

MANAGING VISCOSITY IN A DOWN ECONOMY



Figure 1: Brookfield Viscometer with T-Bar Spindle for Testing Peanut Butter and Yogurt

QC Labs are busier than ever! Why? More new ingredients and formulations to test for viscosity along with all the standard food products that require regular QC checks. In a down economy, more effort goes into getting new product out the door so the workload increases. But headcount doesn't grow to accommodate the added workload. Some companies even face the prospect of manpower shortages as open positions go unfilled while businesses try to hold back on expenses.

Testing for viscosity is a "must do" requirement in most food companies since this predicts how the product will flow in use or when consumed. (See Figure 1) The success of the product depends very much on consistent flow behavior (spreading peanut butter on a cracker, icing a cake) and appealing mouth feel (creamy yogurt, smooth honey). Viscosity measurements make all the difference in identifying materials that should be rejected because they don't meet the spec.

Each test takes a few minutes to accomplish with a standard benchtop viscometer. The operator monitors the instrument and observes the data before writing down a number, usually in centipoise, the unit of measurement for viscosity. What if they could simply let the instrument run by itself and report a number automatically at the end of the test? That would save operator time and allow other tasks to be handled while the instrument did its work.

Newer lab viscometers make this possible because they have a built in clock and intelligent firmware that can do calculations. This means that the spindle can rotate for any amount of time predetermined by the operator. And the instrument can sample multiple viscosity data points and report each value separately or "crunch" the numbers to come up with an average value. (See Figure 2)

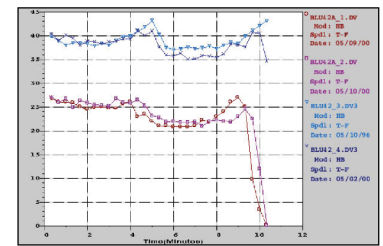


Figure 2: Viscosity Data Output from Test with T-Bar Spindle

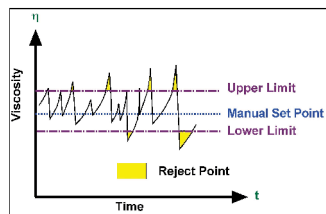


Figure 4a: Before On-Line Control

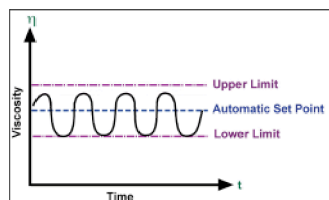


Figure 4b: After On-Line Control

To save even more time and eliminate the whole step of grabbing samples from the production floor, why not consider making the viscosity measurement directly in the mix tank during processing? Or perhaps in the storage tank before the material is dispensed into a container (peanut butter, honey, yogurt) or applied during product assembly (icing). In-line process viscometers (see Figure 3) solve the need and provide the added benefit of instantaneous process adjustment when viscosity gets out of spec. (See Figure 4.)

In a down economy the best solution is to figure out how to do more with less human resource. When it comes to viscosity measurement (and control), the above solutions are going to make a big difference. So don't wait, take action while the opportunity is in your hands.



Figure 3: Brookfield Process Viscometer for In-Line Viscosity Measurement and Control

Author: Robert G. McGregor, Sales/Marketing Manager
Brookfield Engineering Laboratories, Inc., Middleboro, MA 02346
Tel: 1.508.946.6200 x143 1.800.628.8139
Email: r_mcgregor@brookfieldengineering.com