

DETERMINATION OF DEXTRIN**Application**

This procedure is intended as a routine method for the determination of dextrin in cereal binders used in core making.

Apparatus Required**Beaker**

400 mL and 250 mL beaker.

Volumetric Flask

250 mL

Funnel

For use with filter paper.

Oven

Capable of maintaining 105 +/- 3 °C.

Gooch-Type Crucible

30 mL; fritted disc, 5 micrometre pore size.

Materials Required**Alcohol**

Methyl alcohol, absolute. Caution: Low flash point. Refer to Fire Control Bulletin No. 18.

Distilled Water

10 ppm max dissolved solids (ASTM D 1888).

Filter Paper

Whatman No. 12 or equivalent.

Date	Action	Revisions
2001 01 29	Revised	Editorial – no technical change A. Cockman
2000 03 30		Editorial – no technical change A. Cockman
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Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

1. Wash the filter crucible with distilled water and alcohol.
2. Dry in an oven at 105 °C to constant weight and record as W_1 .
3. Weigh out 10.0 g of sample and transfer to a 250 mL beaker containing 125 mL of distilled water (approximately 24 °C).
4. Transfer to a 250 mL volumetric flask and dilute to the capacity mark with distilled water.
5. Stopper and shake vigorously for 15 seconds at 5 minute intervals for 30 minutes. Allow to stand for 1 h. (The dextrin is soluble in water.)
6. Filter a portion of the sample through a Whatman No. 1 filter paper or equivalent.
7. Stir an aliquot of 25 mL of the filtrate (from step no. 7) into 200 mL of alcohol in a 400 mL beaker. Cover and allow to stand overnight. (The alcohol causes any dextrin present to be precipitated).
8. Filter through the Gooch-type crucible, washing the beaker and precipitate thoroughly with absolute methyl alcohol
9. Dry in an oven at 105 °C to constant weight and record as W_2 .

Calculations:

. $W_2 - W_1$ = Weight of precipitate in grams.

. $\frac{25 \text{ mL}}{250 \text{ mL}} \times 10.0 \text{ g} = 1.0 \text{ g}$ = Weight of sample in aliquot

. $\frac{W_2 - W_1}{1.0} \times 100 = \% \text{ dextrin}$

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.