

Proflex use identiPol system to improve the quality of their products

Much is at stake when your customer puts \$50,000 worth of their product inside your product and then ships it around the world and expects it to arrive safe and sound at the other end.

Proflex manufacture a range of multi-layer plastic enclosures for bulk liquid packaging of non-hazardous and food grade liquids. These large enclosures can withstand temperatures of up to 60°C and consist of layers of polyethylene for flexibility and woven polypropylene for tensile strength along with a number of injection moulded components. That's a lot of plastic to quality control. Ensuring that they produce a quality product is the responsibility of Andrew Sangster who is the Global Quality and Technical Director for Proflex.

"Increasingly companies are using this type of technology to ship their products around the world" says Sangster, "the product lowers shipping costs and products can often be shipped in concentrate form and reconstituted and bottled at the other end"

During a recent QA / QC audit Sangster recognised several areas that could be improved and add towards product confidence and reliability. Specifically, it was

identified that there was too much reliance on simple mechanical testing of the final enclosure and a need for audit consistency further back in the supply chain.



Laura Wight loads another sample into Proflex's identiPol QA system.

Sangster sought out new methods and procedures and whilst working with one of their contract testing laboratories, Edwards Analytical, was introduced to the identiPol system from Lacerta Technology. The identiPol is a simple system for the testing and comparison of incoming plastic material, in either thin film /pellet form or a sample cut from a component. A simple 15 minute test is all that is needed in order to generate a "go / no go" indication of the product quality and consistency. "This greatly appealed to us" says Sangster, "along with not needing an expert scientist to run the unit. The only qualification required is a 'degree' of care and attention".

Following trials and evaluations an identiPol system was purchased and since then several changes have been implemented at Proflex's manufacturing facility. The identiPol is routinely used to check incoming film as well as moulded components – and significantly – also a sample of the plastic granules used by Proflex's supplier for testing as well. "This allows us to test what our supplier provides as a product, as well as what was supplied to them as a raw material. It enables us to test the quality of our suppliers manufacturing process and also look at potential issues regarding cross contamination that may arise during manufacturing, something that was not easily picked up by mechanical testing alone" adds Sangster.

"It took some time for us to appreciate how best to use the identiPol for our requirements

"The identiPol is now a fundamental part of our quality strategy..."

and I have to say that Lacerta have been exemplary in their attitude to working with us. They have shown a real strength in their knowledge, support and engagement with us during this process.

The identiPol gives us more than a DSC, gives us more than a DMA and we use it in preference to these techniques that are more at home in the R&D laboratory. Specifically

the determination of the 'end-point' where the plastic has fully melted is a very useful number for us."

Proflex have been successfully using the identiPol at their UK manufacturing unit and have plans to roll out the system to their other manufacturing sites, such as China.

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They rightly take great pride in the resilience of their quality assurance systems and procedures and these are starting to turn the heads of their global blue chip customers who have been impressed with their set-up. "We've detected batches drifting out of specification and the identiPol has allowed us to catch them in time and reject these batches"

Sangster concludes "IdentiPol is now a fundamental part of our quality strategy and we use its existence as a clear indication to our supply chain as to how serious we are about managing the quality and consistency of our products.

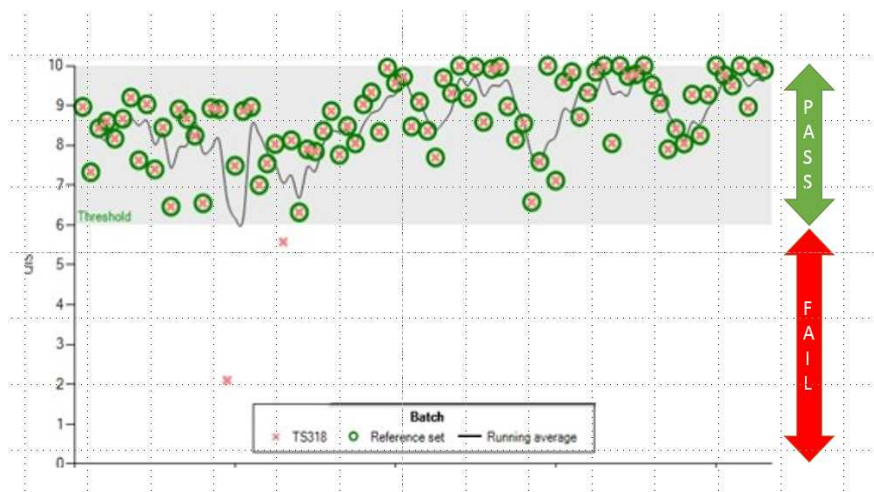
If an organisation may be considering shipping or using a different grade of material, so that they can improve their margin, we will find them out. Most importantly that material will not enter our supply chain."

How the identiPol works

The identiPol is a device based on a hybrid of two techniques: Dynamic Mechanical Analysis (DMA) and Differential Thermal Analysis (DTA). These methods produce analytical fingerprints of a material that reflect its thermal and mechanical properties over a wide range of temperatures. Both these techniques, and variants, are used extensively for studying and characterising thermoplastic materials in the scientific world but considerable barriers have prevented widespread use for QA in factory situations.

The identiPol heats a test sample (typically a few plastic pellets that have been moulded

into a patented sample holder within the unit) whilst measuring the softening and melting behaviour of the plastic film. The measured data are then compared to a library of typical plastics for identification, or with previous batches of the same material to give a Quality Index Score (QIS). The QIS value provides a simple “go / no go” of product conformity and is a unique measure of similarity. A QIS of 10 means the samples are identical, a value down to 7 is indicative that they are similar enough to be considered acceptable for use in production. Values lower than 6 indicate the material should not be used in production as it is too dissimilar.



About Lacerta Technology

Lacerta develop and manufacture a broad range of instrumentation used in the analysis, characterisation and quality assurance of plastic materials. Headquartered in Keyworth, UK and supported by a world-wide distribution network, Lacerta offer a range of unique and patented technologies for scientists, engineers and QA professionals.