

Cosmetics, Fragrances, Food Ingredients

Analytical solutions in the laboratory

2 News

21st Century Liquids Quality Control

Liquids can be characterized in various ways and the determination of their physical and chemical properties are routine yet essential requirements. Flavor and fragrance mixtures and finished liquid cosmetic formulations are often characterized by density and refractive index measurement. With LiquiPhysics Excellence, these tasks become much more reliable and easier to execute.

Simple Operation

A touch screen interface performs various operations with One Click™, enabling quick, simple and direct access to all routine tasks. Each user can personalize their home screen and shortcuts, therefore, eliminating instrument operation error. A barcode reader can also be used to input sample data or select appropriate analysis methods ensuring constant accurate measurement parameters.

Sophisticated Efficiency

Limited lab space and a tight budget? Need to perform multiple measurements? Simultaneous determination of several parameters is now possible with a simple measuring system expansion, protecting investments and eliminating the need to purchase additional instruments for more

advanced measurements. LiquiPhysics even allows the simultaneous measurement of density, refractive index, pH and color in the same sample making it an extremely efficient tool for the flavor and fragrance or cosmetics analyst.

Maximized Security

LiquiPhysics Excellence instruments are designed to produce accurate results and optimize user operations. However, each environment has its own specific requirements, including:

- specific format sample lists,
- pre-defined report format,
- data automatically exported ERP system,
- operator guidance through standard operating procedures and interactive screen messages.

All such additional requirements can be



METTLER TOLEDO

addressed by LabX2010 LiquiPhysics PC software to compliment the LiquiPhysics instruments.

Aspects of LabX most relevant for the flavor and fragrance and cosmetics industry include:

- Data storage of all raw results allowing full traceability and, therefore, full compliance with HACCP, BRC and IFS requirements.
- Tailored report format to suit proprietary documentation standards.
- Results evaluation based on predefined limits, relieving the operator from manual, error prone comparison.
- Facilitation of automatic, bidirectional LIMS/ERP integration in order to be compatible with the software system in operation.
- Product database for many thousands of different products so that a comparison with original specification can be performed by the computer, fully automatically and error free.



A barcode reader can be used to input sample data or select appropriate analysis methods, ensuring constant accurate measurement parameters.

And much more...

METTLER TOLEDO density and refractive index measuring systems increase the simplicity and security of each analysis process for even the most sophisticated systems. These include smart accessories, such as ErgoSens™ for hands-free operation, AtmoSens™ for accurate adjustment to 5 digits and the SC30 sample changer for automating solutions.

Density and refractive index measurement, pH and color measurement and titration are amongst the most important tests performed in the flavor, fragrance and cosmetics industry. With LiquiPhysics Excellence and the METTLER TOLEDO One Click concepts, such tests can be executed in a time saving and secure manner saving time and effort and minimizing product recall due to unsatisfactory product quality.

► www.mt.com/LIQC



LogStraight™, a biometric user management with fingerprint reader for immediate identification.

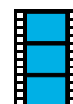
Tips & Tricks

A new era of density and refractive index meters

LiquiPhysics™ provides all the tools necessary in order to automate the determination of the most relevant parameters within the routine quality control of flavors and fragrances. Once the vials are placed on the tray, LiquiPhysics™ Excellence takes care of the rest automatically.

- Density, refractive index, colour and pH in ONE sample for better efficiency
- Smart codes™ barcodes for simpler method selection and result evaluation
- LabX™ for easy LIMS integration and remote control

Watch the movie and learn more about the new LiquiPhysics.



► www.density.com

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The Right Wax Formulation for Lipsticks

Lipstick contains a variety of waxes, oils, pigments and emollients. The wax is a very important component as it gives lipstick its shape and ease of application. In order to analyze the composition of wax blends, a fingerprint of the melting can be taken. This is done using differential scanning calorimetry (DSC).



DSC helps compose new formulations

Many types of waxes exist and include the following:

- Bees wax – a substance obtained from honeycomb.
- Carnauba wax – an exudate from Brazilian wax palm tree leaf pores.
- Candelilla wax – obtained from the candelilla plant and produced by immersing the plants in boiling water containing sulfuric acid and skimming off the wax that rises to the surface.

atmosphere. The DSC curves show that all 3 samples exhibit different melting peaks. The melting peaks correspond to 3 wax components present in the material. The slight differences in the evaluated peak temperatures can serve to distinguish the materials from each other.

The DSC 1 is a valuable instrument for R&D purposes in the cosmetic industry. It provides excellent and reliable calorimetric measurement performance and high temperature accuracy.

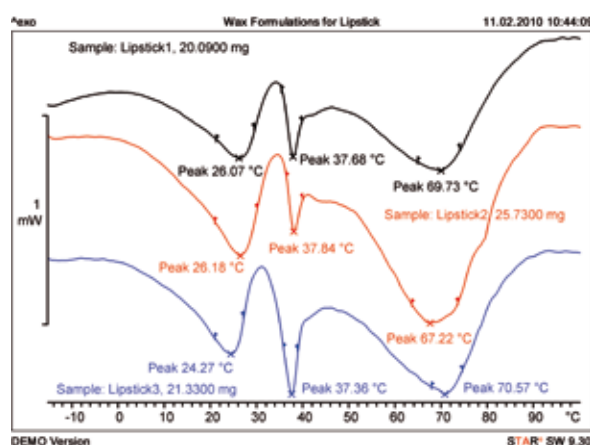


Figure 1. Fingerprint measurements of 3 different wax blends by DSC.

DSC is an excellent tool for analyzing the melting behavior of wax blends. The results, shown in Figure 1, were measured using the METTLER TOLEDO DSC 1, with intracooler, and evaluated using the STARe software.

Samples of 3 different lipstick base materials were heated from -15 °C to 100 °C at a heating rate of 10 K/min in a nitrogen

► www.mt.com/dsc



Conforming to High Quality Standards with GWPExcellence™

Fragrance, flavor and food ingredients manufacturers frequently supply products to pharmaceutical companies, e.g. to achieve a pleasant taste and smell for a children's medicine. These suppliers must meet the same stringent pharmaceutical regulations. Routine balance testing is, therefore, critical and repeatability is the most important factor when determining the reliability of a weighing result. The new GWPExcellence firmware guarantees simple and effective conformity.



Excellence Balance XP205

Repeatability testing ensures measurement certainty

The typical variation of a weighing result (repeatability) is measured by performing single weighings repeatedly using the same weighing object and then calculating the standard deviation. Particularly when weighing small objects, which only use a small part of a typical laboratory balance's weighing range, repeatability becomes the dominant factor concerning measurement uncertainty.

For this reason, it is always recommended to determine the repeatability on the actual balance in its actual location. The same weighing object should always be used, ideally similar in weight to the actual samples to be weighed, or at least using an object which represents around 5% of the weighing range of the balance, in order to test the balance in the low area where repeatability exerts the strongest influence.

When compared with testing the sensitivity of a balance, testing the repeatability is

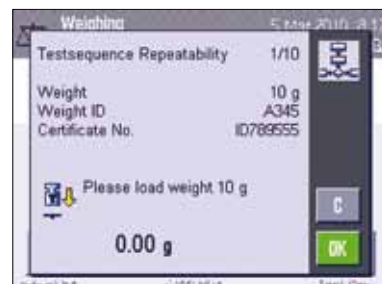
more difficult and requires more effort. It is not simply a matter of placing a single test weight onto the weighing platform (sensitivity testing); testing the repeatability involves placing the test weight onto the balance 6 to 10 times under identical weighing conditions. Each time the weighing is performed, both the displayed value and the displayed zero value needs to be noted. The repeatability is then calculated by determining the standard deviation of the differences of the net repeated weighings from the mean value.

Testing help

The new GWPExcellence software for XP and XS Balances, which is also backwards compatible, includes all the important testing methods for correct and timely balance routine testing procedures.

This new functionality not only automatically displays a reminder when the tests need to be performed, but also guides the user, step by step, through each testing procedure, therefore eliminating mistakes. Once the test is completed, a clear

result is shown and automatically stored in the balance in accordance with GxP requirements. GWPExcellence eliminates testing errors and ensures full compliance to testing procedures.



The balance guides the lab technician through the repeatability test.

Easily implemented

Existing routine testing processes don't need to be newly developed when implementing the GWP® functionality as the existing SOP can be simply transferred to the balance. Even newly recommended procedures, according to Good Weighing Practice, are easily integrated into the process.



For strictly regulated applications, there are a number of supporting validation documents available which simplify the process of integrating the new firmware so that it can be implemented quickly, safely and correctly. Where necessary, METTLER TOLEDO also offers a configuration and verification service to ensure correct implementation.

Full compliance

With routine testing procedures implemented on laboratory balances, tests are always performed correctly and on time and according to the defined SOP. Supplier companies can be sure that their products meet with the strict regulations required by pharmaceutical companies.

► www.mt.com/gwp

Upgrade your XS/XP balances with GWPEXcellence™ for free

Do you own a XP or XS balance? Each balance's model name can be found somewhere on the front of the balance – it may be in different places depending on the model.

If the model name begins with XP or XS, please go to the internet site to find out how to get GWPEXcellence free. Download is for registered customers only.



For further information, go to:



► www.mt.com/GWPEXcellence



Routine Testing of Balances

Can You Afford Not to Test?



Processes that are subject to quality standards require routine testing of balances and scales. The risks associated with weighing on inaccurately working weighing equipment are high and costly when taking production loss, repeated tests or even product recalls and a damaged reputation into account. It pays to understand about regular balance testing and METTLER TOLEDO's team of specialists are here to help.

For testing of industrial scales, METTLER TOLEDO provides an entire portfolio with weights up to 5 tons.

daily to monthly testing, depending on the frequency of balance use, the criticality and tolerance of the process.

The graphic below shows installation and initial calibration performed by an authorized technician. The user is responsible for routine testing in between technician-performed calibrations.

What are the benefits of routine testing?

Routine testing ensures the early detection of potential balance failure. If performed frequently enough, an out of tolerance status can be detected before any harm is done.

What tests should be performed?

Balance sensitivity and repeatability should be tested, preferably according to manufacturer instructions. METTLER TOLEDO encloses SOPs in all CarePacs,

which guide the user through the routine testing process.

How often is testing required?

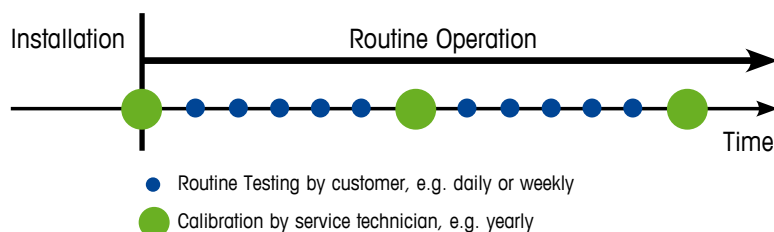
In order to provide easy to follow guidance regarding the selection of CarePacs or single weights and appropriate routine testing frequencies, METTLER TOLEDO has developed Good Weighing Practice™. GWP® ensures correct testing at optimal intervals to stay within tolerances. Following this global guideline helps to avoid rework costs. Intervals can spread from

Is testing required for balances with auto-calibration technology?

Temperature changes in the balance are activating the auto-calibration system to correct deviations that could negatively impact weighing results. However, since built-in test weights are not traceable to national or international standards, the US Food and Drug Administration (FDA) still requires testing.

How are appropriate test weights selected?

According to GWP®, routine testing is performed using calibrated and certified weights. Typically, tests are executed in the upper weighing range close to maximum load and at approximately 5% of the weighing range. To ensure





CarePacs® include tweezers, gloves and other accessories for professional weight handling.



Routine testing is a safe, fast and convenient way to ensure accurate and reliable operation of balances and scales.

adequate weights, the weight selector at www.mt.com may be used for CarePacs recommendation and single weights if the balance's maximum capacity is larger than 8 kg.

Is routine testing also required for industrial scales?

METTLER TOLEDO recommends routine testing for both laboratory balances and industrial scales. The intention of routine testing is to detect balance operation outside of customer defined process tolerances. On the other hand, service technicians assess the complete balance performance by testing all relevant weighing parameters according to technical specifications defined by the manufacturer.

What actions need to be taken when routine tests fail?

GWP® typically recommends two test limits. The control limit tells the user that the balance is out-of-tolerance and can no longer be used. The warning limit indicates that the balance is still within the required tolerance but might get close to the control limit and therefore must be kept under surveillance

Where can help be found?

For assistance contact your local METTLER TOLEDO organization or a local representative. Contact information can be found at www.mt.com.

To learn more about GWP® and routine testing, go to:

- www.mt.com/carepacs
- www.mt.com/gwp

Seeing is Believing

Watch the Video and Convince Yourself

The multimedia gallery demonstrates innovative solutions for even the most challenging weighing process in your lab. The unique product features and innovative accessories guarantee efficient and ergonomic sample handling.

Common lab dilemma



Disturbance of electrostatic

Your sample sticks to the tare container due to electrostatic charging and the balance won't stabilize.



Spillage of precious samples

You use weighing paper to transfer precious sample to a tare container. The sample is easily spilled and results are inaccurate.



Handling of toxic chemicals

You're handling harmful chemicals and want to avoid direct contact.

Our solutions



► www.mt.com/lab-AntiStatic

Anti-static kit – discharges samples instantly

The U-Electrode remove charges from samples and tare vessels immediately. Toxic substances no longer pose a threat to the user and cross-contamination of samples is prevented.



► www.mt.com/ergoclips

ErgoClip – doses samples securely

The ErgoClips safer dosing method substantially reduces contamination risks, enables fast dosing processes and increases productivity.



► www.mt.com/titration-solventmanager

Solvent Manager – handles chemicals safely

The Solvent Manager increases operator's safety in the lab by ensuring that direct contact with harmful chemicals is avoided.



Take the direct route to what you are looking for

METTLER TOLEDO's product finders in mt.com provide a straightforward way to find a product best matching your needs. Just key in your specific criteria and let the product finders do the rest.



EasyFinder™ finds your balance of choice

Choosing the right balance for your lab becomes straight forward. Simply enter your selection criteria, select the models of interest and learn more about and/or compare details of the chosen models.

► www.lab-balance.com



Find a NewClassic balance in just 30 seconds

Just enter your technical criteria and the quick search guides you through a variety of NewClassic models. Click on the product's picture to learn about the product in detail.

► www.mt.com/newclassic



Sensor product guide for optimized measurement

This interactive and animated tool helps you to identify the most suited sensor for your specific application.

► www.electrodes.net

Density and Refractive Indexes in One Single Run

In order to ensure the consistent product quality of flavors and fragrances, the refractive index and density of each individual batch need to be checked. The new LiquiPhysics Excellence line includes all tools necessary to automate the measurement of both parameters simultaneously.



Modular solutions

Upgrading a RM refractometer with a DX density cell module is a cost- and space-saving solution allowing the determination of both density and refractive index.

Sample ID: 414356			
End of task			
S.G.	0.9554	nD	1.3345
pH	5.34	Color L	23.5
DM	Test [°C] 20.00 Tcell [°C] 20.00	RIX	Test [°C] 20.00 Tcell [°C] 20.00
Calculated			

Simultaneous data

The quality control of flavors and fragrances requires the determination of several parameters. LiquiPhysics™ Excellence can perform all measurements in one run.

LabX

METTLER TOLEDO

Data traceability

LabX™ PC software effortlessly runs and controls each instrument and safely transfers data onto a superordinate ERP or LIMS system.



Continuous measurement

ScanStraight facilitates sample data input when performing measurements on a sample changer. Once the vials are placed on the tray, LiquiPhysics™ Excellence automatically takes care of the rest.

One Click™ Standard Preparation

Powered by LabX™

Chromatographic analysis is vital for ensuring consistent product quality of flavors and fragrances. Using accurate standard solutions is essential, and solutions are typically made several times a day with each one taking up to 15 minutes to prepare.

One Click™ Standard Preparation powered by LabX offers full user guidance and automatic data handling making the whole process much faster and worry-free.



New Way
3:30 min.



One Click™ Standard Preparation – Powered by LabX

Simply start the method with the One Click™ shortcut on the balance touchscreen. LabX guides you step-by-step through the SOP on the balance, performs your calculations automatically, and takes care of saving all your data. The complete solution can be tailored to match your process requirements.

1



One Click™ Start

Enter the desired concentration. Required weight of substance is calculated automatically.

2



Weigh

ErgoClip for direct dosing into flask. SmartTrac™ guide helps to weigh the correct amount.

3



Result Calculation

Concentration calculated automatically. Green screen indicates result is within specified tolerances.

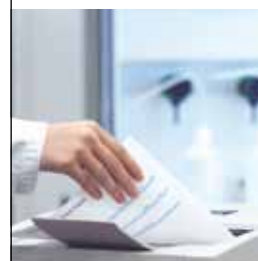
4



Label

A flask label is printed automatically. All information is included – even the expiry date.

5



Documentation

Everything is automatically recorded. Customized reports can be printed automatically.

Spotlight on Promotion

Excellence Melting Point Systems Trade-In Offer



Trade in your old Melting Point apparatus and get a MP70 or MP90 for an exceptional price!

Simple, efficient & video-recorded

- Color touch screen with One Click™ user interface
- Simultaneous determination of up to six samples
- Color video recording and convenient playback on the instrument
- Conformity with current standards: Ph. Eur., USP, ASTM, ISO and others

Offer is valid until December 31, 2010.

► www.mt.com/one-click-melting



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For more information