

# Product Catalog



Material  
Characterization  
At Its Best!®

Viscometers   Rheometers   Texture Analyzers   Powder Flow Testers   Moisture Analyzers   Toxic Gas Analyzers

2023

# AMETEK Brookfield

## Material Characterization at Its Best<sup>®</sup>

Instruments for accurate measurements with AMETEK Brookfield

AMETEK Brookfield has been the world leader in viscosity measurement instruments for over 85 years. Our expanding portfolio includes viscosity, rheology, texture, powder, moisture, and toxic gas detection instruments for accurate material characterization measurements, making our instruments ideal for various applications in many industries. With Centers of Excellence located worldwide, our network of qualified service & training representatives and dealers are available to support our customers. Research labs, QC departments, and production environments around the globe count on AMETEK Brookfield's instruments for repeatable and accurate measurements.



# History of AMETEK Brookfield

1934



- Brookfield Engineering was founded.
- First Dial Viscometer becomes lab standard used globally.

1978



Release of TT100 line of products.

1980

DV1 was launched.

1986

DV2 was introduced.

1992

DV3 was launched.

1993

Introduction of Rheocalc software.

1994

CapCalc software was launched.

1995

Wingather software was launched.

1996



Launch of PVS.

1997



CAP2000 was launched.

1998

David Brookfield became CEO.

1999

- Office moved from Stoughton, MA to Middleboro, MA.
- Electronic Dial instrument introduced.

2001

Rheovision software was launched.

2002



- Launch of CAP1000.
- Brookfield became ISO 9001 certified.

2003

AST was launched.

2008

TexturePro software and CT3 were launched.

2009

- PFT and Power Flow Pro software were launched.
- Celebrated **75th** anniversary.

2013

RheoCalcT software and DV2T were launched.

**AMETEK**

2016

AMETEK acquired Brookfield.

2017

AMETEK acquired Arizona Instrument.

2018



CTX launched.

2019



DVNext and RSO were launched.

2020



Launch of Computrac® Vapor Pro® XL Autosampler.

2021



Launch of RSX

2022



Launch of DVNext magnetic coupling C/P

2023



Launch of DVPlus & DVConnect App

# Repeatability and Accuracy

AMETEK Brookfield's instruments are the most accurate, reliable, and repeatable on the market. Customers have relied on consistent, precise measurements from our instruments in even the most demanding environments for decades. Measurements taken today with an AMETEK Brookfield instrument will characteristically match results years from now.



## 21 CFR, Part 11 and GAMP® Compliant

DVNext Rheometer is AMETEK Brookfield's leading easy-to-use, all-in-one tool for viscosity and yield stress measurements



## RSO brings viscoelasticity measurements within reach!

RSO Oscillatory Rheometer is AMETEK Brookfield's stand-alone instrument designed for advanced viscoelastic measurements



## Computrac® Vapor Pro® XL Autosampler

Vapor Pro XL (VPXL) Autosampler moisture-specific analysis technology offering accuracy, precision, flexibility, and automation to test up to 16 samples with individual test profiles



# Applications

## Food & Beverages



Corn Starch



Baking Soda



Brownie Mix



Almonds



Ground Cinnamon



Mayonnaise



Cooked Meat



Bread



Apple Juice



Cheese Puffs



Chocolate



Butter



Coffee



Chips

# Applications

## Pharmaceutical, Medical & Personal Care



Baby Formula



Facial Powder



Tablets



Lipstick



Shampoo



Petroleum Jelly



Hair Gel



Eye Liner



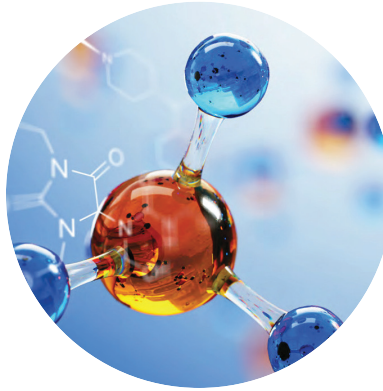
Cough Syrup



Soap

# Applications

## Plastics, Chemicals, Paints & Inks



Chemicals



Flooring Adhesive



Gypsum



Engine Oil



Paints



Auto Paint



Curing or  
Gelling Materials



Bentonite Clay



Detergent



# Applications

## Energy, Oil, Gas, Environmental & Education



Landfill



Batteries



First Responders



Wastewater  
Treatment



Oil Industries



Universities



Gas



Environmental  
Agencies



Industrial Hygiene



Powerplants



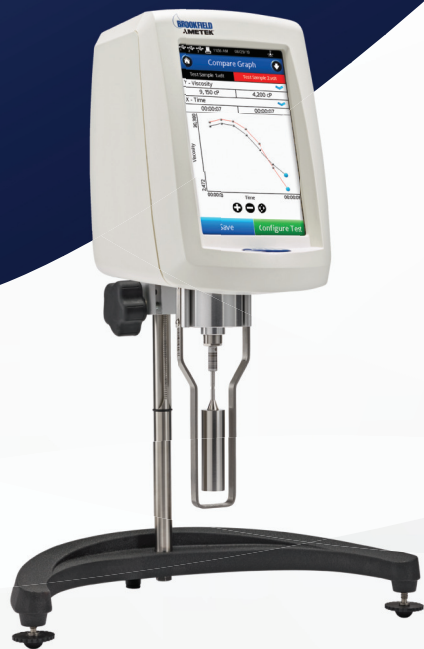
Mining



Biomass

# Viscometers

Torque measurement accuracy: 1% of full-scale range  
Repeatability: 0.2% of full-scale range



## DVNext

Full-Featured Rheometer

- Digital leveling
- Start-up wizard
- Gel-timer functionality
- Optional magnetic coupling attachment
- Optional bar code scanner

Recommended Software:

- RheocalcT

## DVNext Compliant

21 CFR, Part 11 Compliant Rheometer

- 21 CFR, Part 11 Compliant
- Digital leveling
- LIMS connectivity
- Gel-timer functionality
- Hand-held scanner for bar code detection
- Accessory detection
- Magnetic coupling attachment

Recommended Software:

- RheocalcT



## DVNext Cone/Plate

Rheometer for Small Sample Sizes

- Small sample size
- Defined shear rate
- Electronic gap adjustment
- Touch screen display
- Auto-zero function
- Auto-range function

Recommended Software:

- RheocalcT





## DV2T

### Full-Featured Viscometer

- 5-inch touch screen display
- Built-in temperature probe
- Data/user security controls
- USB PC interface available
- Additional built in testing options

### Recommended Software:

- RheocalcT
- PG Flash



## DVPlus

### Latest Entry-Level Instrument for all Viscosity Needs

- 5-inch touch screen display
- Advanced interface with a real-time test indicator
- USB and Bluetooth connectivity
- 740 speeds for an excellent range capacity
- Temperature offset capability to  $\pm 5^{\circ}\text{C}$

### Recommended Software:

- DVPlus Connect App



## DV2T Gel Timer

### Viscometer with Gel Timer

- Continuous torque-sensing capability
- Displays gel time and continuous temperature readout
- Glass rod fits snugly into compression-fit coupling
- Control immersion depth of glass rod
- Test runs automatically using time-to-torque feature

### Recommended Software:

- RheocalcT
- PG Flash





## Dial Reading Viscometer

The Original that Set the World Standard

- Easy set-up, simple to use & select speeds
- Continuous torque sensing capability
- Electronic drive, quiet, reliable operation
- Analog display shows % torque; use Factor Finder to convert reading to centipoise
- Accuracy:  $\pm 1.0\%$  of range, Repeatability:  $\pm 0.2\%$



## CAP2000+

Viscometer Specific for Paints and Coatings

- Broad shear rate range
- Peltier temperature control
- Excellent for paints and coatings

Recommended Software:

- Capcalc



## KU-3 Viscometer

Ideal for Paints, Coatings, Inks, and Pastes

- ASTM D562 compatible
- LED display in Krebs Units, Grams, and Centipoise
- Magnetic spindle coupling
- Easy to use, no weights, simplifies established test procedure
- Accommodates standard pint, 1/2 pint, and quart cans

# Rheometers

Quick and easy viscosity and viscoelastic measurements in a wide range of applications



## RSO

Full-Featured, Oscillatory Rheometer

- User-friendly touch screen
- Auto spindle recognition
- Automatic gap setting
- Rapid temperature control
- Air Bearing Motor for Oscillatory measurements.

Software:

- Rheo3000



## PVS Rheometer

Ideal for High Temperatures and Pressures

- Highly portable with 1' x 1' x 2' footprint
- Measures samples at pressures up to 1000 psi
- Measures under temperature conditions: -40°C to +260°C

Included (required) Software:

- Rheovision

## Rheometer RSX Family

- High-end touchscreen Rheometers
- Intuitive user Interface for simple stand-alone operation
- Large, user-friendly 7" Touch Screen
- High torque motor for testing challenging samples
- Quick connect coupling system for easy spindle attachment
- Automatic spindle recognition with integrated barcode reader
- Quick test functionality allows for testing within minutes
- Rugged design for the production floor and industrial use & applications
- Provides both Controlled Shear Rate (speed) and Controlled Shear Stress (torque) measurements

### Recommended Software:

- Rheo3000



## RSX Cone Plate

Ideal for measuring small sample volumes and difficult to clean materials

- Peltier and Fluid Heat (external bath) options available for rapid and accurate temperature control
- Very small sample size for rapid test setup and cleanup
- Controlled shear stress/shear rate operation
- Automatically spindle gap setting with standard one-piece spindles
- Spindles available for both Cone – Plate and Plate – Plate measurements



## RSX Soft Solids Tester

Ideal for pastes, slurries, and materials with particulates

- Vane Spindle Geometries to measure paste-like materials and other challenging soft solids
- Motorized stand with auto-immersion feature to automatically insert the vane spindle into the sample to the correct depth
- Powerful 200 mNm motor for higher viscosity materials
- Included adjustable sample stand allows secure handling of a variety of container shapes and sizes
- Can be used in CC (coaxial cylinder) mode with purchase of optional CC adapter mount, coaxial cylinder spindles, water jackets, and accessories



## RSX Coaxial Cylinder

Superior Viscosity Profiling and proven design for volatile samples

- Temperature control from -20°C to 180°C with choice of direct immersion in bath or external circulation using the FTKY3 water jacket
- Quantifies properties like Viscosity Profiling, Thixotropic Response, Creep Analysis, and Yield Stress Determination
- Use of cylindric geometries provides the most accurate measurement results, especially in the low-viscosity ranges
- Ideal for samples that readily evaporate and may prove challenging with Cone-Plate geometries

[store.brookfieldengineering.com](http://store.brookfieldengineering.com)

# Accessories



## Enhanced UL Adapter

- Designed for Low Viscosity Materials
- Multiple test options
- Automated analysis
- Compact design



## Helipath Stand

- Accessory Specific for Gels and Creams
- Multiple test options
- Automated analysis
- Compact design
- Ideal for measuring non-flowing substances



## Small Sample Adapter

- Ideal for Small Samples
- For rheological material evaluation using limited sample volumes
- Sample chamber easily changed
- Optional disposable chamber
- Rapid sample temperature control



## DIN Adapter

- Ideal for Small Sample Volumes
- Complies with DIN 53019
- Can measure small sample volumes
- Cylindrical geometry provides defined shear rates
- Compatible with any standard AMETEK Brookfield viscometer/rheometer



## Spindles, Cones, & Chambers

- A range of spindles to meet a variety of needs (CAP, Helipath T-bar spindles, KU-3, RSX)
- Cones and cups are used with standard AMETEK Brookfield cone/plate series viscometers and rheometers



## Vane Spindles

- 3-piece spindle set for versatile range capability
- Keeps particles in suspension during testing cycle
- Provides information on yield behavior at low rotational speeds
- Follows industry recommendations on length/diameter ratios for vane spindles
- Magnetic spindle coupling option





# CTX Texture Analyzer

## Full-Featured Texture Analyzer

- Deflection compensation for the most accurate measurements.
- Interchangeable load cells for optimal flexibility (eight choices ranging from 100g to 100kg)
- Easy-to-use texture analyzers measure compression and tension of materials in a wide variety of industries
- Extended boom for longer reach testing
- Three adjustable base tables for more versatile sample testing

## Recommended Software:

- Texture Pro

# Texture Analyzers

Easy-to-use texture analyzers measure compression and tension of materials in a wide variety of industries

## Accessories

The CTX has an additional variety of probes, fixtures for testing broad categories of packaging materials, foods of all types, cosmetics, pharmaceuticals, and mechanical devices. Contact AMETEK Brookfield for more details.



### TA-DEC

- Dual extrusion cell
- Used for forward and back extrusion of fruit puree, pudding, yogurt, or similar products



### TA-STF

- Quantifies the spread force of a material
- Comes with 1 male cone probe, 5 sample cups, and 1 cup holder



### TA-SBA-WB-1

- 1 mm shear blades
- Used for cutting-shear test of meat, fish, sausage, etc.



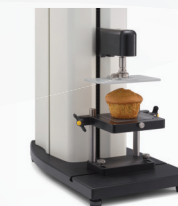
### TA-52

- Used for cutting tests.
- Perfect to test meat, poultry, fish, or similar products



### TA-TPB

- Three point bend fixture
- Used to determine the hardness of products like hard tablets, granola bars, energy bars, etc.



### TA-CTP

- Compression top plate
- For applying uniform compression force on samples up to 4x6 inches

# Powder Flow Tester

Quick and easy analysis of powder flow behavior for a wide variety of industries and applications



## PFT

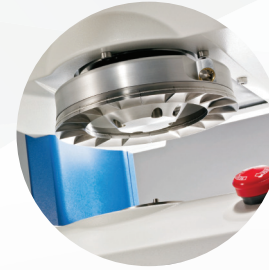
### Powder Flow Analyzer

- Multiple test options
- Tests powders for formulation, characterization and QA/QC
- Compact design - easily fits on a workbench

### Required Software:

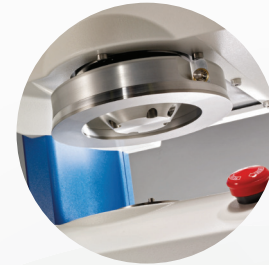
- Powder Flow Pro

## Accessories



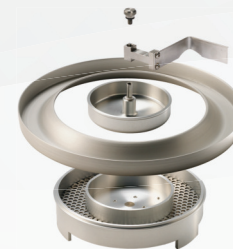
### Vane Lid

- Used for flow function test



### Friction Lid

- Wall friction lid
- Used for wall friction test and density test



### Outer and Inner Catch Trays

- Reversible scraper tool
- Inner catch tray
- Outer catch tray
- Trough



# Software

For instrument control and automated data collection

## RheocalcT - DV2T, DVNext

- Wizard guides user through creation of common tests
- Yield Testing
- Data averaged by step or whole test
- Math models: Bingham, Casson, Casson NCA/CMA, Power Law, IPC Paste, Herschel-Bulkley, Thix Index
- Includes features for 21CFR compliance

## Rheo3000 - RSO, RSX, RST

- Program by controlled stress/rate
- Automate viscosity vs. temperature testing
- Includes features for 21CFR compliance
- Quality control limits for pass/fail tests
- Automated analysis of collected data
- Calculate yield and average viscosity

## Rheovision - PVS

- Ability to control multiple PVS units
- Easy calibration and built-in linearity check
- Instantaneous flow curves
- Built-in math modeling
- User-friendly ramp wizard for quick API testing

## Texture Pro - CTX

- Wizard guides user through creation of common tests
- Simplified user interface
- Filters for searching and managing existing data
- Easy export, import, and data deletion
- Compare data by loading up to 20 distinct data sets within the graph
- Includes features for 21CFR compliance

## DVPlus Connect App

- Time-saving app that automates test data and creates permanent records
- Enhances the efficiency of the viscosity test process by monitoring tests in real time, and viewing and saving the test data
- USB and Bluetooth Connection options available

## PG Flash - DV2T

- Creates repeatable custom tests
- Extends capabilities with multi-step programs
- Create a program on a PC and upload to the DV2T or DV3T

## Wingather SQ - DV1

- Multiple test modes for enhanced data collection
- Automatic sample numbering
- Math models: Bingham, Casson, Casson NCA/CMA, Power Law, IPC Paste, Herschel-Bulkley, and Thix Index
- Data graphing of up to 20 data sets concurrently
- Plot data available: % Torque, RPM, Viscosity, Shear Rate, Shear Stress, Temperature, and Time
- Export data to spreadsheet format

## Capcalc - CAP2000

- Automated data collection eliminates operator error
- Easy-to-read instantaneous viscosity flow curves
- Records up to 1000 data points per test
- Yield stress calculations (Bingham Plastic, Casson, Power Law, and Consistency Index)

## Powder Flow Pro - PFT

- Flow Function, Wall Friction, Time Consolidated Flow Function, and Bulk Density Tests
- Graphically plot normal and shear stress values
- Display up to 8 different flow function curves



# Temperature Control

For elevated temperature testing of hot melts, asphalt, wax, and polymers



## Thermosel System

- Provides control of sample temperature for up to +300°C
- Programmable controller offers single set point or up to 10 programmable set points
- Compatible with standard Brookfield Viscometers and DVNext/DV3T Rheometers
- Disposable spindle/chambers option
- Ideal for asphalt or any other difficult-to-clean material

# Water Baths

For temperature control during viscosity measurements, ensuring accurate test results



## MX Series

- Economical
- Large character display
- Single speed pump
- Maximum temperature up to 135°C



## SD Series

- Programmable with PC control using RheocalcT
- 2-Speed pump
- Quick scroll to set temperature to standalone mode



## AP Series

- Touch screen interface
- Standalone programmable
- Variable speed pump
- PC control using RheocalcT



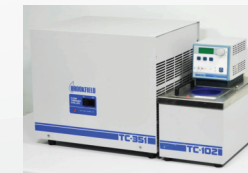
## TC-150

- Compact
- Built-in circulator pump
- Built-in tap water cooling coil
- For use with water-jacketed devices



## TC-250

- Configured for measuring multiple samples directly in the bath
- Work area accommodates 600mL and 1000mL beakers
- Built-in tap water cooling coil
- Built-in circulator pump



## TC-351

- Eliminates tap water requirements on non-refrigerated baths
- Increases lower range of most baths to -20°C



## TC-550

- Standalone operation
- Easy control of set-point
- Configured to measure viscosity directly in the bath - accommodates 600 mL beaker
- Programmable Controller version is designed to automate sample temperature control
- Built-in circulator pumps to external devices



## TC-650

- Compact – small "footprint" on your lab bench at only 8-1/4 inches wide
- For use with water-jacketed devices
- Provides standalone operation - no tap water required
- Easy control of set-point
- Programmable Controller version is designed to automate sample temperature control

# Viscosity Standards

- Accurate to +/- 1%
- NIST traceable
- Selection of 1-2 sufficient to verify calibration
- Hydrocarbon based mineral oil or polybutenes



## CAP Oil Fluids

Used for calibrating CAP series viscometers

- Appropriate for use at shear rates greater than 500 sec<sup>-1</sup>
- Recommended for use with cone/plate viscometers at viscosities above 5,000 cP



## High-Temperature Silicone Fluids

Used with the AMETEK Brookfield thermosel accessory

- High-temperature silicone fluids are newtonian fluids calibrated at 25°C, 93.3°C, and 149°C
- Excellent temperature stability
- Economical option



## Special Order Silicone Fluids

Custom viscosity or temperature ranges of silicone fluids

- Excellent temperature stability
- Special viscosity values and temperature calibrations available upon request



## General Purpose Oil

Used for calibrating cone/plate viscometers/rheometers and krebs spindle geometry instruments

- Appropriate for use at shear rates greater than 500 sec<sup>-1</sup>
- Recommended for use with cone/plate viscometers at viscosities above 5,000 cP



## Krebs Viscometer Oil Fluids

Used with the AMETEK Brookfield KU series Viscometers

- Appropriate for use at shear rates greater than 500 sec<sup>-1</sup>
- Recommended for use with cone/plate viscometers at viscosities above 5,000cP



## VisCal Kit

Used to calibrate all AMETEK Brookfield viscometer/rheometers

- Perfect for first-time viscometer/rheometer buyers
- Everything needed to verify calibration in one conveniently packaged kit



## General Purpose Silicone

Used to verify AMETEK Brookfield lab viscometers/rheometers' calibration

- Excellent temperature stability
- Economical Option



## RST Oil Fluids

Used with the RSX and RST series rheometers

- Appropriate for use at shear rates greater than 500 sec<sup>-1</sup>
- Recommended for use with cone/plate viscometers at viscosities above 5,000 cP