Anton Paar

Fluid Absorption Analyzer

Brabender: AbsorptoMeter

Brabender®
A brand of Anton Paar

AbsorptoMeter:
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 vulcanization properties of the product made with them.

- ✓ Leading instrument for the testing of carbon black and silica while complying with all main national and international standards for oil absorption such as ASTM D2414, ASTM D3493, and ASTM D6854
- ✓ Automatic data export to ERP and LIMS systems
- ✓ Titration solutions with different dosing rates and for higher viscosities (up to 1,000,000 mPas) as well as for strong solvents such as NMP are available
- ✓ Save time by ensuring that measurements are stopped as soon as the required evaluation area of the measurement curve is recorded
- ✓ The only instrument on the market with specific mixing chambers that improve usability while measuring powdery materials with low bulk density such as silica

Fast and comprehensive structural analysis
AbsorptoMeter measurements enable the characterization of powdery substances, giving you information on absorption efficiency, rheological properties, drying characteristics, 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 AbsorptoMeter not only gives information on the structure but also on the processing properties of a material. The 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 and vulcanization properties of the product manufactured with a carbon black.

Cosmetic powders and pigments
Determines 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 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

The relationship between the ASTM designation and the structure of the particles using the example of carbon black. A specific oil number can be attributed to the of carbon black types, which is determined using the AbsorptoMeter.*

Mixer for characterization of industrial carbon blacks

Unique on the market: 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

- → Easy comparison with a reference measurement
- → Correlation function for visual comparison of several measurements
- → Automatic data export to ERP and LIMS systems
- → Save time by ensuring that measurements are stopped as soon as the required evaluation area of the measurement curve is recorded
- → Trial preplanning for better coordination in daily lab routines

User friendly

- → Fully integrated dosing pump with variably programmable titration rate. The new AbsorptoMeter is also able to measure highly viscous liquids up to 1,000,000 mPas
- → Complete management of TLS and normalization according to ASTM D2414

New housing design for operation in tough environments

- → Easy cleaning due to stainless steel materials and compact design

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OPERATION	
Speed	5 min^{-1} to 200 min^{-1} (125 min^{-1} according ASTM)
Max. torque	15 Nm
Titration rate	Variably adjustable (4.0 mL/min according ASTM)
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.

FIND OUT MORE

www.anton-paar.com/service

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

Maximum uptime

Warranty program

Short response times

A global service network

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