

identiPol

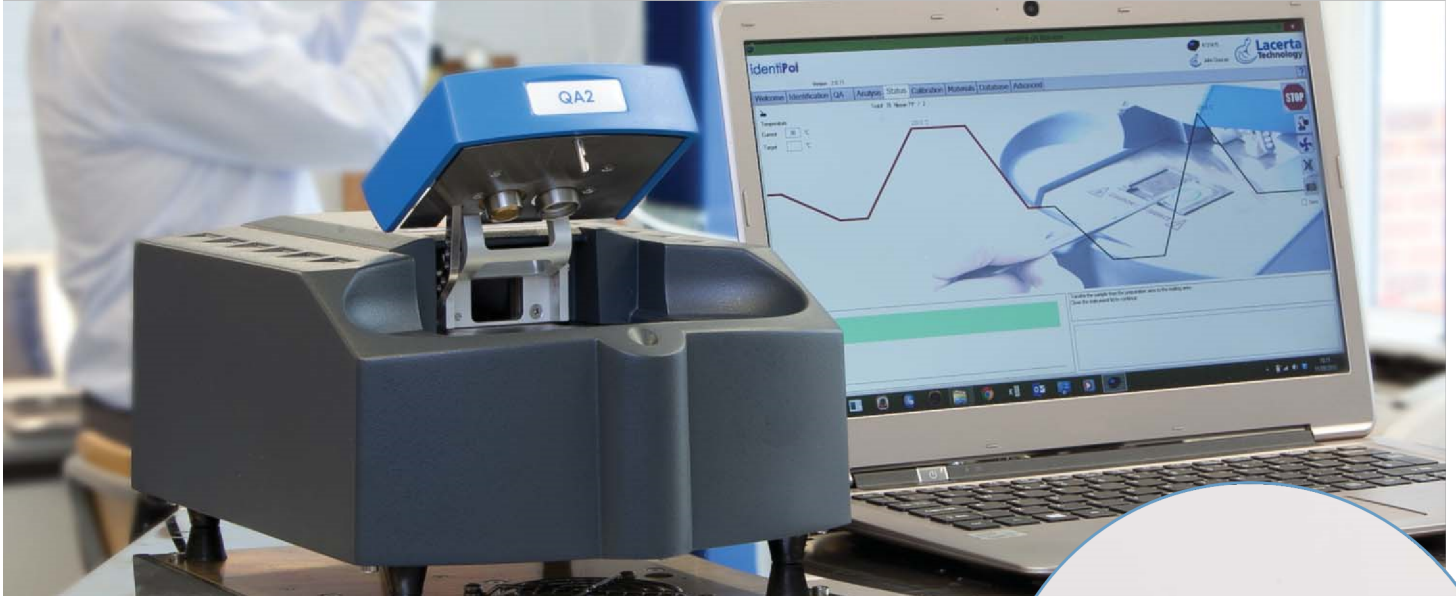
QA2



Plastic Quality Assurance

What is it?

The QA2 is designed to provide unskilled polymer manufacturing and processing staff with a simple tool to assess the quality and identity of mouldable thermoplastics. The system has been specifically designed to provide a quick assessment of incoming material and its suitability for use on the production line. This is achieved by the automated comparison of new batches of material against known good batches, which have previously been tested.



The QA2 is a 2nd generation system offering improved ease-of-use, enhanced capabilities and increased productivity, within a compact portable unit. This intelligent system self-optimises test conditions leaving the operator with only supplier, material and batch information to enter into the software prior to running a test. Built-in diagnostics ensure that the sample is always run under optimum conditions, leaving the operator to get on with other work during the short (around 15 minutes) test time.

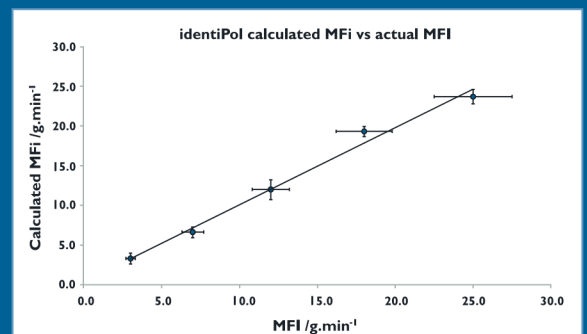


ENHANCED CAPABILITIES

Melt Flow Indication (MFi)

New to the QA2 is the optional capability of measuring the flow characteristics of the sample during the moulding stage of the test. This is a useful and quick measurement of the flow properties of the material and provides an indication of the international standard Melt Flow Index behaviour. We call this Melt Flow Indication (MFi) and it can be used to quickly indicate the range that the Melt Flow Index would fall into.

Clearly the QIS measure is a more accurate test to compare batches, but the MFi is useful additional information, and both values are provided at the end of test. Assessing MFi takes no additional time or operator intervention.



Actual MFi identiPol calculated MFi

Actual MFi	identiPol calculated MFi
3.00	3.3
7.0	6.6
12.0	12.0
18.0	19.3
25.0	23.7

What does it do?

There are three ways in which the QA2 system can be used:



Identification

Identifies the type of plastic material the sample is made of from a library of common thermoplastics. This mode allows you to simply identify a material as LDPE, HDPE PP, PA6 PA66 etc.



Confirmation

Confirms that the sample is similar enough to previous tests on known good material so that it may be used on the production line with confidence, and assures the continued quality of processed product. A detailed certificate of conformance is produced for the customer.



Comparison

Compares two grades of material for equivalence and reports on their similarity. The Comparison mode can be used to compare a homopolymer against a copolymer as well as comparing different manufacturers or suppliers.

How does it work?

Test samples are first moulded within the QA2 to produce a consistent sample for measurement. The test sample is then heated up whilst several thermal properties are measured by the system – these properties provide a fingerprint of the material which is then stored for comparison. The fingerprint is then automatically compared to previous results and a QIS™ value is calculated which indicates the similarity of the test sample to known stored results (called a reference set).



The QIS value is a unique approach developed by Lacer Technology and The University of Bristol to assess the similarities between test results on different samples. The QIS value simply provides an objective assessment and removes operator error in assessing if the most recent test on a sample of material just delivered is comparable and equivalent to earlier deliveries of batches of the same material. The use of the QIS value provides a simple, no-quibble, “Go/No Go” as to whether the material is suitable to use on the production line.

Optional accessories

Camera compatibility

For many, seeing is believing. The QA2 has an optional camera capability that allows the operator to observe the sample area whilst under test. This greatly aids the assessment of full melting (helping adjust moulding temperatures) as well as checking for imperfections in the sample under test. The images from the camera are temperature stamped and can be viewed post-sample test. Viewing the camera pictures helps spot either early melting of a contaminant within a sample, or non-melting (e.g. PP contaminant in PE) and can help to explain low QIS values obtained.



Key identiPol benefits



Save time

- Prevent incorrect material entering production and resulting issues
- Quick “Go/No Go” decision in the factory regarding material quality assurance
- Ensure production is running at full capacity



Save money

- Reduces the risk of wastage
- Change to cheaper suppliers whilst maintaining product quality
- Potentially reduce insurance premiums



Secure your reputation

- Prevent poor production runs being sent to your customer
- Show your customer a traceable material conformance
- Defend product complaints from your customer

Specifications

Sample size	20-30mg (one or two plastic granules, plastic film, or a piece from a moulded part)
Temperature range	Ambient to 350°C
Heating rate	10-100°C/min
Automatic output	Glass Transition Tg (°C) Melting Point Tm (°C) End Point (°C)
Identification:	Polymer Type
Confirmation:	QIS value of similarity
Comparison:	QIS value of similarity
Additional output	Complex thermo-mechanical property data: <ul style="list-style-type: none">• Tan delta• Stiffness (N/m)• Delta T (ΔT, °C)• Moulding displacement (mm)
Printed outputs	Batch summary report QIS test results report Sample identification Certificate of confirmation
Optional accessories	Melt Flow Indication (MFi) Sample viewing camera system

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