



Practice Report

>PHOTOMETRY >COLOUR MEASUREMENT
>Chemical industry



Quality and expertise in colour measurement: A success story

Problem

Colour measurement in liquids plus other quality control analyses were conducted in two labs using a number of different instruments. This resulted in laboratory staff wasting time and energy running from one location to another.

Solution

Using a single photometer for colour measurements, quality control parameters and cuvette tests for all samples in all locations.

Benefits

Optimisation of laboratory workflow using a single, simple to use, reliable spectrophotometer has resulted in an important increase in productivity and reduced training time and documentation efforts.

Initial situation

Lombardy, Italy, is one of the leading chemical centres in Europe employing over 70,000 people. One of the best known chemical companies was rightly proud of its quality processes that enable it to supply high quality, high-technology, added-value products. However it was evident that their laboratory productivity could be improved if the workflow of some of their established quality checks could be optimised. Workflow optimisation required rationalisation of the equipment used for quality control checks and a review of the location of these items. There were two different laboratories, one quality control laboratory and one process control laboratory, with laboratory personnel needing to use instruments in both laboratories to complete their work. Naturally, this was challenging in terms of wasted time moving from one laboratory to another and also in terms of ensuring effective documentation of results.

Requirements

The quality control laboratory carried out transmittance measurements at 425 nm and 500 nm with the aim of staying above determined values, as per the product technical specifications. These analyses are performed on finished products that have just come off the production line. In the past, this took place using a traditional spectrophotometer and, sometimes, also the LICO 100 for the Hazen colour scale.

The company was looking for improved performance with a more flexible instrument. The quality control laboratory often also measured concentrations of chloride, phosphorous, iron and other parameters using HACH LANGE cuvette tests. At the same time, the company was also developing a new product that, in order to comply with technical specifications that must be measured using the CIE L*a*b* scale and the Hazen colour scale.



DR 6000 UV-VIS Spectrophotometer

Solution

After thorough evaluation of the products available on the market, the company chose the DR 6000 UV-VIS spectrophotometer, which combines cuvette testing and colour measurement with its own easy-to-use method for transmittance reading.

Benefits

The company benefitted from the following:

- ▶ A single instrument to meet all the analysis requirements: transmittance measurements, Hazen, CIE L*a*b* and cuvette tests carried out directly on the products, requiring less staff training and simplifying documentation of results and SOPs
- ▶ Increased productivity by reducing time wasted moving between instruments and laboratories
- ▶ A spectrophotometer designed for ease of use, the DR 6000 touchscreen driven user interface not only makes testing simple but practical for multiple operators, with consistent accuracy and reliability.
- ▶ Moving to the DR 6000 created additional bench space as the product has a smaller footprint than the products it replaced.
- ▶ Increased staff comfort with the analysis and instrument performance as they focus on the use of a single instrument.
- ▶ All required technical specifications for the company's products can be tested with just the DR 6000.

Conclusions

Almost one year after purchasing the DR 6000, the company is completely satisfied with the purchase and the new organisational changes it has brought about. Colour analysis is now reliable, easy and professional.

Site

Multinational company operating in the chemical industry that produces products for a wide range of industrial sectors.

- ▶ Based in Lombardy, Italy.
- ▶ Performs Hazen, CIE L*a*b* and transmittance analyses for quality control, plus chloride, phosphorous, iron and other cuvette tests for process / wastewater monitoring.



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