



Buntrack Industries, Inc.

Investment Casting Supplies

Document#:

7.32

Rev#: 0

Title: Slurry Binder Solids

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Rev	Description of Change	Author	Date
0	Initial Release	Joe Norvell	2/6/14

1.0 Scope:

- 1.1 This test is used to determine the solids content (i.e. colloidal silica plus additive) of colloidal silica extracted from a slurry by evaporating to dryness in an oven. The weight of the residual solids is then measured and compared to the beginning weight to determine percent solids.

2.0 Purpose:

- 2.1 The solids content of slurry binder affects mold quality and casting quality. As a result, this test can be used as a control test. Variation in binder solids content will affect mold strength and slurry stability.

3.0 Hazard and Safety:

- 3.1 Consult the Material Safety Data Sheet (MSDS) for required handling procedures and Personal Protective Equipment (PPE) required.

4.0 Equipment:

- 4.1 Aluminum foil dish.
- 4.2 Oven capable of at least 140° C.
- 4.3 Balance capable of weighing to at least 0.01 grams.

5.0 Procedure:

- 5.1 Obtain sample of test binder extracted from slurry per section 7.13.
- 5.2 Weigh an aluminum foil dish and record the weight.
- 5.3 Add homogenous binder to the dish, weigh and record the weight.
- 5.4 Dry the sample in an oven at 140° C for one hour.
- 5.5 Weigh the sample and return it to the oven for another 30 minutes.
- 5.6 Weigh the sample again and if it is the same as was measured in step 5.5, record the weight.
If the weight changed, continue drying until the weight stops changing. Do not allow the sample to sit before weighing as it may re-absorb some of the moisture it lost in the oven.



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5.7 Calculate the percent solids using the following formula:

$$\frac{\text{Dry Slurry} - \text{Pan}}{\text{Wet Slurry} - \text{Pan}} \times 100 = \text{Percent Solids}$$

Wet Slurry - Pan

6.0 Results:

6.1 If the binder solids fall outside established control limits, the slurry should be pulled from production until corrective action has been completed and verified.

7.0 References:

7.1 None.