



ICC-Standard no. 169
AACC Method no. 61-01

Viscograph-E

The standard for the
measurement of starch



... where quality is measured.

Viscograph-E



The **Viscograph** measures native starch - wheat, corn, potato, rice starch - just like all types of modified starch reliably and reproducibly. Get a complete profile of the rheological properties of your products:

- Gelatinization and gelification properties of starch and starch containing products
- Hot and cold viscosity
- Stability of thickening agents or binders
- Acid stability of starch
- Caustic gelatinization (Alkali-Brabender®)
- Extrudate testing
- Measurement of industrial starch (technical and native)

Features

- Automatic test procedure
- Storage of any number of temperature programs
- Heating/cooling rates of 0.5...3°C/min (in certain sections of the temperature cycle up to 5°C/min)
- Electronic speed control
- Low-deflection torque measurement
- Free selectable measuring ranges
- Automatic adaptation of the diagram scaling to the viscosity measured
- Comfortable measuring and evaluation software under Windows
- **Speed profiles**

The principle

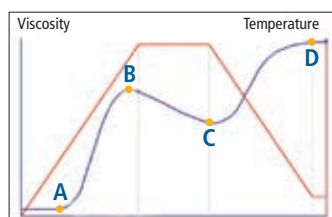
The **Viscograph** – which has been the standard instrument world-wide for measuring the viscosity of starch and products containing starch – has now got a completely new, compact design.

The sample is heated up within a rotating stainless steel bowl and cooled down again, both under controlled conditions. Together with the comfortable Windows software, the integrated, self-optimizing temperature controller allows programming and storage of any temperature profiles with heating/cooling rates of 0.5...3°C/min. A measuring sensor reaching into the sample is deflected according to the viscosity of the sample in the bowl. This deflection is measured as torque.

The Viscogram

Get reliable and reproducible data about the rheological properties of your material – thick or thin boiling, different thickening capacities, gelification, high or low hot and cold viscosity, stability, etc.

- Beginning of gelatinization (A)
- Gelatinization maximum (B)
- Gelatinization temperature (C)
- Viscosity during holding (B-C)
- Viscosity at the end of cooling (D)



Sample curve



Brabender® GmbH & Co. KG

Kulturstr. 51-55 · 47055 Duisburg · Germany
 Phone: +49 203 7788-0 · Fax: +49 203 7788-102
 E-Mail: food-sales@brabender.com
 www.brabender.com

Software

Enter your test parameters from your computer keyboard and store them as a "method" – a single mouse click opens your test routine at any time. The PC transmits your temperature profile to the controller and the test runs automatically.

On-line display of the Viscogram keeps you informed of progress through the test. After the test, all relevant data are calculated fully automatically.

Tests can be run in an administrator or operator mode. Define and assign authorities in the administrator mode or create and save automatic test procedures including a description of the test procedure for your laboratory staff.

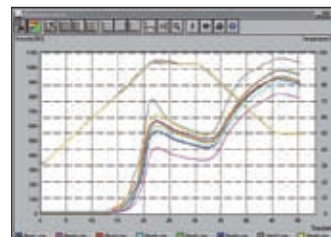
Data correlation

The data correlation program allows a direct comparison of up to 15 Viscograms with each other by contrasting test conditions and results in a graphic and tabular form and evaluating them statistically. Or get a quick overview of all Viscograms from the correlation diagram.

Universal evaluation

Use this new, additional software package for defining evaluations of your own. Manifold defined formulas allow you to

- Evaluate e.g. the maximum or minimum within a certain, defined time range
- Search for the first time when a predefined viscosity is reached in the test
- Evaluate in own defined temperature, time, or viscosity steps
- Evaluate e.g. the time between a certain temperature and reaching a certain viscosity, etc.
- Area calculation / energy



The data correlation

| Viscograph-E | |
|------------------------|--|
| Sample volume | approx. 450 ml |
| Heating capacity | 550 W |
| Heating/cooling rate | 0.5...3°C/min*) |
| Speed profiles | 0...300 min ⁻¹ |
| Torque measurement | electronically |
| PC port | USB |
| Mains connection | 1 x 230 V; 50/60 Hz + N + PE; 2.8 A 115 V; 50/60 Hz + PE; 5.6 A |
| Dimensions (W x H x D) | 560 x 890 x 430 mm |
| Weight | approx. 30 kg net |

*) for special applications in certain sections of the temperature cycle up to 5°C/min



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