

MINERALS & COLORANTS

SLIP MIXING INSTRUCTIONS

How to Mix Lowfire Slip & Stoneware

Ingredient	Pctg	Pre-Blend	Six-Bag
Clay	100	50 lbs	300 lbs
Sodium Silicate	0.35	1-1/4 oz	8 - 12 oz
Soda Ash	0.06	1/2 oz	3 oz
Barium Carbonate	0.03	1/4 oz	1-1/2 oz
Water	42.5	2-1/2 gal	15 gal

Barium Carbonate is an optional deflocculant helper that neutralizes sulfur present in the clay or water.

1. Place water in your mixing tank.
2. Add Barium Carbonate, Soda Ash and half of the Sodium Silicate.
3. With the mixer, begin adding the clay. Start with talc, and end with ball clay.
4. When the slip starts to thicken and doesn't want to accept any more clay, slowly add more Sodium Silicate. Remember, you can always add more, but can't take it out!
5. Add more clay. Repeat steps 4 & 5 until all clay is added.

SLIP ADDITIVES

Liquid Materials

	Pint	Quart	Gallon
CH359 Sodium Silicate	\$3.85	\$4.80	\$12.00
CH318 Darvan	\$7.00	\$10.00	\$25.00

Dry Materials

	1 lb	5 lb	10 lb
CH357 Soda Ash	\$3.00	\$5.00	\$9.00
CH304 Barium Carbonate ...	\$5.00	\$13.75	\$24.00

(CAUTION: Barium Carbonate is POISONOUS!)

Testing Your Slip

Test your slip two ways:

1. **Weigh it on a kitchen scale.** The correct weight of a pint of slip (minus the weight of the jar) is 27.2 to 28.0 ounces. Adjust with water if slip is too heavy, or add clay if too light.
2. **Use a viscosimeter drip test.** This is your test for flow rate, which affects how pouring and draining molds. A proper drip time depends on the volume of slip you test. Using the viscosimeter, we like a reading of 36 to 40 seconds. Adjust carefully, if necessary, with sodium silicate or Darvan for your preferred flow rate.
3. **Some molds need different slip consistencies.** Molds for very small or delicate objects (like Christmas ornaments) or molds with very small pour holes, may need thinner, more liquid slip. Adjust or thin small quantities of your slip separate from the main body of your slip batch.

Make Your Own Viscosimeter

Start with an 18" length of 2" PVC pipe, readily available from your local hardware or builder's supply store. You will need a cap for one end of the pipe. Drill a 1/4" hole in the cap, and screw it onto the pipe. Fill the tube to the top, using your finger as a stopper in the cap's hole. Move your finger to begin the flow. Time how long it takes to empty the tube. Stop your count when there is a break in the steady flow of slip. Don't count all the time it takes for the last drips to fall out. This should take 35-40 seconds.

When mixing your own slip, overdeflocculation of your liquid slip is a major concern. Errors in this area are often NOT CORRECTIBLE. Use Sodium Silicate sparingly! DO NOT ADD IT ALL AT ONCE: add only as needed. If you reach the maximum amount in your batch and slip is still not flowing at the desired rate, you may use Darvan at up to 1 ounce per 100 dry pounds. Other dry blend clays can be deflocculated with these same products.

How to Use Casting Slip

Before pouring slip into your molds, brush out dust or debris from previous pourings. Use a soft duster brush to avoid scratching the plaster. Always store your molds with the parts banded or strapped together, and allow your molds to dry between uses. Casting time and drying time for your molds and greenware will vary with many conditions, including temperature and weather. Aim a fan over your molds to help dry them, but do not use heat. Most molds can be poured once each day. With reasonable care, the average plaster mold is good for at least 60 uses.

- Split the stream of slip into the mold by pouring it over a spoon or butter knife to avoid hard spots of compacted clay where the slip hits the mold.
- The slip level recedes as the mold draws out the water. Top off the slip for best casting results. Remember that setting time for slip will vary.
- Be careful when pouring the excess slip out of your mold. Full molds can be very heavy!
- Prop your molds upside down at an angle to allow good air circulation for drying inside. Check frequently for dryness by lightly touching the inside of the object: when it no longer feels wet or cold, open the mold to allow further drying. Remember that drying time will vary!

