

Case Study

Chemicals Analytical Solutions in the Laboratory



High Performance Adhesives and Primers Require Precise Moisture Content Control



In modern car manufacturing, adhesive bonding is increasingly replacing conventional, mechanical bonding techniques. Adhesives provide optimum body strength combined with reduced weight. Eftec has recently started using **METTLER TOLEDO Moisture Analyzers** to speed up their testing processes and reduce their laboratory workload.

Eftec AG

Quality control of adhesives

Moisture content of carbon black

Dry content of primers

Moisture control of raw materials

Eftec AG is a worldwide leading supplier to automotive manufacturers of adhesives, coatings, sealants and sound dampening materials for use at every stage of production from the body shop to final assembly. Almost all materials used in production require a tight moisture content control which is critical in



Car manufacturers use Eftec's products in all steps of production, from body shop to final assembly.



HR83 Moisture Analyzer

METTLER TOLEDO

Eftec supplies a wide variety of bonding, sealing, coating and dampening products for use in automotive manufacturing.



order to ensure trouble-free manufacturing processes and high quality products. Raw materials, such as carbon black, are mixed with additives to form different adhesives. The correct moisture level is crucial for the mixing process. Bruno Müller, head of the QC laboratory explained, "If the carbon black is too wet, then the material will cure prematurely during the mixing process, leading to poor quality products and potentially damaging the mixing apparatus."

Adequate drying for optimal result

The carbon black must be dried in order to ensure that the material does not exceed a defined moisture level. Each batch of dried carbon black is analyzed for its moisture content before the mixing vessel is filled. In the past, this analysis was conducted by specialized laboratory personnel using Coulometric Titration. This meant that the QC laboratory had to work the same shifts as production, which required extra resources.

Looking for a faster and easier way to test the moisture content directly on the production line, Eftec started evaluating moisture analyzers as these instruments

are very robust and can be operated by untrained workers to deliver highly reproducible results.

Mr. Müller chose the METTLER TOLEDO HB43-S for its proven measurement technology, robust design and clear user guidance which ensures trouble-free operation in all environments. The HB43-S combines proven METTLER TOLEDO weighing technology with ultrafast halogen heating, leading to short testing times and highly reproducible measurement results. The cross validation with the titration method in the laboratory showed that the same results were achieved with the HB43-S Moisture Analyzer. The production workers are now able to check the moisture content of the dried carbon black quickly and easily themselves without having to wait for laboratory tests.

Determination of dry content in primers

Adhesives are used to safely bond windshields, headlights and taillights and also provide vehicle body strength. In vehicle interiors, adhesives bond headliners, door panels, instrument panels, seating components and more. Primers increase the bonding quality between the adhesive and the metal and glass surfaces and therefore play an important role in the whole adhesion process.

Eftec produces a large range of high performance primers. The quality of a primer

depends, among other things, on its final dry content. Therefore, Eftec regularly verifies the dry content of different primers with an HR83 Moisture Analyzer from METTLER TOLEDO. The HR83 combines a resolution of 10 ppm with unique tools for test method development and quality control. Methods for up to 40 substances can be stored and accessed directly in this versatile instrument, making the testing of new substances highly efficient.

Working with METTLER TOLEDO

Eftec AG in Switzerland has decided to focus on METTLER TOLEDO as its main provider for balances and analytical instruments. To maintain the plant uptime and ensure trouble-free measurements, Mr. Müller also values efficient application support and fast troubleshooting, remarking, "When I now think of new equipment, I think first of METTLER TOLEDO."

► www.mt.com/Moisture

Since 1985 Eftec AG has been a member of the EMS group which is active worldwide in the areas of Performance Polymers and Fine Chemicals/Engineering. Eftec AG has production facilities in Switzerland, UK, Spain, Belgium, Germany, Czech Republic, Russia, Romania, USA, Mexico, Brazil, Thailand, China and India.

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