

Dairy & Beverages

Industrial Weighing & Product Inspection



11
News

Excellence in Net Content Control at Nestlé Dong Nai Factory

Producing millions of packages a day offers huge saving potential through smart optimization processes across all filling lines. Nestlé Vietnam improves manufacturing efficiency by using latest integrated Quality Data Management Solution.



When Nestlé Dong Nai started operations in the late nineties, it was very clear to the factory management that a state of the art net contents control system was exactly the right tool for the new factory. A networked PC based FreeWeigh system was deployed factory-wide; initially connecting to 4 sampling stations.

The challenge

Product varieties and throughput have drastically increased over the years. Efficient and effective Net Contents Control procedures are considered one of the key factors to remain successful in a competitive market environment. Besides controlling net contents, a computerized system is also expected to provide all relevant data and reports for a swift batch release.

Integrated quality data management

Today, products from numerous lines are sampled on 24 static 0.01g scales and one 100% In-line Checkweigher, all connected to the FreeWeigh.Net® Quality Data Management System through the factory-wide Ethernet LAN. Target weight, tolerance limits, sampling frequency and several other parameters for each product are stored in the system and alarm line operators, when it is time to take samples. All sample data are analyzed, stored and archived in the FreeWeigh.Net SQL database. In case fill weights at any of the lines begin to drift away from the pre-set limits; the line operators are prompted for immediate adjustment of the filling process.



METTLER TOLEDO

Meet net content legislation and minimize overfill

The consequent sample check of all production batches helps Nestlé to fulfil national and international Net Content Legislation assuring satisfied customers. At the same time product give away can be kept at an absolute minimum.

Mr. Vo Thanh Hau – QA Manager concludes: "FreeWeigh.Net is the perfect tool to optimize filling quantities while observing legal limits."



Control point beside production line.

► www.mt.com/freeweighnet

Key customer benefits of FreeWeigh.Net®

- Significant reduction of product overfill cost
- Compliance to legal fill requirements
- Standardized and simplified processes
- Online monitoring and alarming
- Short reaction time in production
- Automated reporting
- Scalable system implementation and enhancement
- ERP integration
- Fast ROI (<12 months)



FreeWeigh.Net® operator screen



Sampling station connected to FreeWeigh.Net® operator screen.

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A New Angle to Detecting Contaminants in Fluids

The launch of the new FluidCheK x-ray system is a significant breakthrough in the detection of contaminants in fluids. It was developed to meet the needs of manufacturers and packers of beverages and other liquids. The FluidCheK is equipped with advanced image-scanning software and employs x-ray beams at an angle for total product safety.

Detection of dense contaminants

The new FluidCheK x-ray system ensures accurate detection of dense contaminants including glass, metal, stone, plastics, such as, and rubbers, such as Viton. It is specially designed to inspect glass bottles and jars, metal cans and plastic bottles, and is especially effective on containers with a domed base.

“It has been traditionally difficult for perpendicular horizontal beam x-ray systems to inspect the base area of glass and metal containers with raised internal bases or domes. Since the dome area, which forms part of the x-ray base image, is denser than the rest of the container, contaminants can be hidden, resulting in detection of blind spots”, said Niall McRory,

New Product Development Sales Manager, METTLER TOLEDO Safeline. “In response to specific customer requests, Safeline sought to develop an x-ray system that achieves optimum contamination detection in packaged fluids. This had to be done whilst ensuring maximum throughput and ease-of-operation. FluidCheK is the result of that endeavour”.



A fresh approach to contaminant detection in fluids

The FluidCheK x-ray inspection system takes a fresh approach to the detection of contaminants in liquids; it focuses inspection on the base area rather than on the entire container. This approach is highly effective because contaminants are usually denser than the surrounding liquid, so they will always sink to the bottom of a container.

Advantages of inspections a container base

The advantage of concentrating inspection only on the base of a container is that the x-ray generator can be moved much closer to the product. This reduces the distance the x-ray beam must travel to the detector. Therefore increasing the quality of the x-ray image and improving the sensitivity and probability of detection, resulting in outstanding product safety.

Production line location

The FluidCheK is ideally located at the end of the production line. This acts as a final product inspection step to ensure that no contaminant has entered the product during production or sealing. By offering

accurate quality control, the FluidCheK helps brands comply with local and international regulations, retailer requirements and Hazard Analysis and Critical Control Point (HACCP) practices.

The FluidCheK uses Safeline's new x-ray transparent slat band modular belt. The belt's design and the low x-ray attenuation properties of its materials allow for excellent transport properties with no loss in detection sensitivity. It is ideal for high-speed glass container and can lines, offering smaller gaps for smoother transfers, easier integration with existing modular conveyors and easier rejection or diversion of defect packs. If glass breakages occur on the line, the belt can be easily removed in minutes for cleaning or maintenance. An important feature of the FluidCheK is that it performs a completely "non-contact inspection". This means that the products are not touched at anytime as they pass through the machine to prevent product handling issues and damaged pack labels.

For further information visit

- ▶ www.mt-fluidcheck.com
- ▶ www.mt.com/safeline-xray



Best Practice

White paper – how safe is X-ray inspection of food?

This new white paper shatters the misconceptions about x-ray inspection of food. The paper answers some important questions for food manufacturers, including:

- Why use x-rays to inspect food?
- What are the effects of x-rays to flavours, textures and nutritional value of food?
- What is the difference between x-ray inspection and food irradiation?
- What is the difference between x-ray radiation and radioactivity?
- How safe are x-ray systems used in the food industry?



Download this white paper free:



▶ www.mt.com/xray-safety

Maximize Yield of Raw Material with Smart Formulation System

The new released dispensing and formulation software solution FormWeigh.Net® is designed to improve process efficiency and maximise production yield. In combination with reliable weighing technology it guarantees highest security, full traceability and clearly supports cost effective production.

Reliable and efficient weighing with IND780

FormWeigh.Net® 2.0 software combined with the IND780 weighing terminal ensures fast and reliable dispensing of the recipe ingredients. Working instructions on the user-friendly 5.7" graphic display leads all users fast and safely through the production process.

Clearly displayed recipe structures and graphical support functions such as SmartTrac – guides the user quick and safely through their daily filling or batching work. Already after a short training session the operator is familiar with the system and able to use it effectively.



IND780 Terminal with SmartTrack® filling guide

Complete documentation – clear traceability

FormWeigh.Net® offers a complete tracking and tracing solution for your production area. In case of an emergency all relevant data can easily be retrieved. Due to different search and reporting possibilities the complete relevant product range can be isolated and immediate action can be defined.

Reduction of errors – improved productivity

Ease of use of the software and intuitive operation of the IND780 weighing terminals allow quick and safe production processes. Faulty mixtures and any waste of valuable raw materials belong to the past.

Reap the benefits of FormWeigh.Net® in combination with IND780 and get a constant and reproducible product quality, less batch rework and an improved raw material yield.

► www.mt.com/formweighnet

Tips & Tricks

Maximize your profitability during formulation

Weighing and formulation are both critical steps in every production process. Formulation errors can destroy entire batches, losing you vast amounts of money. In many cases, this also results in the loss of expensive raw materials and inevitably leads to delays in the production process.



Download our FormWeigh.Net® ROI Calculator now and calculate your optimization potential during formulation, based on your own products.



► www.mt.com/formulation-calculator

NEW!

Designed to Speed up Production – Built to Last

The new food bench portable scale line is designed to speed up your production and to withstand all harsh production environment and cleaning procedures. It offers high configurability, colorWeight® display technology for rapid manual checkweighing or classifying processes. The open and rugged stainless steel constructions facilitates fast and thorough cleaning procedures. It is simply designed to accelerate and trace your production process.

Current regulations and processing trends in the food industry require not only safe and traceable products, but also process optimized and hygienic designed production equipment. The new ICS food scale line combines both and offers a seamless integration into the production process.

Tailored to your needs

The complete product family is based on different terminal types (ICS4x9/ICS6x9) with multiple functions, different keypad

options up to full graphical color screens. The terminals can be mounted in three different ways to the weighing platform (column, compact or separate version). Full stainless steel platforms from 3 kg x 0.5 g up to 600 kg x 100 g are available.

Fast, intuitive data entry

All terminals are designed for a fast and straightforward weighing process. A bright and large display provides excellent readability and all relevant parameters are easily entered on the intuitive keypad.

Selectable language options increase your operator's ease of use and further improves your process speed.

Colored results for fast check-weighing and classifying

The sharp display with different color options shows easy readable, unmistakable information as to whether or not the weight is within the tolerance limit.

Resist wet and harsh 24/7

The full stainless steel series of scales provides a flexible and rugged solution for a wide range of weighing tasks in light wet or harsh production processes. All parts have been built according to the latest hygienic design guidelines supporting fast and efficient cleaning procedure.



Column – ICS4x9...c



Compact – ICS4x9...c

Terminal fix mounted in front of the weighing platform. One unit, portable and robust



The right load cell for an extended life time

Choose the right load cell (aluminum potted IP65 protected up to fully hermetically sealed IP69k) according to your environment and your cleaning procedure. This increases long term life and up time of your scale and reduces lifetime ownership costs.

Trace your results and improve your safety

Good traceability results depend on well calibrated equipment, on safely stored process parameters, on seamless data integration and on connectivity to scanners and label printers. ICS6x9 terminals offer a large database to store product records and various interface options assure easy integration into existing data management systems. All for an efficient process control with accurate and secure traceability.

► www.mt.com/over-under-checkweighers

A bright, color TFT graphic screen provides excellent readability – double sealed

Fast facts

- 8 terminals for Basic Weighing, Over/Under Checkweighing, Classification
- Capacity x Readability: 3 kg x 0.5 g up to 600 kg x 100 g
- 8 platform sizes: 229 x 229 up to 600 x 800 mm
- Ingress protection: IP 65 up to 69k

Accelerated Over/Under Checkweighing



Key customer benefits

- Rugged, hygienic construction for long life in tough industrial environment
- Ergonomic design for ease of operation
- Less exhaustion with color display technology
- Alibi memory and calibration logs for auditable quality records



colorWeight®

colorWeight® provides clarity – full color graphic for unmistakable results

The sharp and clear display provides easily readable unmistakable information as to whether or not the weight is within the tolerance limit.

The open and rugged construction is built for efficient cleaning. All parts are developed following the latest hygienic guidelines. The ICS6x9 product range is certified according to EHEDG and NSF.

IP69k
EHEDG
NSF

New Technology Prevents Product Recalls and Improves Line Efficiency

Inspecting dairy packaging on high-speed production lines can be challenging. When a leading manufacturer of premium ice creams needed to verify that the correct lid was placed onto the corresponding tub, they turned to CI-Vision.

Innovative inspection technology

Vision inspection systems from METTLER TOLEDO provide an innovative technological solution to product inspection. They are capable of inspecting a wide range of products and can accurately and reliably detect and reject improperly packaged products,

amongst other things. Vision systems are able to provide 100% inspection technology to adapt to the random presentation of products on the line, ensuring that it is versatile to any production line situation. This kind of inspection can really safeguard a product and company reputation.

An alternative to manual inspection was required

A leading producer of premium ice creams was faced with the challenge of verifying that the correct lids were being placed onto the corresponding tubs of ice cream. Due to the wide variety of flavors, variations of carton placement on the line and line speed, the manufacturer realized the need for an alternative to manual inspection. CI-Vision was able to meet the producer's requirements by providing 100% product inspection which in turn helped prevent recalls and improves line efficiency.

As part of the packaging process, the printed ice cream tubs and lids are dropped onto the line right before and after the filler. The tubs are placed length wise along the line, but due to the random direction that an operator can place both the tubs and the lids into the machine, there is not a consistent "left/right" orientation. The inspection system's software vision tools are able to successfully locate the 2D data matrix code on the tubs regardless of their orientation on the line. The system then locates the matrix code on the lid and matches it with the code on the tub. After the tubs and their lids are inspected, the inkjet date and lot codes on the bottom of the container are verified by the vision system for accuracy and readability. If the lid and tub on a container match and the date and lot codes are correct, the product is considered to be "Good" and moves on to the freezer. If anything "fails" to pass inspection, the product is rejected from the line.



Quality control raised

To add another layer of protection against mislabeling, the ice cream producer implemented a double blind data entry program, a process prior to inspection which requires two operators to enter the product code into the system separately. If the product code entered into the system doesn't match the product codes on the tubs and lids, the line is shut down and an alarm sounds until the issue is rectified. This level of quality control, combined with the reliability of the vision solution's vision tools has resulted in the establishment of product safeguards for both the manufacturer and the consumer.

Today, the ice cream producer has recognized that their vision system is not only more efficient than manual inspection, but it has also allowed them to close the quality loop by ensuring the packaging and its respective coding matches the ice cream in the container.

The impact of defective product reaching the consumer can lead to costly product recalls, damage to your brand, and heavy fines. A well structured and properly implemented vision inspection program can help alleviate the risk of incurring these costs.

For further information:

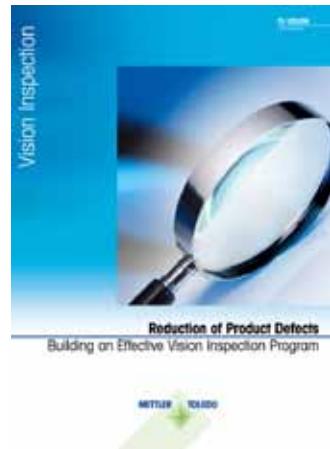
► www.mt.com/ci-vision



CI-Vision Guide helps you make an informed decision

Defective products reaching the consumer can have a massive cost impact on your business. Reduce these costs with the implementation of a Vision Inspection programme.

CI-Vision's "Building an effective vision inspection program" guide will help you to negotiate the large number of technology options and methods of implementing a vision inspection program available today.



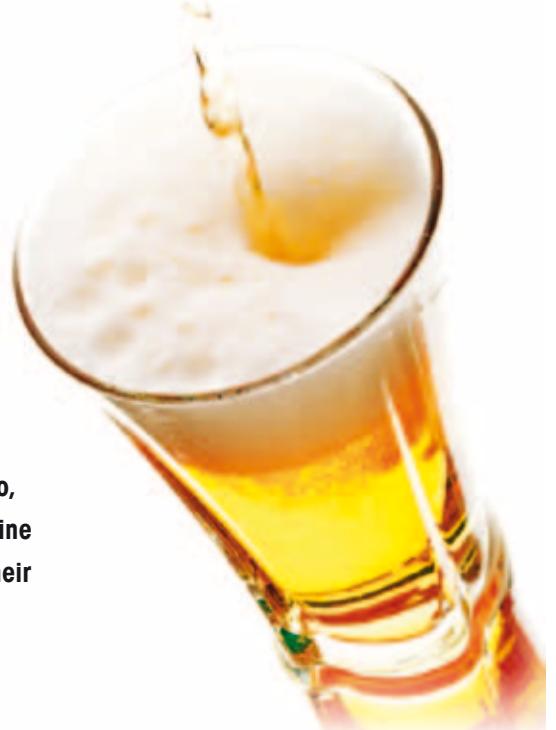
Request your complimentary copy from



► www.mt.com/pi-guides

For the Best Beer You Need High Quality CO₂

High residual oxygen in CO₂ is bad for beer taste and shelf life. So, for France's oldest brewery, keeping O₂ to a minimum is vital. In-line gaseous and dissolved O₂ systems from METTLER TOLEDO meet their exacting standards.



The meteor brewery

Records show that the history of brewing in Hochfelden in the Alsace region of France goes all the way back to 870. In 1640, the brewery known today as Meteor was established, making it the oldest brewery in France still in activity. Meteor has resisted acquisition by the big groups and it remains a family-owned independent that bases its development on creativity and maintaining high quality. In 1956, production exceeded 100,000 hectoliters and today more than 500,000 hectoliters are produced annually.

Importance of CO₂

When producing beer CO₂ is used in a number of processes. It is injected into the beer (post carbonation) because the quantity of CO₂ naturally occurring in the beer varies depending on the recipe. Therefore it is important to measure the dissolved CO₂ content at the filtration exit. CO₂ is also used for pressurizing the finished beer tanks. In these procedures the CO₂ is in direct contact with the beer (gaseous CO₂ in the tanks and dissolved in the beer) and therefore the CO₂ quality is critical.

systems sought by the brewery were a reduced maintenance requirement and the possibility of having high quality after-sales service. In addition, the instruments would have to conform with food regulation requirements as well as to Meteor's high standards.

Proposed solution

Meteor asked METTLER TOLEDO if we could supply systems that would meet all their needs. We confidently proposed the following:

In-line gaseous and dissolved O₂ measurement

Monitoring the CO₂ quality is done by measuring the residual oxygen content of the CO₂. The gaseous O₂ level is measured in the CO₂ before it is distributed to the different utilization points (tanks and post carbonation) and the dissolved O₂ in the beer at the filtration exit before the product is sent to the filling stations. If the gaseous or dissolved O₂ content is too high it causes oxidation of the beer which can adversely affect flavor and shorten shelf life.

System essentials

Because the O₂ measurement system in place at Meteor was obsolete and the requirements of the brewery had become stricter, the production engineers decided to replace it. The main features of the new



O₂ sensor InPro 6950

Dissolved O₂ measurement:

- InPro 6950 sensor
- M700 transmitter with trace O₂ module

Gaseous O₂ measurement:

- InPro 6950 sensor with gas membrane
- M700 transmitter with trace O₂ module

Strengths of the equipment

InPro 6950:

- Measurement of oxygen at very low concentrations:
The guard electrode protects the oxygen measurement system against interference. This results in an ultra-precise determination even if the oxygen is present in trace amounts.
- Innovative 4-electrode technology:
This integrated technology offers advanced signal stability and contributes in reducing maintenance needs by preventing the formation of silver chloride in the electrolyte.
- Maintenance in seconds: The easy to replace membranes and the Quick Disconnect sensing element limit maintenance, saving time and providing maximum availability.

M700:

- Modular design:
Flexible use of plug-in modules allows combined measurement of O₂, pH or conductivity.
- Adapted to the Food and Beverage industry:
M700 S transmitter in stainless steel for hygienic production.
- Simple operation:
Adjustments and configuration are easy thanks to intuitive menu navigation. Three-tier password protection for calibration, mainte-

nance and configuration ensures a very high level of security.

- Reduced costs:
Modular design allows the use of two measurement parameters in the one transmitter.

Easy to use and low on maintenance

The installed systems meet all the maintenance and conformity requirements requested by the Meteor brewery. The ease of use and low maintenance of the dissolved and gaseous oxygen measurement systems and our world class after-sales support have won over the brewery's process engineers, and other METTLER TOLEDO measurement systems have since been installed elsewhere in the brewery.

If you want to keep O₂ at a minimum in your brewery, go to:

- ▶ www.mt.com/o2-gas
- ▶ www.mt.com/o2

Best Practice

In-line measurement means optimized production and lower operating costs

The continuous stream of data that in-line measurement provides lets you know that your processes are working as they should and informs you the instant that they are not, helping you to maximize production and reduce operating costs.

Discover more at:



▶ www.mt.com/pro



Ensuring High Quality Standards for Natural Drinking Water

Feldschlösschen Getränke AG uses METTLER TOLEDO's analytical balances for the quality control of their Rhäzünser brand drinks in order to monitor both correct bottle filling during production and product mineral content.



A natural source

Feldschlösschen Getränke AG manufactures Rhäzünser soft drinks at its plant in Rhäzüns, Switzerland, producing natural and flavored mineral waters from three mountain water sources. The company's METTLER TOLEDO analytical balances are integral to its quality control strategy as

Mr. Niels Jacobi, head of quality control in Rhäzüns, explains, "We use water from three different mountain sources, and there is a natural variation in the mineral content between the sources, depending on local geological conditions. We use a METTLER TOLEDO XS204 Analytical Balance to prepare test samples for ion chromatography, ensuring that the quality and flavor of our products is consistently high."

Guaranteeing consistency

Feldschlösschen Getränke AG also uses METTLER TOLEDO weighing solutions at

several stages on the production line with both machine operators and quality control technicians systematically weighing bottles at random intervals to guarantee the correct fill volume. Mr. Jacobi adds, "These systems help us to comply with ISO 9001 and International Food Standards and are extremely easy to use providing a rapid assessment of individual bottles without limiting production. We chose METTLER TOLEDO as our balance supplier as its systems are highly reliable and only require a simple annual service in order to maintain our high quality standards."

► www.mt.com/one-click-melting





Live and Easy Control Of Caffeine Purity

When isolated in its natural form, caffeine is a white crystalline powder with a very bitter taste. The bitter taste is part of the complex flavor and overall profile of many soft and energy drinks. The selection of suitable raw materials is paramount for the production of a high quality end-product, as well as maintaining high consumer satisfaction.

Easy melting point determination

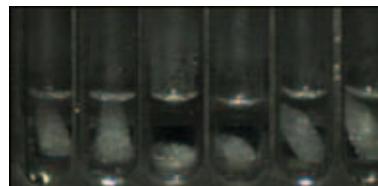
The new METTLER TOLEDO Melting Point Systems are ideally suited for the quality control of caffeine. One Click™ melting point detection and color video recording of the melting point process (of up to six samples simultaneously with the built-in digital imaging system) enable the user to easily identify and check the purity of caffeine very quickly. The MP Systems also allows the user to visually review the melting process on the display of the instrument or computer screen at anytime.

The melting point is a characteristic property of a substance. It is the temperature at which the crystalline phase of a substance changes to a liquid state. The image sequence shows the melting point process of caffeine using the METTLER TOLEDO MP90 system. Six samples of caffeine were prepared and then heated from 235.8 °C to 237.8 °C at a heating rate of 1 K/min to determine the temperature at which the melting point occurs.

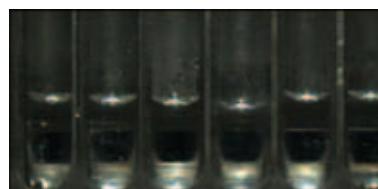
Three of the six samples melted at 235.9 °C, while the remaining three samples melted at 236.0 °C. This indicates that all six samples were within the acceptable melting point range for caffeine.



Unmolten caffeine immediately after start of measurement.



While it is melting (meniscus point).



Molten caffeine at the end of melting.

The new fully automatic Melting Point Systems are ideally suited to the fields of research and development and quality control. They provide fast, accurate, reliable and reproducible results and have the advantage of storing and replaying the measurement as a high resolution digital video which can be used for review at a later date. This guarantees that both melting points and melting ranges are reliable.

► www.mt.com/one-click-melting

Determine the melting point easily, efficiently and video-recorded

Visit the website and see how easy and efficient it is to work with the new Excellence Melting Point Systems. There are a variety of applications, datasheets and brochures available for download.

Watch a video demonstrating how to operate the instruments. The video is available in 6 languages: English, German, French, Spanish, Chinese and Japanese.



► www.mt.com/one-click-melting



MP90
Melting Point System.

Order of the Day: Quality and Innovation

Optimized Use of Expensive Raw Materials

Even small amounts of expensive materials like vanillin can have a significant impact on raw material costs. French producer of "patisserie" products Le Ster decided to invest in an improved formulation system to get maximal material yield.

Le Ster is a key player in the industrial "patisserie" market in France. Specialized in products made from yellow dough, such as madeleine cakes and quatre quarts (pound cakes), the Group represents an overall annual turnover of 120 million euro employing 420 people. The company's products have a strong presence in the area of catering, particularly in service stations, as well as in the traditional major retail sector. This high-performance logistics system allows Le Ster to deliver their products already one day after order entry.

Better transparency for improved traceability

Quality and innovation, two important values that equally guide the management team on a daily basis. A perfect illustration of this is their recent procurement of the production recipe management software FormWeigh.Net. Jean-Pierre Jehan, director of the Le Ster site, explains, "I was looking for a reliable system, which would provide us with better transparency in terms of our raw materials consumption, ensuring optimum traceability and capable of adapting to the IT system we currently have in place.



Weighing stations with FormWeigh.Net and ID30 industrial PC terminal.



Optimized handling of expensive raw material

Le Ster has three weighing stations installed with FormWeigh.Net formulation software. Each station includes an ID30 industrial PC terminal with the corresponding weighing platform and all three are connected to a master station. FormWeigh.Net can be configured customer specific and supports further integration of new functions. Le Ster for example developed a specific "batch browsing" capability to the standard software package. "Since its introduction, the FormWeigh.Net system has helped considerably to optimize our consumption of certain expensive raw materials, such as vanilla essence", states Isabelle Touillier, the site's quality manager. "The quality audit process performed by ourselves or by our clients has also seen much improvement. We are following the recipes with more accuracy and can now ensure computerized traceability. The fast

training of all operators and the user-friendliness of the software has also been an important factor in making our choice".

Further improvement changes to come

Satisfied with its recipe management system, Le Ster is now in the process of evaluating to connect FormWeigh.Net to the ERP software system or even replace existing volumetric filling methods for handling large quantities such as flour or oils with more accurate weighing processes. Quality and innovation will always be the order of the day...

For further information:

- ▶ www.mt.com/formweighnet
- ▶ www.lesterlepatissier.com



Key customer benefits of FreeWeigh.Net®

- Right mixture reliably documented
- Graphical support to avoid incorrect mixtures
- Prevention of material wastage
- Acquisition and verification of batch information
- Clear, concise representation of the weighing process
- Maximum process reliability
- Supports traceability
- Seamless ERP integration
- Fast ROI (<12 months)

Jean-Pierre Jehan, director of "Le Ster".



Interpack Trade Fair

The world's most important trade fair for packaging and processes in Dusseldorf, Germany

Come and see METTLELR TOLEDO in hall 11 on stand number B55 where we will be exhibiting a wide range of our weighing, checkweighing and process and qality control solutions.

This includes weighing technology: bench portables and floor scales, dynamic check-weighers and static scales, sophisticated metal contaminant detectors, cutting-edge x-ray based inspection technology and Vision Inspection Solutions, the newest addition to the product inspection portfolio, for maintaining product and brand integrity.

For further details on METTLELR TOLEDO product inspection solutions, please come visit us on

► www.interpack.com



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Webinar: Food Regulations

Learn how to comply with food regulations and improve your productivity.

www.mt.com/ind-food-ondemand



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