Statistical Quality Control

What is SQC?

Statistical Quality Control (SQC) is a term which describes a set of statistical tools used to verify that the quality of products or materials meet a specified standard.

How does SQC work?

SQC records measurement deviation against a specific parameter for example measurements against a certified standard. SQC records the extent to which these values are scattered around the central mean. In practice this allows a test laboratory to ensure quality consistency of feedstock or finished product.

Benefits of SQC to a fuel test laboratory

- Verifies correct operation of measurement instruments and procedures
- Shows that instruments are under statistical control
- Quickly identifies instrument issues or unacceptable result trends
- Assures the quality of products
- Helps to reduce queries and re-inspection costs

Flash point testing of fuels and lubricants

SQC can be used to check the performance of a measurement instrument on a regular basis, supporting final inspection and quality approval before a fuel or lubricant is supplied. Also for monitoring feedstock and in-house standards.

As an example, ASTM D93 test method (Pensky-Martens flash point) specifies that to verify test apparatus performance, an accepted reference value (ARV) of a stable reference material must be determined using standard statistical techniques. This reference material is then used on a regular basis to show that the instrument measurements are under statistical control.
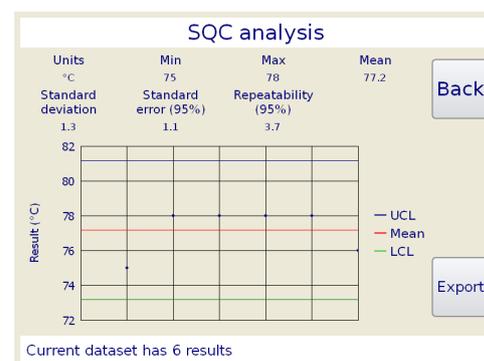
PM-93 - SQC software

The latest PM-93 instrument incorporates proprietary software that provides detailed analysis of test results, calculated mean, standard deviation, standard error, repeatability and plot of results.

Results are recorded in accordance with ASTM D6299 *(Standard Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance)*.

The PM-93 SQC software allows analysis of all test results stored on the instrument or just those with a specific sample ID. Analysis data is easily downloaded via the USB connection.

Further information about the PM-93 Pensky-Martens flash point tester can be found at www.stanhope-seta.co.uk/4756/PM-93-Pensky-Martens-Flash-Point-Tester

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