Brabender®

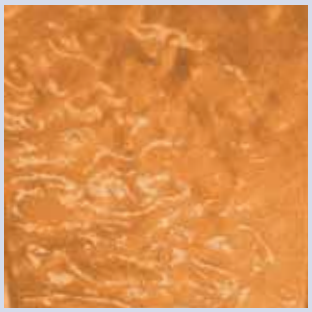
In compliance with ASTM D 2414 and 3493 including new procedures B and C

Absorptometer "C" Data Aquisition System

Oil absorption

… where quality is measured.

Absorptometer "C"



The established **Brabender® Absorptometer "C"** for running precise and reproducible absorption tests fully meets ASTM D 2414 including new procedures B and C as well as ASTM D 3493.

In contrast to former Absorptometer models, the instrument and burette do no longer stop automatically, enabling evaluation acc. to the new procedures B and C of ASTM 2414.

Principle

The principle consists in measuring the resistance which the carbon black puts up against the rotating blades during oil addition and in determining the carbon black absorption. The high-precision burette adds liquid as a titrant to the powder sample in the mixing chamber.

As the liquid wets the sample, three distinct phases can be observed in the torque curve:

- Free flowing phase
- Agglomeration phase
- End phase

During the free flowing phase, liquid is absorbed into the structure of the carbon black. Upon absorption of sufficient liquid, the particles begin to adhere to each other and form agglomerates. Resistance to mixing rises, indicated by a sharp increase in torque.

The oil absorption number of carbon black is directly related to the processing and vulcanization properties of the rubber compounds prepared with these carbon blacks.

A maximum torque (saturation) is reached, followed by a state change from liquid into solid to solid into liquid.

Instrument description

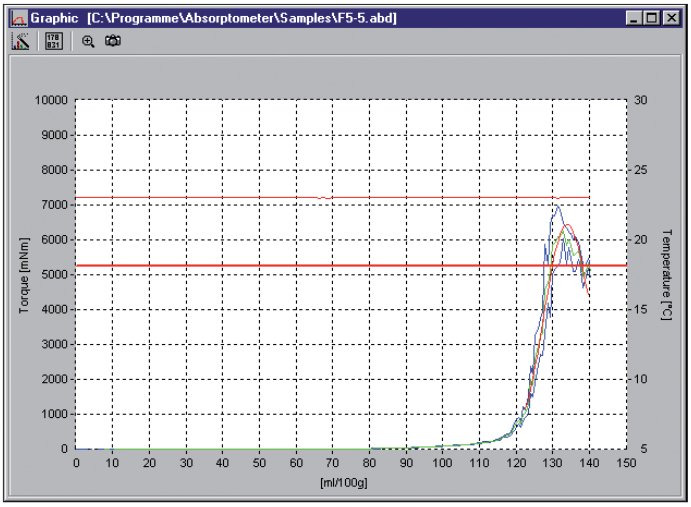
The **Brabender® Absorptometer "C" Data Acquisition System** comprises the following major components:

- Frequency inverter drive unit with precise torque measurement
- High-precision measuring mixer with special blades
- Cooling jacket with temperature indication for mixer (option)
- High-precision burette, sequencer controlled titration rate for optimum test procedure
- 32 bit software for Windows® 98, ME, XP and 2000

Advantages

- Local / remote mode
- Interchangeable mixers
- Sequencer controlled titration rate

Display

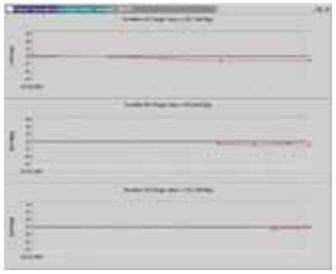


Absorptometer "C" evaluation

Software

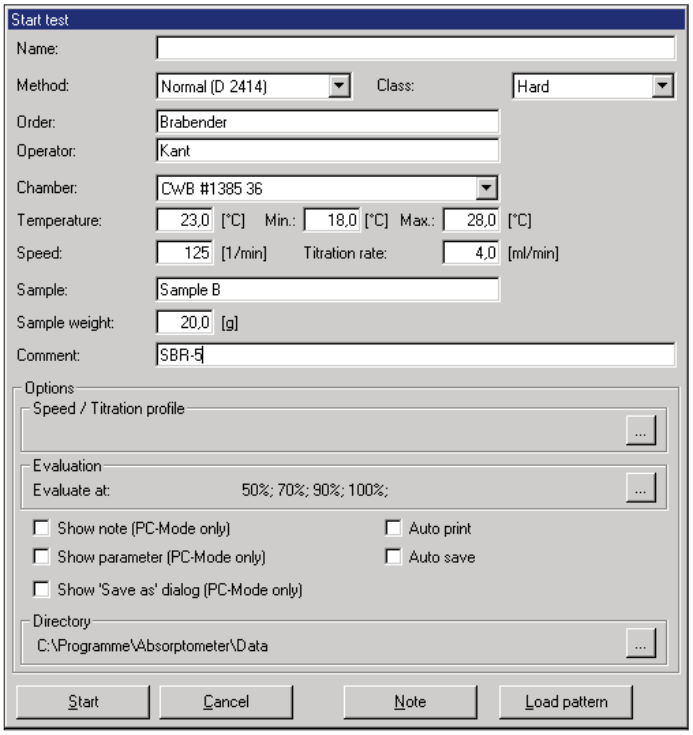
The user-optimized 32 bit software of the **Absorptometer "C" Data Acquisition System** offers numerous advantages for daily laboratory use:

- Continuous operation at low cost: one basic instrument can be run with 2 or more interchangeable mixers due to mixer-specific determination of the TLS (= torque limit switch) and all other important data.
- Operation can be continued immediately when the first mixer needs to be cleaned - buy a single instrument and get the output of two.
- System normalization as per ASTM with standard reference carbon blacks, including the possibility of normalization with other than standard carbon blacks (e.g. for laboratories working with their own reference carbon blacks).

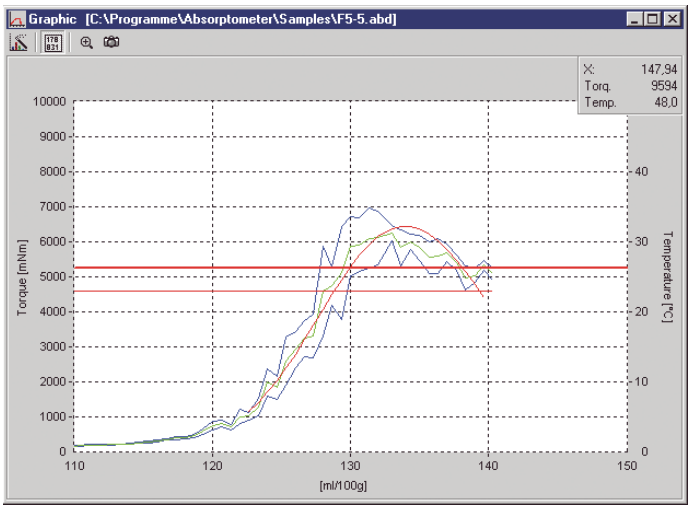


Deviations

- Normalization trends show mixer wear
- Choice between local and remote operation for economic and clean test procedure
- Separate location of the PC for clean operation and long lifetime
- Automatic saving of tests in remote operation – no need of working at the PC between the individual tests
- Lists with different test configurations can be defined and saved at the PC and then be worked off in remote operation from the Absorptometer control panel.
- Creation of test patterns for running several tests with one and the same sample: create the test pattern at the PC (local mode), then work off all tests from this pattern at the Absorptometer (remote operation).
- All values prescribed in ASTM D 2414 are set as default values but can be changed to meet individual requirements.
- Full burette control from the PC, incl. sequencer controlled titration rate for quick titration at the beginning and reduced rates during the significant test phase.
- Manifold graphic options to edit the test diagram according to your individual needs.
- Separate selection of operator and printout language.
- Evaluation fully meets ASTM D 2414 including new procedures B (end-point at 70 % of maximum torque) and C (end-point at fixed but reduced torque level).
- Calculation of 3rd order polynomial in the significant part of the torque curve for optimum reproducibility.
- One PC can handle up to 4 instruments with 2 or more interchangeable mixers each.



Test parameter



Evaluation

Absorptometer "C"

Brabender® support

A modern application laboratory is at the disposal of all customers and interested parties for trials with their own materials.
All **Brabender®** measuring systems can be tested under severe conditions.

An experienced expert team will assist the tests and will stay at your disposal at any time for further questions.

Together, we will find the optimum solution for your specific problems and prove its suitability.

Brabender® experimental laboratory

Absorptometer "C" Data Aquisition System	
Drive unit	AC inverter motor, carried in pendulum bearing
Power	0.75 kW
Speed	default: 125 min-1 as per ASTM variable with sequencer control (5 - 150 min-1) even during the running test via PC and/or digital control panel
Speed constancy	quartz precision through digital feedback
Torque measurement	electronical
Titration rate	default: 4.0 ml/min as per ASTM variable sequencer control even during the running test via PC and/or digital control panel
Housing	stainless steel, fully dust proof, DBP resistant
Mains	1 x 230 V, 50/60 Hz, +N + PE, 4A
Dimensions (H x W x D)	560 x 530 x 700 mm without burette
Weight	approx. 75 kg

Made in Germany

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