





Safe food

Testing institute benefits greatly
from automated sample preparation

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German test laboratory Labor Friedle GmbH analyses food and food ingredient samples. Throughput and traceability are essential for providing an efficient and professional service to its customers. The company recently installed a Mettler Toledo Quantos QA gravimetric liquid-dispensing system and a Quantos WorkflowBox in order to semi-automate sample preparation and eliminate manual transcription of its data and results. Not only can Labor Friedle now guarantee audit-proof results, but processing time has moreover been reduced by around 66 %, enabling it to handle more samples and hence schedule additional clients.



Lars Müller, born in 1983, studied Chemical Engineering at the ETH Zürich, graduating in 2007. He has worked for over 5 years at Mettler Toledo as the Quantos Product Manager.

As a DIN EN ISO/IEC 17025 accredited lab and member of the Relana[®] Quality Circle, Labor Friedle regularly prepares food and food ingredient samples for sensory, microbiological, chemical, chemico-physical, and mycological assay. This requires the preparation of highly accurate stock solutions to generate quality results that ensure consumer safety and reduce manufacturer liability. Until now, the whole process was undertaken manually with laboratory technicians preparing the stock solutions, weighing samples, and transcribing results by hand. The procedure was time-consuming and open to error, given the manual nature of the process. Seeking to improve sample preparation processes as well as assure accurate results for its clients, Labor Friedle recently purchased the Quantos QA gravimetric liquid-dispensing system and the Quantos WorkflowBox.

Ensuring accuracy and traceability

Before obtaining the Quantos equipment, Labor Friedle used an analytical balance to weigh each substance directly into a volumetric flask by hand. Even with professional handling, the amount weighed was subject to variation and hence the preciseness of the concentration of the solution could not be fully guaranteed. Weighing results were also handwritten in a lab journal and then manually input into Excel for subsequent analysis. Any variation in the process had the potential to corrupt all down-line measurements, and errors were nearly impossible to identify and correct. Now, the technicians weigh the substance directly into the target container; the Quantos QA system records the actual amount of substance weighed and automates the gravimetric addition of the precise amount of solvent required to reach the specified concentration. The Quantos



Preparing samples using the Quantos QA system The raw substance for the stock solution is weighed in by hand, then Quantos automatically creates the correct concentration using the liquid module.



The Quantos QA system, WorkflowBox and label printer. The integrated solution automatically makes raw substances and solvents from the substance database available directly on the colour display of the scales.

WorkflowBox supports the overall process by controlling the whole system in accordance with customer- and application-specific requirements, storing all process details for full data traceability, and providing further capabilities like label printing, report generation, and data export.

Higher accuracy with increased throughput

Using Quantos, Labor Friedle's overall process for preparing a stock solution, including labelling and

calculations, is now nearly three times faster: what used to require 15 minutes now takes just 5.

Of critical importance to Labor Friedle is that the likelihood of error is significantly reduced, even when preparing several solutions simultaneously. Thanks to the Quantos system, reworking is practically eliminated. The process now runs so efficiently that Labor Friedle has been able to handle more samples and hence schedule additional clients. The company is happy both to reduce its capital outlay and to increase its turnover.



Exploring the Quantos solution

The Quantos QA system integrates powder weighing and liquid dispensing into a single gravimetric process. This automated procedure eliminates any variation attributable to the user and produces highly accurate results. The powerful combination of the Quantos WorkflowBox and the Quantos QA system provides the user with a full workflow solution for their specific application and supports compliance with the CFR 21 Part 11 guideline concerning electronic data recording. Even with a relatively complex application, the Quantos system is easy to implement.

Ongoing expert support

Labor Friedle also opted to have its technicians trained by Mettler Toledo to enable them to modify the workflows implemented in the WorkflowBox. The parameters of the workflows can be adjusted in line with any changes in its processes. The training means the changes can be done in-house with very little downtime, maintaining the company's ability to process samples in record time.

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