

# Case Study

**Automotive** Weighing Solutions in the Laboratory



## Moisture in Plastics a Key Deciding Quality Factor

**The German based Karl Kufner KG is a leading manufacturer and supplier of precision molded plastic components to the automotive industry. To ensure consistent quality standards across its range of products, the company has recently incorporated an HR83 Halogen Moisture Analyzer into its production process.**

### Practical Solutions for Production Sites

Karl Kufner KG manufactures products, such as strainers for fuel injection valves and filtration components for ABS brake systems for major automotive manufacturers and their suppliers. Most of these components are metallic, but also contain a lot of plastics, which are becoming increasingly popular in automotive components. Plastics are more cost-effective than metals and are also easier to handle in injection molding processes.



### Karl Kufner KG

Manufacturer and supplier of screens, strainers and filters

Moisture determination with Halogen Moisture Analyzers



HR83 Halogen Moisture Analyzer

**METTLER TOLEDO**



A lab technician of Karl Kufner tests plastic parts with HR83.

Karl Kufner KG has been using plastics in its products for a long time and has recognized the increasing customer demand for consistent product quality and the consequent need for better regulated processes in plastics handling.

Mr. Hans Lang, head of quality management at Karl Kufner KG, explains, "Moisture in plastics is a very important factor influencing product quality so we routinely monitor moisture content in plastics both before and during production."

Mr. Lang continued, "The traditional moisture measurement method in plastics is with Karl Fischer titration but it is too complicated for normal, day-to-day applications – we wanted equipment that is intuitive and can be used by every member of staff. We have chosen METTLER TOLEDO's HR83 because it is very easy and quick to use and is suitable for use in production environments. It provides reproducible results, which is very important in order to keep our materials within tight moisture tolerances."

### Meeting Every Customer Demand

Using this enabling technology, Karl Kufner KG is in a strong position to satisfy the demanding requirements of its customers. "We didn't do any moisture testing - it was not common practice. Now, up to five tests are performed every day by four or five operators," says Mr. Lang. "When we first started to use the HR83, we changed our processes based on the results it produced. We have now optimized our washing and injection processes on the strength of these measurements, mainly by changing the duration of the washing process and adapting the granule drying phase."

### Proven Quality all Year Round

"Our measurements continue throughout the year," elaborates Mr. Lang. "For example, in the winter when temperatures are low, the plastics are further deprived of moisture. Using the analyzer, we can measure exactly how plastics react to cold temperatures and we can adapt our processing with longer washing steps and shorter drying phases to level out the residual moisture."

Karl Kufner's customers now benefit from the stringent quality control that is in place. Mr. Lang concludes, "We think this type of quality assurance will be important for all automotive plastic parts in the future. We are currently looking into other areas where we could use precision weighing instruments. The smaller parts that we produce are very light as they are made of plastic, so we will probably need precision balances for other aspects of quality control at Karl Kufner KG in the near future."

► [www.mt.com/HR83](http://www.mt.com/HR83)

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