ACAV

RUNNABILITY ANALYZERS FOR COATING COLORS AND PIGMENT SLURRIES

Including extensional viscosity, formation of agglomerates and air content measurement options

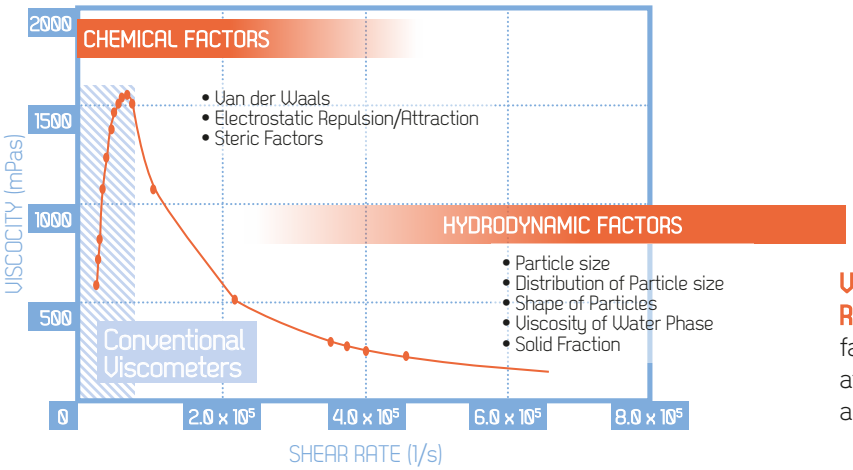
ACAV RESULTS correlate closely with blade loads, and problems such as web breaks, scratches, streaks, blade bleeding etc.

ACAV HELPS to adjust optimum blade loads, minimize screening and coating problems and solve runnability problems on coaters.

ACA

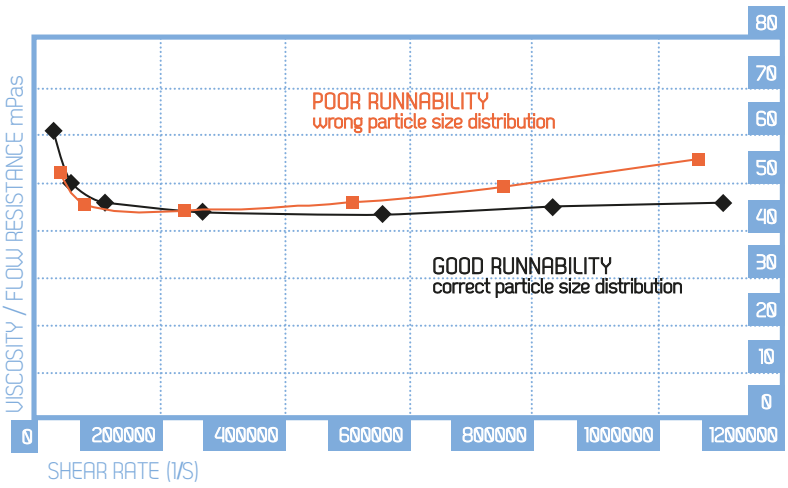
www.aca.fi

IMPORTANCE OF MEASURING THE FULL RANGE OF SHEAR RATES

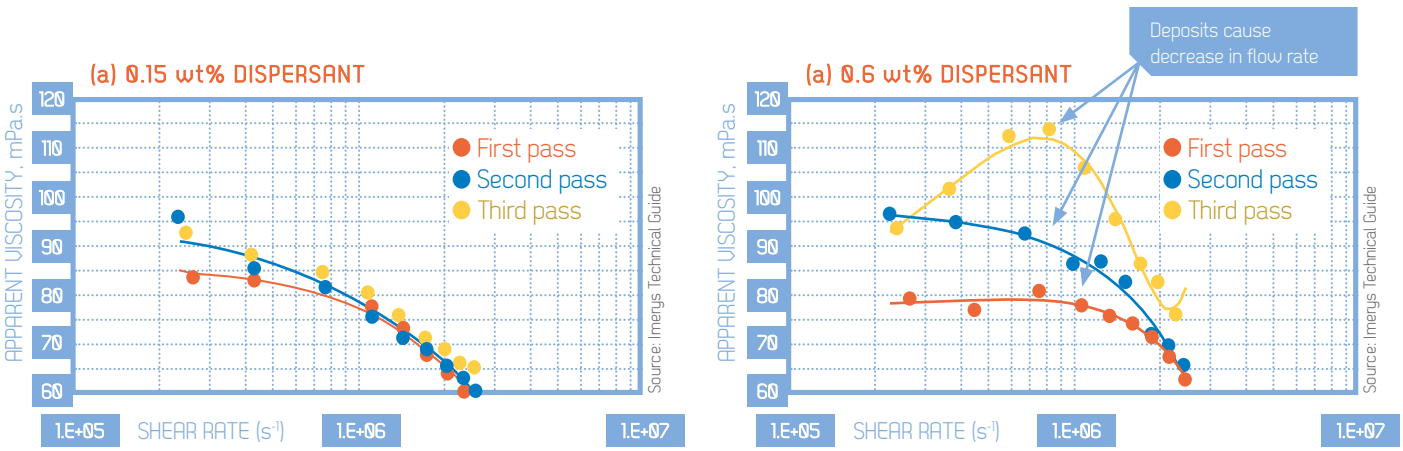


ACAV A2 can measure low and high shears rates.

VISCOSITY AT LOW AND HIGH SHEAR RATES involves chemical and hydrodynamic factors, so it's important to measure viscosity at the same shear rate as actual shear rate on coater.



LESS WEB BREAKS AT HIGH OPERATING SPEEDS AND LOW BLADE PRESSURES. NOTE! NO DIFFERENCE AT LOW SHEAR RATES.



ACAV SLIT SHOWS EFFECT OF DISPERSANT DOSE ON SHEAR STABILITY OF COATING COLORS. KAOLIN + DISPERSANT, 10 PPH LATEX, 0.3 PPH CMC, 59 WT/ SOLIDS

EASY ROUTINE ANALYSIS

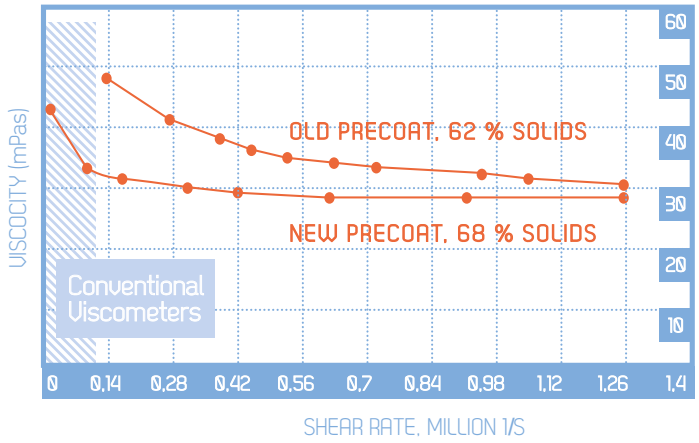
1. Pour coating color in to sample cylinder **2.** Start the measurement **3.** Read results

The ACAV does the analysis automatically including printed results and self cleans in nine minutes per a sample.

Some of our customers: Stora Enso, UPM, APP, Metso, Voith, Sappi, Nippon Paper, Iggesund, Ahlstrom, Styro

IMPROVING RUNNABILITY OF COATING COLORS WITH ACAV

HIGHER SOLIDS WITH IMPROVED RUNNABILITY!



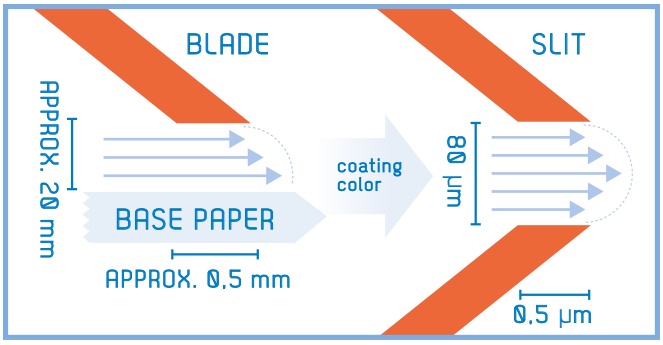
BENEFITS

- Coating color costs reduced by 10 %
- Drying energy reduced by 50 kWh/t
- Speed increased by 33 % from 900 to 1200 m/min

ACAV SLIT TECHNOLOGY

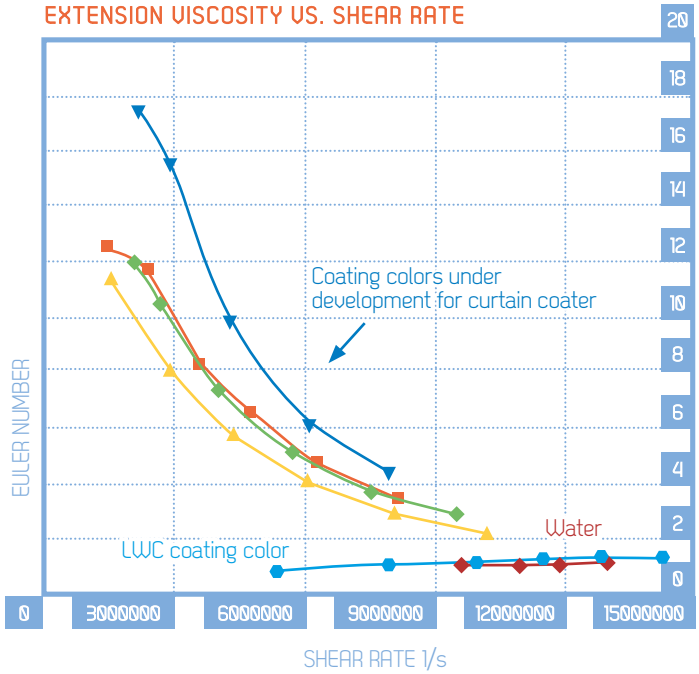
FLOW RATES AND DWELL TIMES ARE IN LINE WITH THE COATING PROCESS ➔ EXCELLENT CORRELATION TO RUNNABILITY OF BLADE COATERS.

- SLIT geometry is similar to blade geometry
- SLIT viscosity correlates directly with blade loads, web breaks, scratches, blade bleeding, streaks etc.
- If SLIT viscosity is correct level at a 1 – 2 million shear rate level, there will not be runnability problems under the blade caused by coating color.



EXTENSIONAL VISCOSITY AND AIR CONTENT MEASUREMENT OPTIONS

EXTENSION VISCOSITY VS. SHEAR RATE



EXTU EXTENSIONAL VISCOSITY OPTION

The option can be calibrated in terms of an Euler number as a function of the Reynolds number. The higher the Euler number is the higher the extensional viscosity of the sample.

The Euler number can be measured at different shear rates to verify possible changes in extensional viscosity versus shear rate

EXTU & Curtain coater: Coating colors with extensional viscosity are more stable during stretching. It seems, that extensional viscosity may be advantageous for quality of coating layer (less skipped coating etc.).

ACM AIR CONTENT MEASUREMENT OPTION

ACM measures even the least air contents with excellent accuracy and repeatability.

on, BASF, Cargill, Roquette, etc. all together more than 120 deliveries to more than 20 countries since 1997.

SPECIFICATIONS

	ACAV A2	ACAV A4
MEASUREMENT PRINCIPLE	Flow through capillary or SLIT at a given Pressure	Flow through capillary or SLIT at a given pressure
VISCOSITY RANGE Capillary SLIT	 3 to 8.0 x 10^3 mPas 5 to 10.0 x 10^3 mPas	 3 to 2.0 x 103 mPas 5 to 10.0 x 103 mPas
MAX PRESSURE	350 bar	90-100 bar
MAX SHEAR RATE capillary	2 million 1/s	0.7 million 1/s
MAX SHEAR RATE SLIT	10 million 1/s	4 million 1/s
MIN. SHEAR RATE	100 1/s	5 000 1/s
SOFTWARE	Windows 7	Windows 7
MEASUREMENT OPTIONS	Capillary, SLIT, Air Content, Spray Nozzle	Capillary, SLIT
AUTOMATED CLEANING	Yes	Yes
ANALYSIS TIME including self clean	7 min	9 min
SAMPLE VOLUME	1.0 L	0.5 L
DIMENSIONS h • w • l	1590 • 380 • 880 mm	1214 • 391 • 690 mm
WEIGHT	390 kg	170 kg
POWER SUPPLY REQUIREMENTS Power consumption Phases Voltage Frequency Fuse	 7.5 kW 3 400 V 50 to 60 Hz 16 A	 1.0 kW 1 110 or 230 V 50 to 60 Hz 10 A
CONNECTIONS Air Water	 Min. 4.5 bar 3.0 bar (minimum)	 Min. 7 bar 3.0 bar (minimum)

SLIT

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