to the nature of this formula, the investment will rise higher in the mixing bowl than standard investments during initial vacuuming. For mix sizes larger than half the volume of the mixing bowl; after mixing, transfer the investment slurry into the largest container that will fit under your bell jar. This will accommodate the extra rise, thus avoiding spillage. Disregard this note if a vacuum investing machine is used.
6. Pour the investment down along the inside of the flask, allowing it to flow up, around and over the top of the patterns. Leave a minimum of $\frac{3}{8}$ " space between the sides of the flask and $\frac{3}{4}$ " at the top and bottom.
7. Place flask under vacuum and de-air for 1-½ to 2 minutes. Apply slight vibration to the vacuum table to assist in the removal of trapped air bubbles.
8. After vacuum cycle is completed, top off flask with investment, if necessary.
Note: for best results, cycle time should not exceed 9 minutes.
9. Remove flasks from vacuum table and allow to set undisturbed for a period of 2-4 hours. 2 hours is recommended for small flasks (2-½" X 2-½") and 4-5 hours is recommended for large flasks. If allowed to bench-set overnight, submerge flask in water for 1 minute before loading into the oven for burnout.
Note: to achieve the very best surface quality, proper investment curing times are critical for obtaining maximum fired strength. Curing times may vary due to differences in room temperature and relative humidity.
10. Remove sprue base.



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Burnout (Actual Times May Vary)		
6 Hour Cycle 2-1/2" x 2-1/2" flasks (6-1/2 cm x 6-1/2 cm)	8 Hour Cycle 3-1/2" x 4" flasks (9 cm x 10 cm)	12 Hour Cycle 4" x 8" flasks (10 cm x 20 cm)
2 hours at 300°F (149°C)	2 hours at 300°F (149°C)	2 hours at 300°F (149°C)
Note: this step removes water.		
1 hour at 700°F (371°C)	2 hours at 700°F (371°C)	2 hours at 600°F (315°C)
Note: this step burns out the pattern. The larger the amount of pattern material, the longer the hold.		
2 hours at 1350°F (732°C)	3 hours at 1350°F (732°C)	3 hours at 900°F (482°C)
1 hour heat soak at mold casting temperature	1 hour heat soak at mold casting temperature	4 hours at 1350°F (732°C)
		2 hours heat soak at mold casting temperature

After the metal is cast and solidified, the investment may be removed by plunging the hot flask into room temperature water or by using a deflasking machine with a hydraulic cylinder to push out the investment and cast tree.

Warning!

Contains respirable crystalline silica (RCS). Do not breathe dust. May cause delayed lung injury (silicosis, pneumoconiosis). Follow OSHA Safety and Health Standards for crystalline silica. See Material Safety Data Sheet (MSDS) for detailed information.

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