

# Food and Beverages



**Solutions to improve**  
food safety, product quality and productivity

**METTLER TOLEDO**

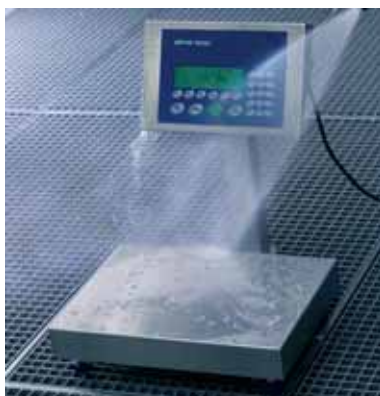
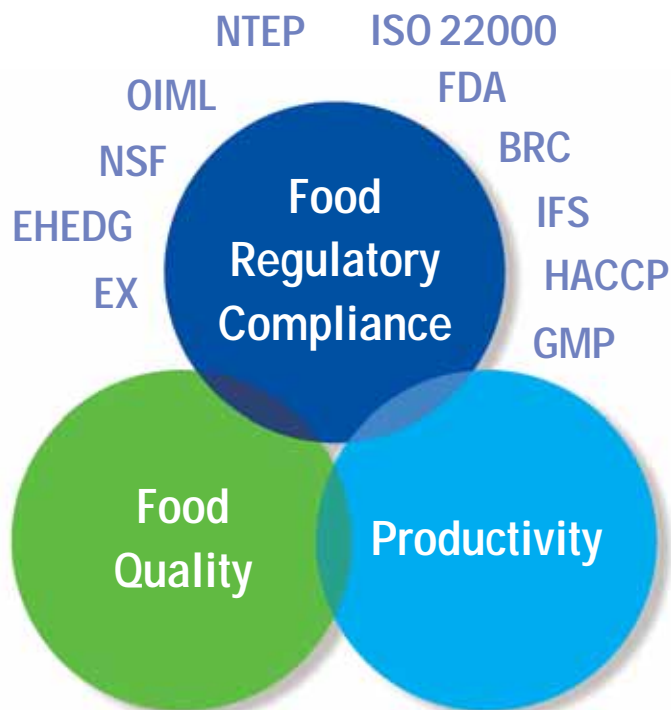
# Meet your business goals with cutting-edge weighing technology

Are your customers demanding greater product variety than ever before? Are you faced with cost pressure, production uptime issues and new regulations? METTLER TOLEDO has the right solutions and services to help you meet cost, quality, flexibility and regulatory challenges – from raw material to final shipment.

**Food regulatory compliance** is a top priority for food manufacturers. Food regulations require that:

- All raw materials used are constantly monitored
- Traceability along the production process is ensured
- National and international net content legislation must be fulfilled
- Status and accurate operation of production and measuring equipment has to be assured and documented
- Diligent testing is necessary to prove that no physical, chemical or biological foreign bodies have contaminated the product

METTLER TOLEDO solutions, compliant with the latest hygienic design guidelines, help to produce safe food and meet the regulations.



## Food quality

Consistent taste, freshness and appearance of food products are essential to guarantee customer satisfaction. Food manufacturers need to ensure consistent quality, regardless of where the product is manufactured or distributed. Monitoring and analysing all relevant quality parameters are essential to immediately react in case of a

deviation. Accurate and repetitive recipe/formulation of flavours and additives helps to avoid bad batches.

Qualified weighing with METTLER TOLEDO – from a microgram up to hundreds of tonnes – supports improved, documented quality manufacturing, to keep your customers satisfied and to protect the value of your brand.



**Productivity**

Larger product variety, competitive market conditions and cost pressure from large retailers, increases the need for manufacturing efficiency.

Consistent availability of your production equipment and planned maintenance periods are important prerequisites to keep profitability high.

Fast and precise batching and filling procedures help increase throughput and avoid bad batches and rework. Total control of your

inbound and outbound material is necessary to manage costs efficiently.

Ergonomically designed portioning scales with fast readout are essential to speed up manual production processes.

METTLER TOLEDO top quality weighing sensors and process indicators with seamless connectivity to your PLC, DCS or SCADA systems help to increase your productivity and profitability.

METTLER TOLEDO solutions	Material Receiving	Production (manual)	Production (automated)	Inventory Control	Packaging	Shipping Distribution
Vehicle weighing	•					•
Formulation, recipe weighing		•	•			
Portioning, over/under checkweighing		•				
SQC/SPC/average weight compliance	•	•	•		•	
Process weighing, filling, batching		•	•	•		
Tank/silo weighing				•		
Weigh price labelling					•	
Checkweighing, metal detection, X-ray	•	•	•		•	
Order picking, completion						•
Tracking & tracing	•	•	•	•	•	•

## Material Receiving



### Vehicle weighing

Optimise plant efficiency with transparent inbound and outbound material control. Third-generation MTX digital load cells and a unique orthotropic weighbridge design make our vehicle weighing solutions the most rugged and reliable in the industry.

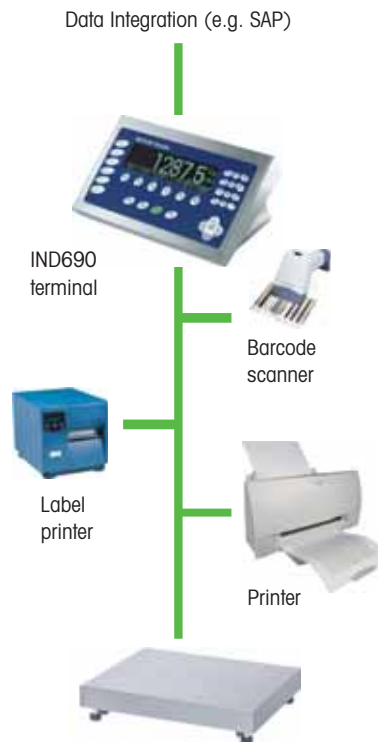


Overdrive™ vehicle scale software



### Raw material identification

Efficient tracking and tracing, and process visibility, are important prerequisites which have to be maintained for food safety. Scales are important identification points to collect traceability data such as product IDs, weight values, and for clear labelling of semi-finished and finished products.



### Quality control, R&D

For full control of quality parameters such as pH value, melting point, viscosity, moisture content, grain size distribution, or brix, our analytic instruments and lab balances provide the right solutions.



Maximise returns with:

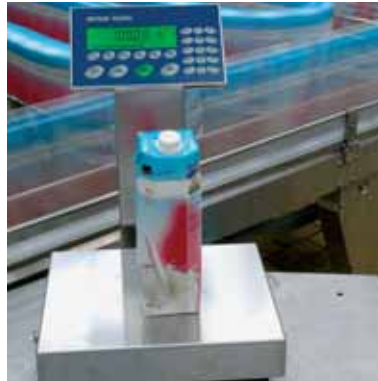
- Proper equipment application
- Traceable accuracy
- Optimised efficiency and uptime
- Maximum equipment life
- Regulatory compliance

**Production  
(manual)**



**Formulation/recipe weighing**

Accurate, reproducible mixtures and consistent taste are essential for product quality. Our standalone or fully networked formulation/recipe solutions guide the operator securely and quickly through daily formulation work. Our recipe systems also assure traceability and are easy to integrate into MES/ERP systems.



**Portioning, over/under weighing**

Speed up your manual production processes with hygienically and ergonomically designed bench/floor scales and terminals with fast display readouts. These products carry the IP69k rating to withstand harsh washdown procedures. The construction and special accessibility features make our products easy to clean.



**Production quality parameters**

Monitoring, analysing and documenting product quality parameters and minimising overfilling are achieved with our Statistical Quality and Process Control (SQC/SPC) systems. From compact to networked systems with multiple sites and centralised databases, our solutions provide statistical data to help you understand, document and control profitability and quality.

FormWeigh.Net®  
master station



ID30 operator  
recipe terminal

**IP69k**



**EHEDG**



FreeWeigh.Net®

**Production  
(automated)**



**Process weighing**  
 Consistent availability of your production equipment, best-in-class measurement technology and immediate control of all process steps are key success factors in achieving manufacturing profitability. Our solutions include weigh modules, fast transmitters and process terminals with seamless connectivity to your PLC, DCS, MES or ERP systems. Measurement speed, reliability and accuracy are provided for your mission-critical applications. Predictive maintenance technologies enable planned maintenance and high uptime.



**Filling**  
 When filling intermediate bulk containers, totes, bags, drums, sacks or vehicles, you need very fast, precise and repeatable results. Our high-performance weighing terminals with rugged weighing platforms, weigh modules and high precision measuring cells provide unmatched filling speed and accuracy.



**Inventory  
Control**



**Tank/silo weighing**  
 Do you exactly know how much raw material is available to complete this week's production orders? Transparency in inventory control requires high quality tank, silo and hopper weighing. Our weigh modules, transmitters and process terminals support safe and accurate material management in 30kg tanks up to 90 tonne silos.



- Project management
- Equipment qualification
- Installation and configuration
- Computer systems validation
- Calibration and certification
- Tailored service programs

## Packaging



### Package quality control

Reducing overfilling to save money and increase profitability is essential during filling and packaging. Also, net content control has to be performed to comply with average weight legislation. With our Statistical Quality Control (SQC) systems net content control is simplified. Key quality parameters such as expiration date, batch/lot ID or net content are monitored, analysed and documented in an efficient and easy-to-customise way. With in-line checkweighing, achieve 100% control at a throughput of up to 600 weighings per minute, with high accuracy and without product flow interruption.



FreeWeigh.Net®



Foto: Hurler, Buchs/AG

### Foreign body detection

We help to assure product safety and protect your brand's value. Contamination issues are solved by our metal detection and X-ray inspection systems to identify foreign bodies. Solutions from METTLER TOLEDO support product safety in hygienically sensitive areas and help to establish efficient production processes.



X-ray inspection system



### Weigh/price labelling

For labelling your various product's individual weights, high speed weighing, smart printing and fast product changes are essential. We offer economic static and semi-automated solutions for manual labelling of your smaller volume products and high speed machines with up to four labellers for high volume top sellers up to 150/min. Our solutions are equipped with WYSIWYG label design software tools and easy to integrate into your goods management systems.



## Shipping Distribution



**Order picking and processing**  
 Manually processing 10 000 order lines per day requires ergonomic man machine interfaces. Our order picking solutions have large touch-screen displays, wireless barcode scanners and label printers to assure error free shipment and satisfied customers.



**Case weighing**  
 Before shipping, completeness control is vital to ensure that there are no missing items. Our smart case weighing solutions offer final monitoring prior to despatch.



**Shipment completion**  
 To complete shipping, the right distribution documents and pallet labels have to be provided to assure traceability. Our weighing and traceability solutions are designed for fast and precise shipment completion, and the support of efficient distribution processes.



# Food regulatory compliance

## How to profit from food legislation

At first sight food and beverages legislations and standards seem to involve huge costs, but a closer look reveals that it opens up enormous benefits.

Consumer awareness of food safety is growing continuously. This demands the use of safe and hygienic production equipment to maintain brand advantage. We provide you with the right portfolio of solutions, so that today's investments achieve a return tomorrow.

### Hygienic requirements

Minimising biological and chemical contamination risks through easy cleaning of equipment are important topics in the manufacturing environment. Our solutions fulfill the latest hygienic design guidelines (e.g. V2A stainless steel, easy-to-clean construction) and are proven to be resistant to heavy cleaning procedures. Need to be certified after BRC, IFS or ISO 22000? Our products help you comply.

► [www.mt.com/ind-hygienic-design](http://www.mt.com/ind-hygienic-design)

### Net content control

Not only is your brand's reputation in danger if you are underfilling, but also, you are breaking the law of national net content legislation. Extend your competitive advantage with our cutting-edge net content control systems, which not only help avoid underfilling but protect you from losing money by unnecessary overfilling.

IP69k: Protection against high pressure water jets from all directions

EHEDG: European Hygienic Engineering and Design Group

NSF: National Sanitation Foundation



### Traceability

Consumers are increasingly concerned about safe food. For example, if contaminated raw materials are received, identification of all sourced components is fundamental to ensure fast product recall, limiting damage to your reputation. Let us help establish reliable traceability data with scales as identification points for data collection and for clear labelling of all goods.

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

**ServiceXXL**<sup>®</sup>  
Tailored Services

### Calibration and maintenance

Equipment critical to product safety, legality and quality must be periodically maintained and verified. This confirms results and regulatory compliance through certified accuracy, while dramatically increasing equipment uptime. You will get industry standard calibration services, preventative maintenance, conformity to GMP and net weight legislation, and priority service response – peace-of-mind – with our service programs.

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



# Food quality

## Key parameters under control?

Consistently improving the quality of your products requires the ability to efficiently control recipes as well as product and package quality parameters, all in a fast-changing and highly competitive environment.

Competition in the food industry with high volumes but tight margins causes demands for efficient quality assurance systems. Recipe weighing and Statistical Quality Control (SQC) systems for permanent online information and documentation about your key quality parameters convert into real cost savings.

Simple and informative online status of the formulation or filling process as well as package and product quality parameters allow immediate corrections of the manufacturing process, saving money by reducing bad batches and unnecessary overfilling.

No matter where you are in the company, our comprehensive formulation and SQC solutions analyse and present your important product and package quality parameters the way

you want, helping to ensure accurate and reproducible quality of your products and to improve profitability.

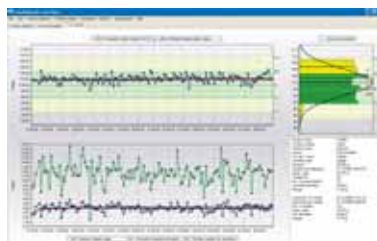
- ▶ [www.mt.com/sqc](http://www.mt.com/sqc)
- ▶ [www.mt.com/formulation](http://www.mt.com/formulation)

### Improve filling accuracy and maximise profit

Parameters	Value	Unit
Raw material costs	1,-	EUR/kg
Packages produced	100'000	Units per day
Nominal fill quantity	100	g
Production days	250	Days per year
<b>Production mean value</b>	<b>101</b>	<b>g</b>
Overfill per package	1	g
Overfill per day	100	kg
Overfill per year	25'000	kg
<b>Overfill losses</b>	<b>25'000,-</b>	<b>EUR/year</b>



- Package quality parameters**
- Sealing ok?
  - Label ok?
  - Undamaged?
  - Net content ok?
  - Expiry date ok?
  - Batch/lot ID ok?



- Product quality parameters**
- Sensory test
  - Visual appearance (colour...)
  - Single piece weight
  - Viscosity
  - Texture i.e. particle size
  - Moisture
  - pH-value
  - Metal free?



Typical screens of FreeWeigh.Net® Quality Control Software

# Productivity

## Optimise processes, maximise uptime

Do you want faster operation in automated and manual production processes? And how about predictive maintenance and seamless connectivity of weighing equipment? We provide smart solutions, increasing production uptime for fast and accurate filling and batching processes all while ensuring total data transparency.

### Improved manual production process

Efficient and fast manual manufacturing has huge cost impact. To speed up production we offer bench/floor scales and terminals with fast display readout, graphical filling control and ergonomic design.

colorWeight®



Yellow – weight above tolerance



Green - weight within tolerance



Red – weight below tolerance

### Fast and accurate material transfer



Q.i. Predictive Adaptive Control algorithms build a real-time mathematical model of your material transfer process. This innovative Material Feed Measurement and Cut-Off Control system of METTLER TOLEDO comprises of hardware, advanced process control technology, internet enabled software and collaborative services.

- Increases material transfer speed and precision
- Reduction of overfilling costs and batching time
- Reduces engineering costs

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

### Up to 100% production uptime

With TraxEMT™ predictive maintenance technology.

- Monitors individual load cells, predicts failures and alerts via email
- Built-in diagnostics monitors and logs zero and span, alarms, errors, scale impacts and overloads
- The optional smart RAAD Box™ additionally increases the availability of your system by virtually replacing a failed load cell, allowing you to complete your actual task

### Full connectivity and data transparency

Immediate control of all sensors and process steps is vital for a well-organized production environment. We provide seamless connectivity through a wide range of interfacing standards including EtherNet/IP, Profibus® DP, TCP/IP, ControlNET, Modbus Plus®, DeviceNet, Allen-Bradley® RIO, 4-20mA/0-10V, RS422/485 and discrete Digital I/O.



PLC



Weight transmitter



Weigh module

ControlNet

DeviceNet

ROSEMOUNT AUTOMATION  
ENCOMPASS  
DIGITAL PARTNER

PROFIBUS

# A worldwide network of experts at your service

Thousands of food and beverage manufacturers rely on qualified and equipped METTLER TOLEDO professionals to provide timely local and personal service. We make sure your measurement processes deliver required results.

We combine our knowledge of food industry regulations and applications with the broadest range of equipment and experienced professionals to provide high-value products and tailored service solutions that meet your needs. We base your satisfaction on three pillars:

**Consulting:** We support you in determining the best solution for cost-efficiently maintaining production, quality and regulatory requirements. We can provide application analysis, equipment selection, project planning and management, training and maintenance program consultation.

**Solutions:** We are the one source for all of the products, software, engineering and systems needed to meet your specific requirements of hygienic design, ruggedness, traceability, data integration, automation and process precision.

**Services:** Whether you need to meet ISO 9001, BRC, IFS, ISO 22000 or other industry requirements, METTLER TOLEDO delivers. From calibration and minimum weight determination to equipment qualification, computer systems validation and preventative maintenance, ServiceXXL tailored services ensure uptime and compliance.

**ServiceXXL**<sup>®</sup>  
Tailored Services



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