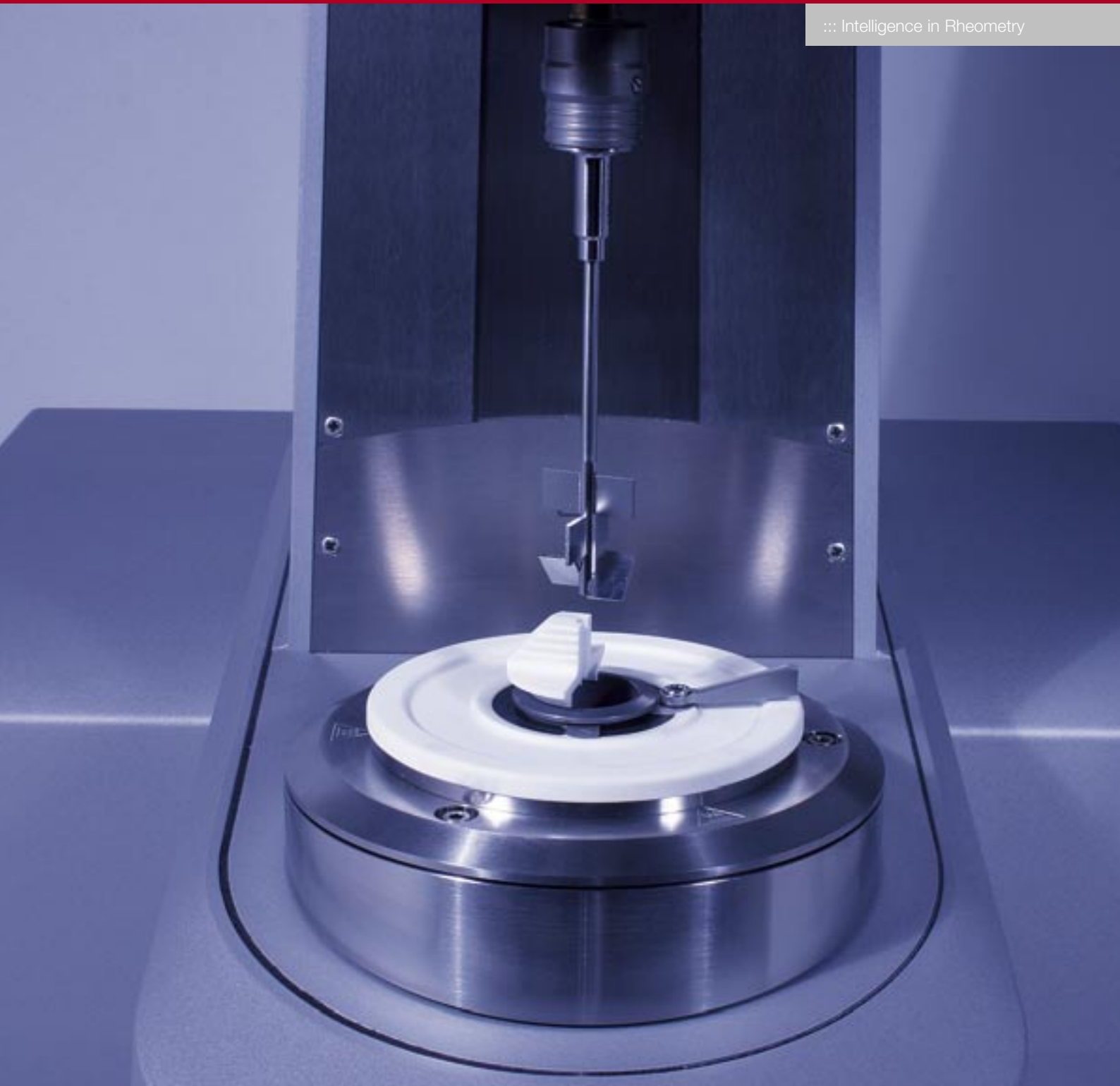




**Anton Paar**

::: Intelligence in Rheometry



## SmartStarch Analyzer

Taking viscosity testing during starch gelation to new levels of accuracy and reproducibility

## Setting the new standard for the viscosity testing of starches

The SmartStarch Analyzer combines the outstanding and well-established properties of a Physica MCR rheometer with a newly developed environmental system specially designed for the needs of starch testing. The starch cell offers fast heating and cooling ramps for temperature sensitive samples such as starch suspensions. A special stirrer prevents sedimentation in the liquid phase. Combining the rapid temperature change (up to 30 °C/min) with the precision and accuracy of a modern state-of-the-art Physica MCR rheometer provides unprecedented reproducibility for viscosity testing of starches. A special pressure option allows the rapid cooking of the sample up to 160 °C. Tailor-made test programs allow the emulation of all real process conditions. The software-controlled testing is fully automated.

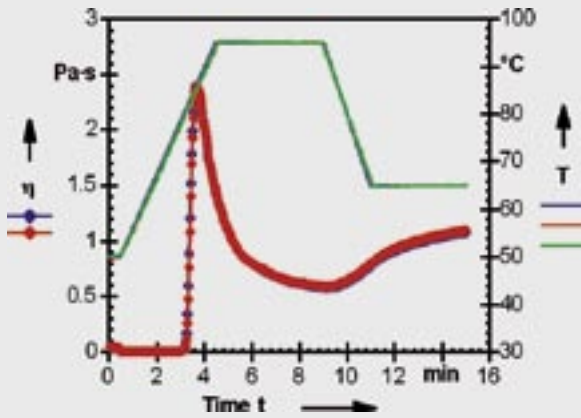
## Principle and Benefits

The excellent temperature characteristics of the starch cell are based on a combination of electrical heating and counter-cooling with water.

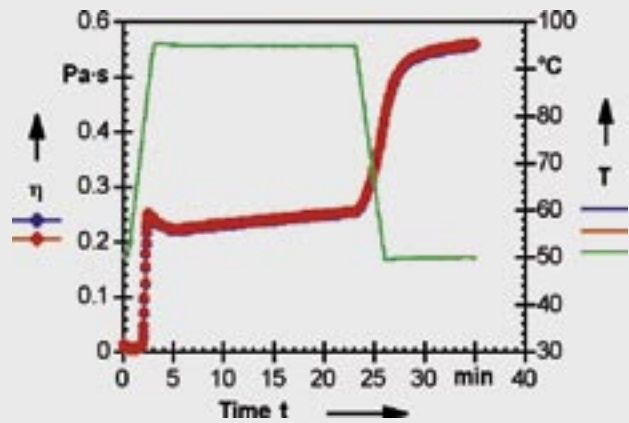
The main features are:

- ▶ Heating/cooling rates up to 30 °C/min possible
- ▶ Small sample volume (20 ml)
- ▶ High accuracy and extremely good reproducibility
- ▶ Easy-to-use, automated software-controlled operation
- ▶ Extremely flexible tailor-made test programming possible
- ▶ LIMS/SAP module available for software
- ▶ Robust design
- ▶ Low cost of operation
- ▶ All rheological test modes available including oscillatory testing (optional)
- ▶ Pressure option available (max. 6 bar), allows temperatures up to 160 °C

### Dent Corn Starch



### Modified Waxy Corn Starch



The two examples show the unprecedented reproducibility of the SmartStarch Analyzer for starch testing.

## Specifications and Accessories

The Physica SmartStarch Analyzer consists of a Physica MCR rheometer and the Starch Cell C-ETD 160/ST.

The starch cell can be used with all rheometers of the MCR rheometer series.

Measuring geometries: Specially-designed stirrer with 3 pairs of blades

Torque range: 0.5 µNm to 125 mNm  
 Speed range: 0.0001 to 3000 rpm  
 Temperature range: 0 to 160 °C  
 Maximum heating and cooling rates: 30 °C/min  
 Pressure option: Max. pressure 6 bar

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Specifications subject to change without notice.

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