

Scientific analysis wins a material role with identiPol

Identifying the property performance of incoming polymer is a critical issue which may not always receive the scientific analysis it deserves. When the material-in comprises recyclate, then the value of a simple and economical QC instrument really comes into its own, Triton Technology's Dr John Duncan tells John Whitehead

The launch of identiPol QA at the last K fair represented the culmination of many years of development work and as much as £1m of investment for the team which established Triton Technology in 1997.

The concept remained a goal while the firm was developing its position in other analytical fields such as dynamic mechanical analysis, humidity controllers and dielectric thermal analysis.

Throughout, says Duncan, the aim was to provide a simple, economical test tool that would bring quantitative assessment to what he believes is often a remarkably subjective and unscientific quality check. Although MFI analysis is widely used to test polymer flow rate, other characteristics frequently receive little more than a cursory examination.

Infra red techniques meanwhile are quick but costly at typically £30,000 against £6-10,000 for the Triton approach and frequently deliver readings, "that you need to be a graduate to operate," he adds. The approach also suffers when the material is highly filled, especially with carbon black which can mask the base polymer.

The identiPol QA instrument benchmarks material against a predetermined set of parameters giving a Quality Index Score out of ten for each. As PRW experienced during a visit to Triton Technology's base near Loughborough, the procedure requires a couple of granules to be placed on a small disposable sample holder taken from a pre-perforated sheet and placed in the fixture whereupon the instrument's lid is closed.

Heating then takes place allowing the mechanical and thermal properties of the polymer to be ascer-

tained and indicated on the machine's accompanying screen.

Considerable attention has been paid to the way in which the data is shown, based on automated data analysis techniques delivered in conjunction with Richard Brereton at Bristol University to make the results readily understandable.

"It won't tell you every reason why it's different but it's giving you a good warning that the material is not what you expect it to be," Duncan explained.

Broad role

Although he is keen to stress identiPol QA's broad role wherever polymer is being brought in for use, Duncan acknowledges that a prime target market would be the fast growing recycling sector.

This belief is endorsed by the experience of pipe systems giant Polypipe, one of whose plants lies close to Triton's home. The Polypipe Civils business, which specialises in plastic drainage, sewer and cable protection products, has acquired two identiPol QA systems which it employs to measure graded recycled and mixed material in comparison to the test batch of prime polymer material.

The simple scale allows Polypipe Civils to measure the polymeric properties of each batch of recycled material prior to use. The capability is invaluable, says Oliver Monk, the business's head of quality and standards, given the widespread use of recycled material in products such as Ridgidrain Plus and Polystorm Lite.

"This investment marks another initiative the business has implemented to improve its quality control. By grading our recycled material we can be sure of the quality prior to manufacture and deliver improved products to our

customers," says Monk.

Meanwhile, the Triton team are working on the next version of the identiPol device, which will permit polymer identification, it plans to launch at the next K show.



The company, a PDM exhibitor, is continuing to pursue its other activities



PRW's John Whitehead (left) puts the identiPol machine through its paces watched by Dr John Duncan

in the field of analytical instrumentation as well as bespoke consultancy, drawing on the high level of expertise held by the

team, whose directors worked together for Polymer Laboratories before launching Triton Technology.

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