

SC-PT INVESTMENT



Designed for Casting Platinum-Based Alloys by Centrifugal Technique

SC-PT investment is simply mixed with water, as opposed to special liquids or binders, often required with other platinum investments. To achieve optimal performance from SC-PT investment, R&R recommends following the investment mixing instructions below. Some minor variations in technique may be implemented to optimize the procedure for your specific flask size and mixing equipment.

Flask Preparation

Note: The inside of the flask should not be lined.

1. For the base, cut an absorbent paper with sides about 2-3 inches longer than the diameter of the flask.
2. Center the wax tree or button on the absorbent paper. The flask should be at least 1" taller than the tree. The patterns should be at least ½" from the sides of the flask.
3. Using a thick layer of sticky wax on the outside of the flask, seal the flask to the absorbent paper. Avoid using sticky wax on the inside of the flask so that the investment is not weakened.
4. Place the entire setup on a layer of cardboard or wood to support it when handled.
5. Place a rubber or tape collar around the top of the flask to extend 2-3" above the top of the flask. A larger extension may be necessary for taller flasks.

Investment Mixing

Note: Small amounts of gypsum or phosphate investment will adversely contaminate SC-PT investment and cause improper mixing and setting. Do not mix with any other investment.

1. Use a water-to-powder ratio of 32-34 ml water to 100 grams SC-PT investment.
Note: Deionized water is recommended.
2. Carefully measure both the water and powder. Add the deionized water to the mixing bowl first, then the powder and start blending by hand.
3. Begin mixing with the lowest speed setting. Any powder that was not added initially should be added as soon as the mixer can handle it.
4. After 2 minutes of mixing, stop the mixer and scrape down the sides of the bowl and mixing blade to ensure all the powder is incorporated. Repeat this step after 5 minutes of mixing.
5. As mixing continues the material will transition from a granular appearance to a very fluid appearance. Mix for a total of 12 minutes.

Investing

1. Place the entire mix in a vacuum. The mixture should boil vigorously for 25 seconds.
2. Without inclining the flask, pour the mix down the side of the flask. Avoid pouring directly onto any of the patterns. Fill the flask to about 1" above the patterns.
3. Place the flask in a vacuum. Allow the mix to boil vigorously for 45 seconds. Incorporate vigorous vibration during the vacuuming stage.
4. Release the vacuum and top off the flask to a height of 1½" above the flask top. A larger height might be needed for taller flasks.
5. Allow the flask to set undisturbed in a warm, dry room overnight (14-16 hours). The flask should NOT be placed on an absorbent surface, as excessive liquid removal from the base of the flask will not give optimal results.



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Decanting

1. After setting undisturbed overnight, decant (pour off) the excess water that formed on the top. If water reappears, a second decant may be necessary.
2. Typically, the top will be dry in about 1 hour after decanting. The collar can be removed once the top is dry. In small increments, carefully trim off any material which is above the top of the flask.
3. Before placing in an oven, the absorbent paper, that makes up the base, should be carefully removed without disturbing the button or sprue.

Burnout

1. Place the flask in an oven at 250°F and hold for 2 hours.
2. Ramp to 750°F over the next 2 hours. When the water has finished evaporating, the top surface takes on a cracked glassed finish.
3. Hold at 750°F for 1 hour. It is important not to exceed 800°F for the first 5 hours so that the evaporating water does not crack the investment.
4. Ramp to 1600°F over the next 2 hours and hold for at least 1 hour. The actual time needed will depend on the flask size, number of flasks in the oven, type of oven, and type of pattern material being burned away.
5. Ramp down to the desired mold casting temperature and hold there for at least 1 hour. As in the previous step, the actual hold time will depend on flask size, number of flasks, and type of oven.

Storage & Handling

Avoid skin or eye contact. Avoid breathing dust. Wear protective equipment during handling. Wash thoroughly after handling. 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.

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Issue Date: November 2, 2023

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