

# Liquid Absorption Analyzer

Brabender AbsorptoMeter



# Reliable Powder Data: Every Drop Counts

Understanding the oil absorption number (OAN) means understanding powder performance. The Brabender AbsorptoMeter precisely quantifies oil absorption by capturing a continuous torque curve during controlled liquid addition. It delivers up to 25 Nm, the highest torque on the market, so even demanding powders reach clear, repeatable endpoints.

The industry-leading MetaBridge software eliminates the root causes of variability: manual handling, fragmented data, and subjective evaluation. By integrating weighing, temperature control, dosing, and endpoint detection into one controlled workflow, it ensures consistency at every step. Automated routines, centralized control, and direct data connectivity ensure traceable, audit-ready results, positioning the Brabender AbsorptoMeter as the benchmark in liquid absorption analysis.



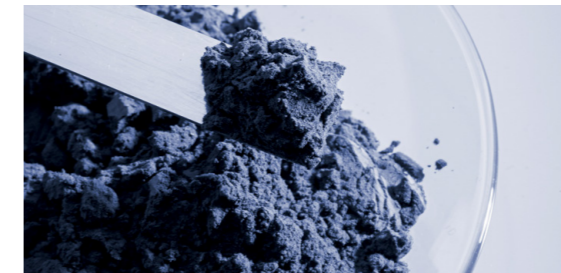
## Comprehensive structural analysis

The Brabender AbsorptoMeter examines the ability of powders to form networks during liquid absorption. This insight reflects the structural characteristics that determine wettability, dispersion efficiency, and end-use performance.

## Linking structure to processing behavior

The Brabender AbsorptoMeter quantifies oil absorption as a predictor of key process parameters, allowing users to link, e.g., carbon black structure to vulcanization and swelling behavior, cosmetic powders to texture and stability, and electrode materials to conductivity.

- ✓ 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, ASTM D6854, ISO 4656, and ISO 19246.
- ✓ Unique on the market: Two mixer designs for different applications with appropriately coated blades to withstand abrasive products like silica, oxides, or pigments.
- ✓ From 0.025 mL/100 g to 100 mL/100 g, the titration rate tunes to powder behavior, while optimized tubing handles up to 150,000 mPa·s liquids (including NMP) and up to four burette doses of multiple liquids sequentially or in parallel.
- ✓ Replaces manual ISO 787-5 steps with a fully automated, software-controlled workflow: Precision pump dosing and continuous torque recording deliver an objective, curve-based endpoint with higher repeatability and reduced user influence.
- ✓ Maximum robustness: The sealed stainless-steel housing withstands harsh, dusty environments and keeps fine particles out – ensuring reliable daily operation.



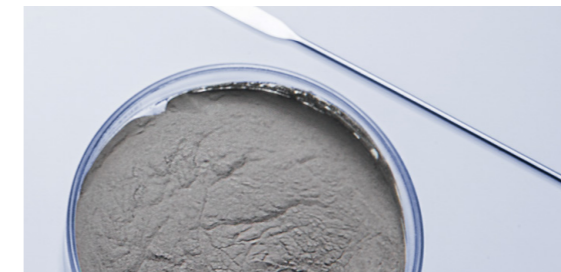
## Carbon blacks and recovered carbon blacks

Analysis of absorption and structure values of carbon blacks and rCB enables conclusions about vulcanization and swelling of rubber compounds filled with carbon black.



## Powders and pigments

Determination of oil absorption and structure enables conclusions on binder demand, dispersion performance, gloss and color strength in coatings, as well as texture, compressibility and long-term stability in pressed and loose powders.



## Raw materials for battery production

Measuring liquid absorption of battery raw materials provides quantitative data on solvent demand, mixing behavior, grinding level, and wettability of solvents like NMP, enabling reliable predictions of charging and discharging behavior.



## Silica

Quantified oil absorption reflects the void volume of silica aggregates/agglomerates and serves as a structure measure related to processing and vulcanizate performance when incorporated into rubber compounds.

# Measuring Principle

The Brabender AbsorptoMeter measures oil absorption via torque feedback during liquid addition. A burette or optional high-precision pump gradually dispenses oil into the sample while special blades incorporate the oil into the powder. As absorption occurs, the torque rises before it reaches a peak (the saturation point). The volume of oil added to this point is automatically logged and converted into the OAN, calculated in mL/100 g. This automated method standardizes the workflow, eliminating operator subjectivity and improving repeatability. With consistent, quantifiable results, it is ideal for quality control, R&D, and raw material evaluation – helping optimize formulations, reduce waste, and verify supplier consistency across batches.



Find out more



✓ **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 samples (COAN)

✓ **ASTM D6854-15**  
Standard test method for silica – oil absorption number (OAN)

✓ **ISO 4656**  
Rubber compounding ingredients (carbon black) – determination of oil absorption number (OAN) and oil absorption number of compressed sample (COAN)

✓ **ISO 19246**  
Rubber compounding ingredients (silica) – oil absorption of precipitated silica

✓ **ISO 787-5**  
General methods of test for pigments and extenders - part 5: determination of oil absorption value

**Carbon black mixer**  
100 cm<sup>3</sup> fixed-blade bowl in steel or anodized aluminum with optional cooling jacket, ideal for analyzing industrial carbon blacks.



**General powder mixer**  
100 cm<sup>3</sup> Ag-TiN coated bowl with interchangeable blades and 250 cm<sup>3</sup> powder hopper resists abrasion and enables reproducible filling of low bulk density powders.



Brabender AbsorptoMeter	
Drive power	0.6 kW
Speed	Default 125 min <sup>-1</sup> (ASTM); adjustable 5 min <sup>-1</sup> to 200 min <sup>-1</sup> at setup
Max. torque	25 Nm
Titration rate	Default 4.0 mL/min ±0.5 mL/min (ASTM); adjustable 0.01 mL/min to 99.9 mL/min at setup
Interfaces	4 x USB, 1 x HDMI, 1 x LAN
Power supply	1 x 230 V, 50/60 Hz + N + PE, 4.3 A; 1 x 115 V, 50/60 Hz + PE, 8.7 A
Dimensions (W x H x D)	430 mm x 630 mm x 644 mm (without mixer and metering pump) 430 mm x 650 mm x 800 mm (with Carbon Black Mixer) 430 mm x 650 mm x 900 mm (with General Powder Mixer)
Weight	Approx. 67 kg

# Meet MetaBridge. Meet the Benchmark.

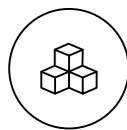
World-class measuring instruments need world-class software. That's why the new Brabender AbsorptoMeter integrates MetaBridge, strengthening its leadership in liquid absorption analysis. Gain instant access to your data across your network and follow a streamlined, guided workflow from setting up your instrument to the final result.

## Reliable. Compliant. Qualified.



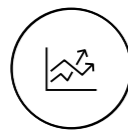
Our well-trained and certified technicians are ready to keep your instrument running smoothly.

Maximum uptime | Warranty program | Short response times | Global service network



### MetaBridge Connect

- Easy access to your measurement data directly at the instrument or via a web browser from any desktop or mobile device within the company network
- Built-in feedback and remote support for instant help from our service team



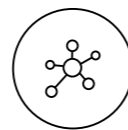
### Data sharing

- Standardized exports (Excel, CSV, PDF) for seamless data use across workflows
- Built-in mailing function for fast, direct sharing with colleagues and customers
- Support of third-party systems (e.g., LIMS, ERP) for smooth data flow, eliminating manual transfer effort



### Reference/correlation

- Reference curves secure compliance with your specifications live during trials, revealing deviations early and supporting fast, data-driven quality decisions
- Correlation matches curves with a reference to detect variation, ensuring raw material conformity, batch consistency, and reliable R&D decisions



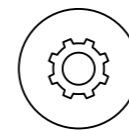
### Standard and custom methods

- Ready-to-use ISO, ASTM, and custom methods for carbon black, silica, pigments, and graphite are easily adaptable, anytime
- Titration and blade speed auto-align with your method, ensuring precise, repeatable measurements with low operator input



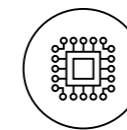
### Intelligent SRB evaluation

- Transparent regression formulas make results easy to understand and defend
- Adjustable polynomial limits refine results without rerunning tests
- Adjustable TLS values match evaluation to each material behavior



### Seamless setup and startup

- Automated startup routine cleans burette and activates blades, supporting accurate blank tests and baseline conditions
- Button-activated cleaning and rinsing streamline changeovers, helping maintain clean fluid paths and consistent results



### Controlled conditions

- Integrated balance control with automatic taring, live data transfer, and adjustable tolerance window ensures correct sample weight and fewer input errors
- Precise chamber temperature control improves result comparability, especially for temperature-sensitive liquid viscosity and powder wetting



### Multi-burette option

- MetaBridge controls up to four burettes simultaneously, enabling sequential or parallel dosing of liquids with different viscosities. Simulate real multi-component recipes – far beyond single-liquid tests – and gain deeper insight into powder-liquid interactions.

