

Pharmaceutical Preparations

Industrial weighing and measuring



1 News

Good Manufacturing Practice from dispensing to packaging

Your products help people stay healthier and improve well-being. To ensure the consistent quality of products, you build quality directly into your processes and into your way of thinking and working.

We are your expert partner, ensuring Good Manufacturing Practice in every step of your process.

Dispensing – where exact amounts count

Our dispensing solutions ensure the right weight and transfer this precise measurement to your ERP system.

Granulation, mixing – bringing the ingredients together

Our formulation solutions help you handle the recipe, ensure unique ingredient identification and provide full batch documentation.

Tableting, encapsulation – product quality is key

Unmatched electronic in-process control solutions and sophisticated metal detectors guarantee optimal product quality.

Packaging – final inspection guarantees maximum safety

In-line checkweighers, metal detectors and X-ray systems allow checking content and quality without slowing down your production line.



Courtesy Novartis

METTLER TOLEDO

Accuracy makes your API active

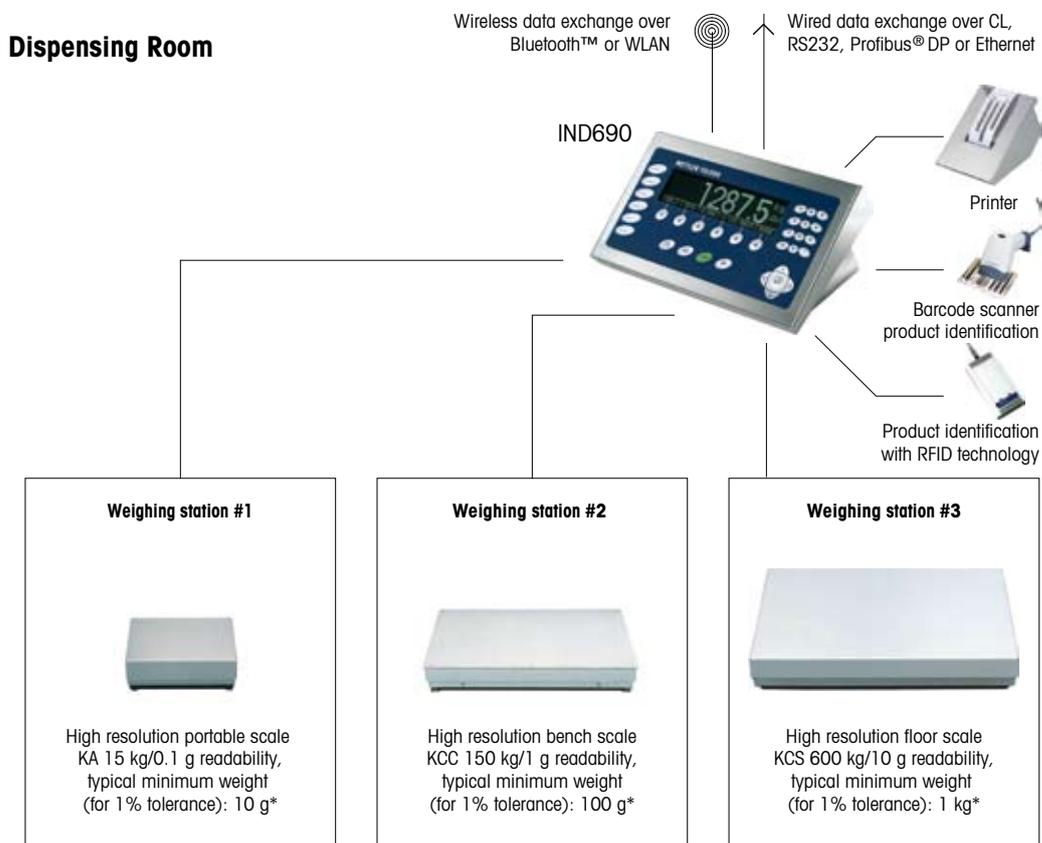
Weighing the exact amounts of your materials is crucial to the effectiveness of your pharmaceutical preparations.

Our core competence is to specify, deliver, install and qualify the weighing solution you need, according to your requirements and weighing equipment classification.

Through initial qualification we establish the scale's performance, such as the critical minimum weight, in the actual environment and under dispensing conditions.

Our best-in-class service technicians help you maintain the qualified weighing state by performing regular calibrations and maintenance services.

With our dispensing solutions your API is active – not more, and not less.



* must be determined at the location of the scale

Publisher

Mettler-Toledo GmbH
Industrial
Sonnenbergstrasse 72
CH-8603 Schwerzenbach
Switzerland

Production

MarCom Industrial
CH-8603 Schwerzenbach
Switzerland

MTSI 44099666

Subject to technical changes
© Mettler-Toledo GmbH
Printed in Switzerland.

Key benefits

- Highest accuracy line available in the market
- Indicators and weighing platforms are specifically engineered to minimize cross-contamination and make cleaning validation easy
- Easy to read from all angles even while wearing protection suits through Big Weight® display technology
- Straight forward integration of weight data and associated batch information into your ERP, MES or decentralized quality system
- cGMP best-practice service solutions, documentation and operators training: all from one source

Fast Facts

High-precision floor scale KCS600

- Stainless steel
- Electromagnetic Force Restoration technology
- Weighing capacity 600 kg
- Approved accuracy up to 32 000e
- Specific design for easy cleaning

IND690 weighing indicator

- Stainless steel housing IP69k
- Big Weight® display
- Supports up to 4 scales
- Broad data interface range such as RS232, Ethernet, Profibus® DP or wireless
- MinWeigh® warning function
- Made for easy cleaning – no dead spots!



MinWeigh® ensures all weighing is within your process acceptance criteria

Working under your GMP quality system requires you to know the accuracy of measurements as well as their uncertainties. Since weighing is quality relevant in the dispensing room, you define acceptance criteria for each process. But how do you make sure that your measurements do always match these acceptance criteria?

The relative measurement uncertainty increases with decreasing weight values. As a consequence, a minimum weight limit exists for every weighing system, below which its measurement uncertainty becomes larger than the acceptance criteria of the weighing process.

The quality principle of MinWeigh® by METTLER TOLEDO includes:

- Determination of measurement uncertainty of the scale within your real process environment conditions

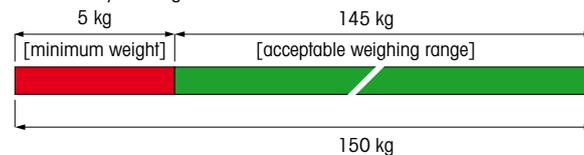
- Calculation and documentation of the minimum weight in relation to acceptance criteria
- MinWeigh® warns when weight is below the minimum weight
- The allowed minimum weight value can be recomputed easily as acceptance criteria may change from process to process



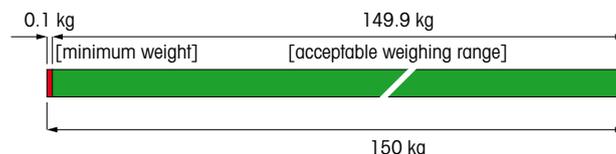
MinWeigh® indication with icon on the new IND690 weighing indicator

Typical minimum weight of an analog versus a high precision floor scale (example for 1% weighing tolerance)

Analog floor scale
 – 150 kg weighing range
 – Readability 0.05 kg



High precision digital floor scale
 – 150 kg weighing range
 – Readability 0.001 kg



Can your process keep up with the speed of your business?

Human Genome Sciences based in Rockville, Maryland, USA, is a leader in the development and manufacturing of novel proteins and new, long acting versions of existing drugs. Enhancing high quality standard production and duplicating the production capability throughout their manufacturing facilities is a real challenge at Human Genome Sciences: "A worldwide shortage of protein drug manufacturing facilities and expertise exists."

To prepare for business growth and FDA compliance, Human Genome Sciences needed better access to mission-critical data by moving away from paper based and manual processes. FormWeigh and SAP worked together successfully with Human Genome Sciences to provide an integrated solution. A SAP system was implemented and three weigh rooms were equipped with METTLER TOLEDO weighing equipment and the FormWeigh soft-

ware solution for the formulation of a large number of therapeutic proteins and novel antibodies per year.

Reaching these objectives requires strong vision, supported by reliable technology, accurate processes and continuous uptime. METTLER TOLEDO works as a partner with Human Genome Sciences, helping them meet those challenges.

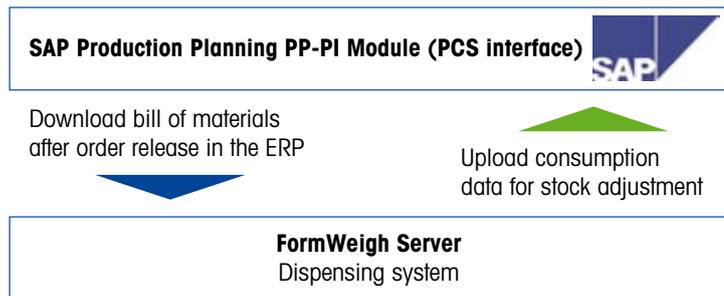
Key benefits: How FormWeigh supports Human Genome Sciences

- 1. Accurate and fail-proof processes**
 - Guide operators with the help of user-friendly weigh screens throughout the batch production
 - Handle materials, recipes, and evaluate raw material batch information in production orders
 - Automatically calculate the weighing target based on the raw material potency
- 2. Compliance with cGMP/GAMP**
 - Document automatically all batch relevant information
 - Provide a unique labeling system for raw material identification and traceability
- 3. 21 CFR part 11 implementation**
 - Electronic batch records
 - Electronic signature
 - Audit trail
- 4. Streamline data transaction processes**
 - The SAP integrated solution provides real time data for material management purposes
- 5. Service, validation and support by METTLER TOLEDO**
 - Full set-up, interconnection, calibration and configuration of all hardware components with thorough qualification
 - Professional best-practice performance of computer system validation
 - On-site training for operators and supervisors





At Human Genome Sciences three weigh rooms are equipped with FormWeigh solution systems: two are for buffer and one for media dispensing. Each FormWeigh system is connected to three scales for a weighing range from 1 mg up to 300 kg.



► www.mt.com/formweighnet

FormWeigh

Fully qualified hardware and validated software:
single-source solution

Warehouse and recipes management



Process specifications measure and control; raw materials identification



Raw materials weighing



**Accuracy
Reliability
Compliance**

Hardware at a glance

1. ID30 industrial terminal
 - Flat panel color display, user friendly touch-screen
 - Stainless steel, dust- and water-proof
 - Connect up to three scales
2. Label printer 8867
3. Barcode scanner
4. XP1203S precision balances
 - Highspeed balance with overload protection
 - Compact draftshield with sliding doors
 - Readability of 1 mg
5. KA15 precision bench scale
 - Stainless steel construction
 - Readability of 0.1 g
 - Typical minimum weight (for 1% tolerance): 10 g
6. KCC300 precision floor scale
 - Stainless steel platform
 - Readability of 2 g
 - Typical minimum weight (for 1% tolerance): 200 g

Customer testimonial

"Future initiatives like Large Scale Manufacturing, FDA regulatory requirements, product pipeline, and ultimately product launch require a sound business system to support them."

"METTLER TOLDEO has provided a tremendous amount of help in completing the validation of the SAP integrated dispensing system. They provided assistance to comply with Part 11 and performed risk assessment, IQ, OQ, PQ and traceability matrix."



Paperless, Integrated, Validated GMP's Best Practice In-Process Control and Quality Assurance with FreeWeigh.Net

Can you improve both line operator efficiency and quality monitoring & reporting?

How do you collect and document all your relevant in-process control data efficiently?

Is moving from a paper-based to an electronic system troublesome? And how do you guarantee conformity to GAMP guidelines and 21 CFR Part 11?

A METTLER TOLEDO customer, a top 20 pharma company, operates a tablet manufacturing facility, featuring six tableting rooms and one

coating room around one central in-process control (IPC) room. The final products are transferred to three parallel packaging lines.





1. Automated weight control during tableting

In each of the six tableting rooms a METTLER TOLEDO XP balance with automatic tablet feeder samples 10 tablets every 15 minutes and transfers the weight values directly to a FreeWeigh.Net station located in the IPC room. The FreeWeigh.Net system controls all user interactions by electronic SOPs displayed directly on the balance display. Results of analysis are immediately available and deviations can be handled properly. FreeWeigh.Net automates calibration management of all six balances, documents daily performance and controls tolerances such as the minimum weight.

In addition to the balances, the system also monitors real-time status of the METTLER TOLEDO Safeline metal detectors in the network. FreeWeigh.Net controls the detector's performance validation routine and informs the operator that 1) the test is due, 2) metal detection has occurred, 3) settings have changed or a detector fault has occurred.

2. Accelerated tablet testing in the IPC room

Once per hour, 10 tablets are sampled and tested for hardness, thickness, diameter and disintegration. The test results are transferred automatically to the FreeWeigh.Net system for quality control and documentation. Additional instrument types are easily integrated using the Device Integration Utility.

3. Improved tablet quality monitoring and process control

Real time product quality data is evaluated and visualized on the FreeWeigh.Net system. Mean values, standard deviations and tolerance ranges are monitored online and allow for process control options, such as compression and punch adjustment.

4. Easy integration of packaging control

At the end of the chain the METTLER TOLEDO Garvens checkweighers ensure that the final products are not missing tablets or package inserts. Furthermore, visual attributes such as the correct expiration date are monitored and sent to the FreeWeigh.Net system for electronic quality assurance documentation.

5. Electronic Batch Record

After the batch is terminated FreeWeigh.Net generates an electronic batch report that is reviewed and released by quality assurance. The software system is fully validated and features all necessary functions to comply with 21 CFR part 11, such as:

- Audit trail (cannot be switched off !)
- Electronic signature
- User profiles and system access control with password management
- Device control

Customer testimonial

"With FreeWeigh.Net we managed to integrate the complete quality assurance process into one electronic solution. This simplified our QA procedures tremendously and also improved our process control by having real-time data available."

"The step from paper documentation to electronic batch records was made easy by the powerful FreeWeigh.Net reporting functionality. The IPC-testing as well as the batch review and release procedures have become a lot simpler and more efficient"

"We saved a lot of time and money by using the validation engineering expertise and the ready-made validation protocols from METTLER TOLEDO."

ServiceXXL
Tailored Services

Computer System Validation made easy

For the successful project implementation, METTLER TOLEDO validation engineers planned the validation in cooperation with the system owner, created customized documents, executed the required validation tasks and provided thorough training at the customer site.

Using the Computer System Validation (CSV) packs for FreeWeigh.Net saved the drug manufacturer the trouble of preparing documents and ensured that widely proven validation methods were used.

CSV Manual 1 contains all relevant information for a successful supplier audit, such as METTLER TOLEDO software development documents, original specifications, test reports and protocols as well as various SOPs in electronic format.

CSV Manual 2 contains detailed protocols for the Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ), as well as applicable SOPs for disaster recovery, backup and system security.



► www.mt.com/freeweigh

Ensure your tablet and capsule quality

What are the consequences of not detecting metal contamination? Unacceptable health risk exposure? Major impact on consumer product quality? Non-compliance with GMP regulations? Legal consequences?

Many frightening questions, one reassuring answer: Safeline metal detectors

Separate the contaminated pharmaceuticals

The Tablex metal detector instantly detects minute particles of ferrous, non ferrous and stainless steel contaminants. Whether introduced with the raw materials, or from broken sieves, screens or worn punches, the Safeline Tablex rejects contaminants and contaminated product into a separate catch bin to ensure correct disposal.

Offering great flexibility, the Tablex features “no tool” adjustment in three axes to aid quick alignment to any press output configuration.



Example of metallic contaminant

Matching pharmaceutical design standards

Designed to meet pharmaceutical cleaning validation procedures, the complete unit is manufactured from polished stainless steel and designed to an IP65 sealing standard. The user friendly display is simple to use and embeds all relevant functions for smooth operation.



Courtesy Altana Chemie

Unique metal detector features lead to unique key benefits

Features

- High sensitivity auto balance and crystal frequency tablet and capsule control
- Full stainless steel design made for direct wash-down
- Fail-safe reject in case of a power loss
- Access is password protected
- System performance qualification
- Touch panel key pad

Benefits

- ➔ High product quality and elimination of consumer health risk due to metal particle contamination
- ➔ Guaranteed compliance with GMP cleaning validation procedures
- ➔ Risk-free release of products through elimination of contaminated products
- ➔ 21 CFR part 11 compliance
- ➔ GMP compliance through documented processes
- ➔ Failure-proof and user-friendly operation

ServiceXXL[®] Tailored Services

ServiceXXL for verified quality, optimized uptime and trouble-free inspection

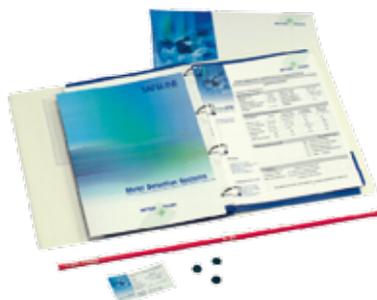
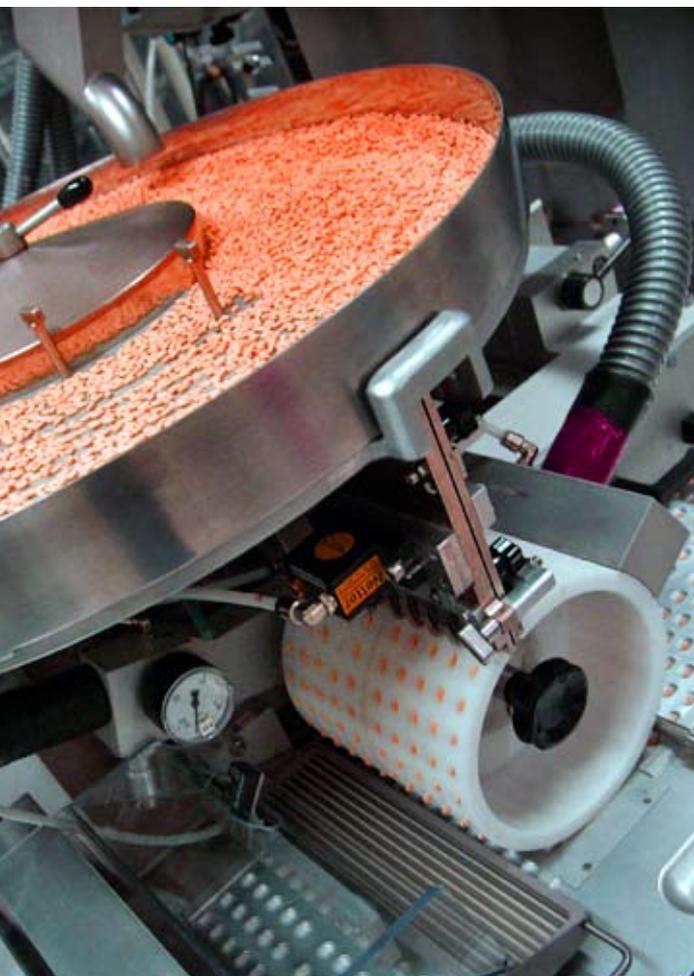
Equipment qualification (EQ) is much more than just complying with GMP regulations. EQ ensures the accuracy and consistency you require in equipment performance.

Safeline works in partnership with you: From the equipment selection and initial qualification processes to on-going performance validation (which can also be controlled by a FreeWeigh.Net system – see page 7), we ensure that you achieve optimum efficiency for your production process.



Customer testimonial

The London-based Aspar Pharmaceuticals company has installed high-sensitivity, high-throughput Tablex metal detectors from Safeline on its two new production lines. Aspar uses Safeline validation software to indicate when testing is due and gives QA staff step-by-step instructions through the test routine. Aspar's Manufacturing Manager Tom Burke said, "Our Safeline equipment has never let us down. They are exceptionally consistent, reliable and provide us with an extremely high standard of metal screening."



► www.safeline.co.uk

Authenticated effectiveness at Angelini SpA

A leader in developing and producing pharmaceuticals for self-medication (OTC and generics), Angelini SpA is one of the top five Italian pharmaceutical companies with an annual throughput of more than 80 million packages and a revenue of 1 billion

Euro. Their broad variety of products range from personal care, pharmaceuticals for prophylactic purposes and prescriptive pharmaceuticals such as pain relief therapy, neuropsychiatry, gynecology, and flu prevention.

With 2500 employees, Angelini operates production facilities in Italy, Spain and Portugal. With GMP compliant and FDA-approved production sites, Angelini is now able to serve the U.S. market too.



Courtesy Altana Chemie

At Angelini, effectiveness is key

The constant endeavor for highest product quality and meticulous GMP compliance is driving Angelini to raise its measuring bar when it comes to an effectively designed production and packaging process. To achieve the ambitious goal, Angelini in Ancona, Italy, relies on

Garvens checkweighers embedded in the blister production line to check each package. What are the requirements of Angelini?

- Dynamic checkweigher with 100% sampling of blisters
- Production throughput from 60-300 items per minute
- Integration of checkweigher into existing production line with max. insertion space of 1100 mm
- Flexible solution for various blister shapes, weights and sizes
- Statistical analysis program
- Anti-theft catch bins for rejects
- Qualification of the system

Satisfying demands, generating benefits...

...with checkweighers from Garvens – from initial installation and start up of a checkweigher to the qualification of the embedded system, we authenticated Angelini's effectiveness.

Optimized and error-free production process control through

- Embedded statistical analysis program
- Minimization of error occurrence with error and intervention software module
- High production throughput due to fast weight data processing
- Clear operator guidance by easy-to-use touch-screen

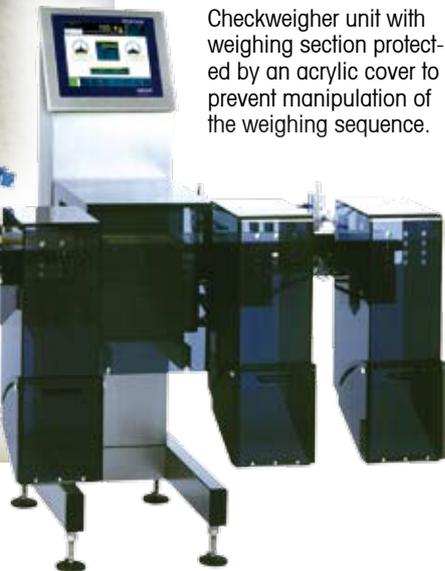
Full GMP compliance through

- Full qualification from setup and calibration to system configuration and documentation
- 21 CFR part 11 compliance by audit trail access restricted terminal
- Easy tracking and tracing due to process data transfer to MES/ERP systems
- Single-source service, qualification and validation support from METTLER TOLEDO Garvens.

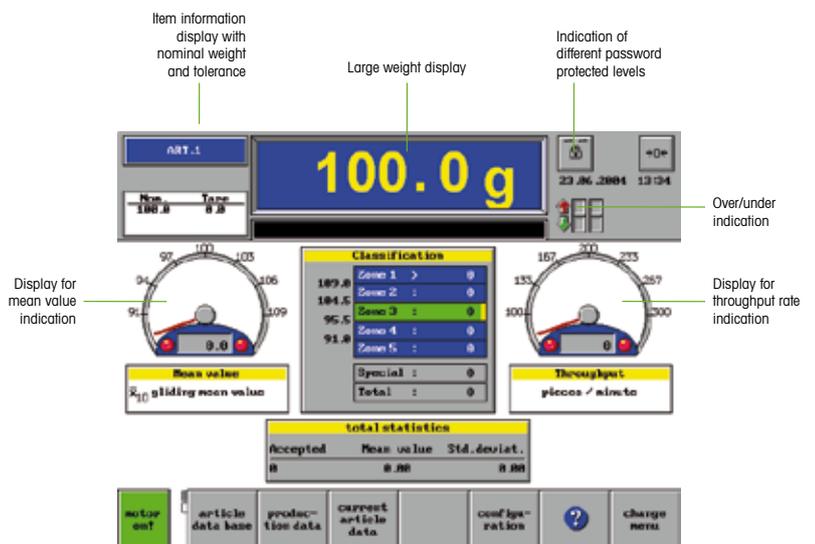
ServiceXXL
Tailored Services



Checkweigher unit with weighing section protected by an acrylic cover to prevent manipulation of the weighing sequence.



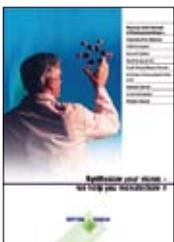
Smart screen – your cockpit for optimized material sampling



Customer testimonial

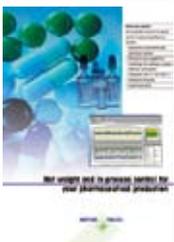
"We were impressed about the high system performance which exceeded our expectations by far. With Garvens checkweighers, we're even able to test bigger-sized blisters for completeness."

www.garvens.com



1. Weighing in the Chemical & Pharmaceutical Industry

► www.mt.com/industrial-chem-competence



2. FreeWeigh.Net

► www.mt.com/freeweigh



3. FormWeigh.Net

► www.mt.com/formweighnet



4. Garvens Checkweighing

► www.garvens.com



5. Safeline Metal Detection

► www.safeline.co.uk

Mettler-Toledo GmbH

CH-8606 Greifensee

Switzerland

Tel. +41 44 944 22 11

Fax +41 44 944 30 60

Your METTLER TOLEDO contact: