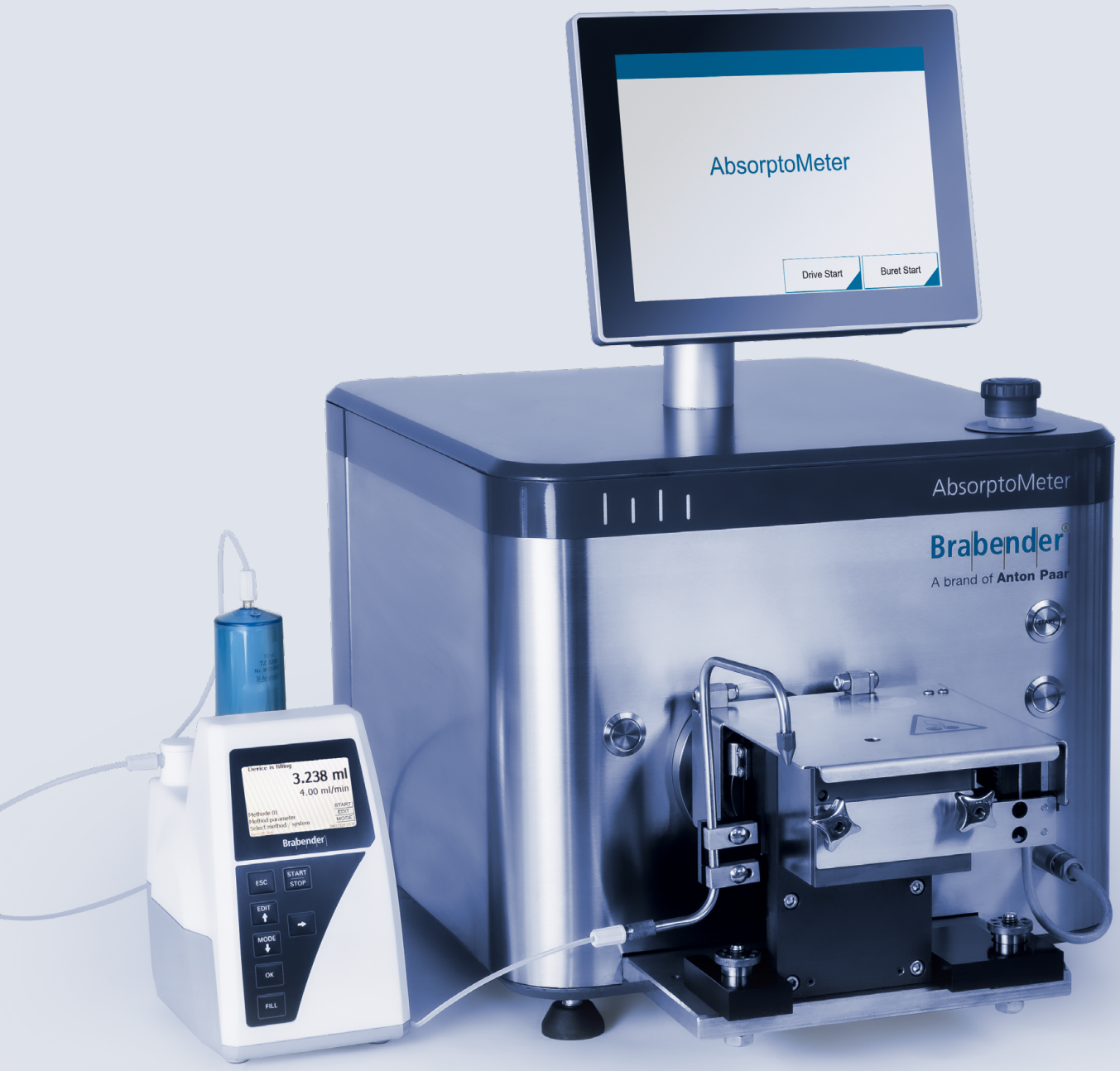
Anton Paar

Fluid Absorption
Analyzer

Brabender: AbsorptoMeter



Brabender®
A brand of **Anton Paar**

Fingerprint Measurement of Powdery Materials

The Brabender AbsorptoMeter is the perfect instrument for quick quality control checks via absorption measurements of free-flowing, powdery materials, including carbon black and silica, according to ASTM standards.

Precisely and reproducibly determine the oil absorption number (OAN und COAN) of powdered materials, especially carbon black, silica, and other pigments and fillers. The oil absorption number describes the structure of these materials and is directly related to the processing and morphological properties of the product.

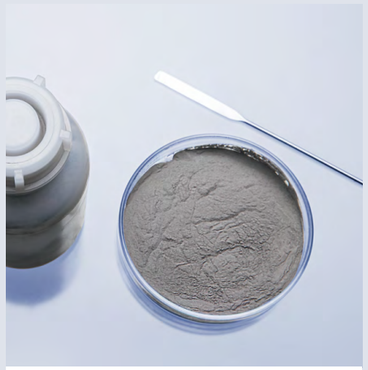
- ✓ Industry-leading instrument for the testing of carbon black and silica in compliance with all main national and international standards for oil absorption such as ASTM D2414, ASTM D3493, and ASTM D6854
- ✓ Specific mixing chambers that improve usability while measuring powdery materials with low bulk density such as silica
- ✓ Availability of titration solutions with different dosing rates and for higher viscosities (up to 150,000 mPas) or challenging solvents such as NMP
- ✓ Alternative to the manual oil absorption test method ISO 787-5:1980 via use of an automated software-supported system, ensuring error reduction and improving measurement precision and repeatability

Comprehensive structural analysis
Brabender AbsorptoMeter measurements enable the characterization of powdery substances, giving you information on absorption efficiency, rheological properties, and more. This enables conclusions about the breakdown of substances under the mixing effect and the agglomeration behavior of aggregates.

Structure and processing properties
The Brabender AbsorptoMeter not only gives information on the structure but also on the processing properties of a material. The Brabender AbsorptoMeter, with its fluid absorption measurements, provides a method for determining the relationship between the processing properties and the structure of powdery substances.

Carbon blacks and recovered carbon blacks
Analysis of the processing properties of carbon blacks and recovered carbon blacks allowing conclusions to be drawn on the properties of rubber enhanced with a carbon black.

Cosmetic powders and pigments
Determination of the quantity of refined linseed oil that is absorbed under defined conditions by a sample of pigment or extender for general quality control or formulation development.



Raw materials for battery production
Evaluation of the particle structure for formulation development and quality monitoring during production.

Measuring Principle

The automatic measuring principle of the instrument is based on the consistency change of the powder during the measuring time upon absorption of the continuously added fluid. The Brabender AbsorptoMeter consists of a drive unit with a torque measuring system and a measuring mixer attachment with special blades. The torque is measured and recorded during the entire mixing process. The automatic precision-metering pump gradually adds the oil to the powder in the measuring mixer. The liquid is absorbed by the structure of the sample material and the powder agglomerates. This causes torque to increase to its maximum.

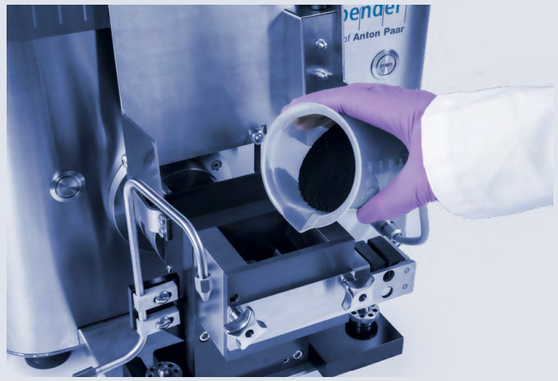
FIND OUT MORE

www.anton-paar.com/apb-absorptometer

- ✓ **ASTM D2414-22**
  Standard Test Method for Carbon Black—Oil Absorption Number (OAN)
- ✓ **ASTM D3493-21**
  Standard Test Method for Carbon Black—Oil Absorption Number of Compressed Sample (COAN)
- ✓ **ASTM D6854-15**
  Standard Test Method for Silica—Oil Absorption Number (OAN)
- ✓ **ISO 787-5:1980**
  General Methods of Test for Pigments and Extenders - Part 5: Determination of Oil Absorption Value

ASTM designation	Particle size α D_{wm}[b], nm	Aggregate size α D_{wm}[b], nm	D_{st}[c], nm	Surface area α, m²/g
↓	↓	↓	↓	↓
N110	27	93	76-111	143
N220	32	103	95-117	117
N330	46	146	116-145	80
N550	93	240	220-242	41
N990	403	593	436	9

This table shows the particle structure of ASTM designated carbon black types. A specific oil absorption number can be attributed to the structure of a carbon black type which is determined using the Brabender AbsorptoMeter.*



Mixer for characterization of industrial carbon blacks

Mixer for characterization of silica and other powdery materials

* Wang, M.J., Reznek, S.A., Mahmud, K., Kutsovksy, Y., 2003. Carbon black. In: Kirk-Othmer Encyclopedia of Chemical Technology, vol. 4. John Wiley & Sons, Inc., pp. 761-803.

Key Features

Efficient operating software

- → Comparison with a reference measurement
- → Correlation function for visual comparison of several measurements
- → Automatic data export to ERP and LIMS systems
- → Time saving: Measurements are stopped as soon as the required region of interest of the measurement curve is recorded
- → Trial preplanning for better coordination in daily lab routines

Innovative hardware and software features

- → Fully integrated dosing pump with variably programmable titration rate; measure highly viscous liquids up to 150,000 mPas
- → Complete management of TLS and normalization according to ASTM D2414

New durable stainless steel housing design

- → Improves instrument life time and facilitates cleaning and operation in dirty working environments

Brabender: AbsorptoMeter

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OPERATION	
Speed	5 min^{-1} to 200 min^{-1} (125 min^{-1} according to ASTM standard)
Max. torque	15 Nm
Titration rate	Variably adjustable (4.0 mL/min according to ASTM standard)
Power supply	230 V | 50 Hz/60 Hz | 4.3 A | N + PE 115 V | 50 Hz/60 Hz | 8.7 A | PE
Interfaces	USB, HDMI, interface for burette

DIMENSIONS AND WEIGHT	
Dimensions[1] (W x D x H)	630 mm x 430 mm x 740 mm
Weight	66 kg

[1] Without burette

Reliable. Compliant. **Qualified.**

Our well-trained and certified technicians are ready to keep your instrument running smoothly.

FIND OUT MORE

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Maximum uptime

Warranty program

Short response times

A global service network

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