

Automated Dosing

QUANTOS
Perfect Dosing



Drug development

Precise preparation

Secure process

Flexible solution



Capsule filling

For preclinical and early clinical studies

METTLER TOLEDO

Automatic and precise Individual capsule filling

In preclinical and early clinical studies, the filling of capsules ranks among the most critical applications. Since the target quantities of the substances often vary from capsule to capsule, manual dosing is generally performed. However, this involves risks, which Quantos eliminates through automation.

Dosing toxic substances by hand is dangerous, takes a long time, and represents a potential source of errors that is not to be underestimated. A single error can cause the results of the entire study to be called into question. Although filling machines are clearly faster and safer than dosing by hand, at low throughput they are simply not

efficient and are also not capable of filling capsules with different target volumes. Quantos is the solution for small batch dispensing. Because Quantos is secure. Automated dosing prevents errors and protects the user. Quantos is fast. Despite different target volumes per capsule, it requires no changeover time. The intelligent

dosing head detects the powder properties and independently finds the optimum parameters for the powder in question. Quantos is economical. Substances are used efficiently and only in the minimum quantity required. More than half of the leading pharmaceutical companies have already made the switch to Quantos.



Safety

- Automatic means process reliability
- Traceable for audit
- Sealed dosing head system



Speed

- No changeover time
- No manual documentation
- Self-learning



Savings

- Efficient substance use
- Small footprint
- Standardized validation



Evolution in the lab

Balances have learned the skill of dosing

Whether filling individual capsules or entire series – the modular concept of Quantos offers an effective solution for every application. You decide whether we should expand your Quantos into a fully automatic dosing system or whether you would prefer a 1-to-1 system for individual filling. Whether 1-to-1, 1-to-12 or 1-to-30: with Quantos you can work more quickly, safely and economically than with a spatula.

Weighing in highly concentrated and toxic powder is one of the most common applications in sample preparation. A routine task which is potentially dangerous. A routine task that costs time and money.

The modular structure of the Quantos system is like a revolution for your lab. Depending on its intended use, Quantos can be converted from a manual to a fully automatic system. However, it always includes the intelligent dosing head with the sealed, impact-resistant transport container, which protects

the valuable material from jolts and moisture. Quantos positions the dosing head directly above the capsule and the dosing head closes automatically once dosing is complete. The risk of contamination is thereby reduced virtually to zero.



1-to-1

Ideal for use with cytostatic drugs



1-to-12

Manual sample changer

Ideal for very small batches



1-to-30

Automatic sample changer

Ideal for use in preclinical studies



METTLER TOLEDO

Small batch filling

Fully automatic and highly efficient

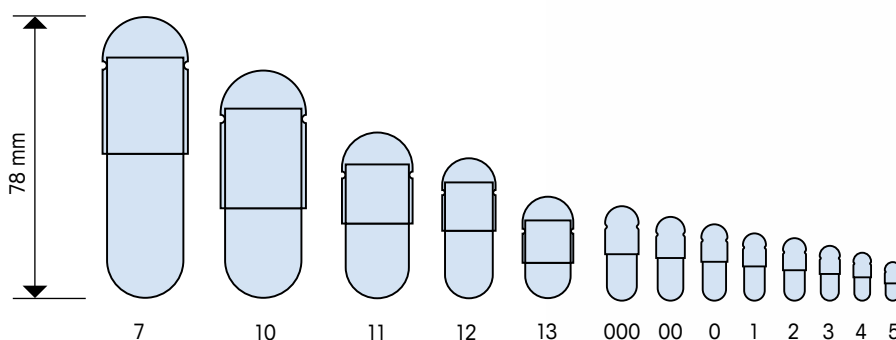
Aliquoting small volumes of poisonous substances into small containers is a repetitive, monotonous job. This makes the filling of small batches an ideal candidate for automation. The Quantos dosing system is as adaptable and flexible as a chameleon. It fills different capsule sizes, as well as vials and containers of any kind, both quickly and automatically.

The Quantos dosing system protects employees from poisonous substances and takes care of the repetitive, less challenging jobs you would rather not do by hand. Quantos is flexible and adaptable. Different target containers are no problem. It fills capsules from size

7 to 4, vials and containers up to a diameter of 28mm.

Quantos is intelligent. The Quantos Connect application software allows an individual fill quantity to be defined for each capsule and these data records to be checked

against the study protocol. Quantos reliably doses powder quantities of just 1mg. With such small fill quantities, it is also possible to use the material without a carrier substance. This allows you to save the formulation and also simplifies stability tests.



"Catalent" case study

Catalent Pharma Solutions is a development and manufacturing service partner for pharmaceutical, biologics and consumer product companies. Catalent's facility at Research Triangle Park in North Carolina, USA is the center of excellence for inhaled drug development services from pre-formulation, formulation, analytical testing and regulatory consulting to clinical and commercial manufacturing. Catalent has the breadth of capabilities and proven track record for advancing inhaled drug products to market. "Our past projects have demonstrated that implementing the Quantos Perfect Dosing System has armed the Catalent inhalation development teams with extra flexibility, capability and capacity for accelerating the research and development and clinical manufacturing of dry powder inhalers for our clients" comments Dr Lei Mao, Group Leader of Inhalation R&D at Catalent.

You can read the complete case study and also see Quantos in action at ► www.mt.com/quantos



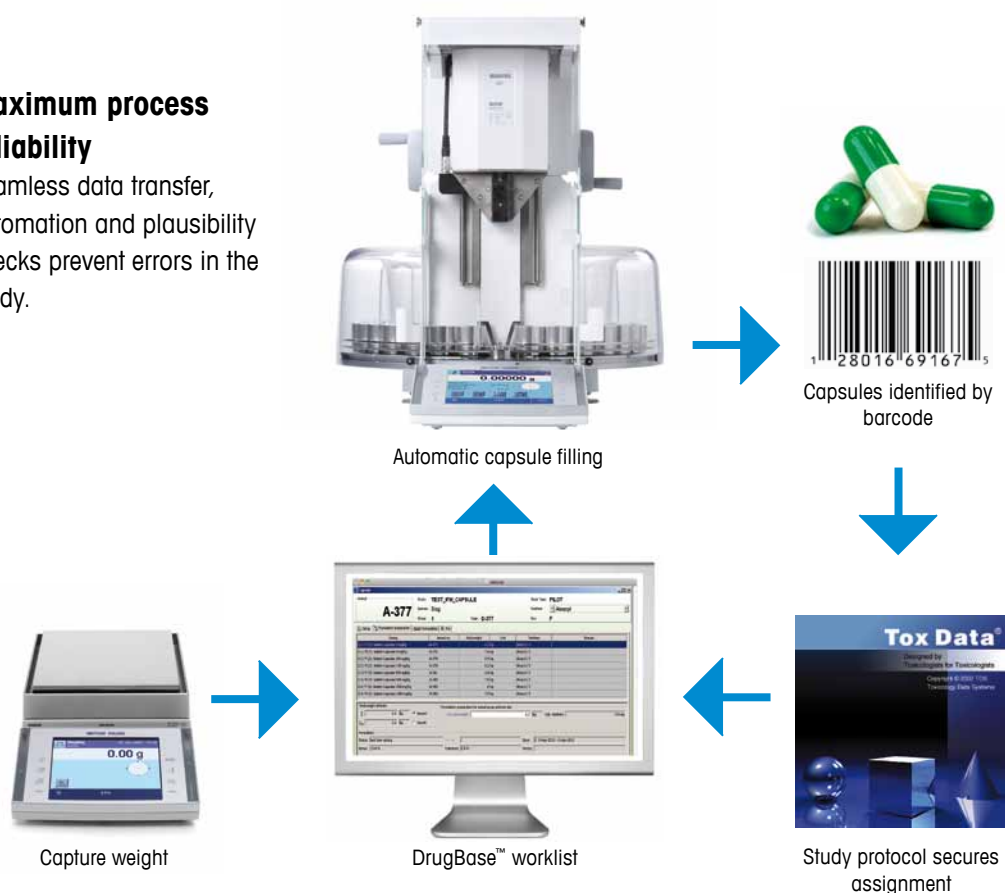
METTLER TOLEDO

Quantos and ToxData®

An alliance to secure your process reliability

Maximum process reliability

Seamless data transfer, automation and plausibility checks prevent errors in the study.



The collaboration between METTLER TOLEDO and PDS is characterized by process reliability and user friendliness. The Quantos dosing system and the ToxData software for preclinical studies are a perfect match for one another. ToxData displays the entire preclinical process and thereby creates comprehensive process reliability. The software is easy to use. It manages the recorded weights and uses these to generate worklists with individual target volumes for capsule filling. It transfers the worklists automatically to the Quantos dosing system. Quantos fills the capsules precisely with their target volume based on the information in the worklists, each of which contains a code to prevent confusion.

The entire procedure is secured and logged through automatic cross validations. ToxData is compliant with CFR21 Part 11 and automatically drafts a complete report at the end of each study. We offer service & support for the solution from a single source. The Quantos ToxData system is plug-&-play: simply position, connect and start your study!

► www.pds-preclinical.com

Validation

The Quantos ToxData solution...

- is fully validatable as per CFR21 Part 11
- is supplied with Installation Qualification (IQ)
- Validation scripts available



Dosing without studying – the dosing head doses all free-flowing powders. Its algorithm learns the powder characteristics and registers deviations in the particle size.

Intelligent dosing pin

Precisely doses any and all target volumes. Seals off the substance completely for your safety when not dosing.

Intelligent RFID* chip

Saves all substance-relevant data and thereby secures traceability.

Intelligent stirrer

Feeds powder continuously and homogeneously.

* Radio frequency identification

Quantos

Dosing system

Quantos QB5

Maximum load	220 g
Max. load of the fine range	81 g
Readability	0.01 mg
Readability in the fine range	0.005 mg
Repeatability	0.007 mg
Repeatability in the fine range	0.003 mg
Typical minimum weight (1%, 2sd)	1 mg

1-to-1

Configuration	QB5
Number of target containers	1
Sample change	n/a
Footprint	489 x 241 cm



1-to-12

Configuration	QB5 + Ergodisk
Number of target containers	12
Sample change	manual
Footprint	489 x 241 cm



1-to-30

Configuration	QB5 + QS30 + QuantosConnect
Number of target containers	30
Sample change	automatic
Footprint	610 x 431 cm
Target containers	
Diameter (max)	28 mm
Opening (min)	8 mm
Height (max)	115 mm



Features

- Secure and simple operation with the convenience of a touchscreen.
- AntiStatic Kit immediately eliminates any unwanted electrostatic charges.
- Motorized front doors, dimensioned for use in the glove box.
- Ethernet and RS232 interfaces for full connectivity.
- SafePos functionality ensures that no powder is spilled.

Accessories

Safety enclosure QSE1

Laminar flow enclosure optimized for Quantos to guarantee increased protection from toxic substances.

QuantosConnect application software

Used to draft worklists and also for data exchange with Quantos.



1-to-30 dosing system in safety enclosure QSE1

Dosing heads

The Quantos dosing heads allow you to dispense powder in an instant. Each dosing head is filled with one substance. This makes time-consuming cleaning processes a thing of the past and also eliminates the risk of potential cross-contamination. Your valuable or sensitive substances are permanently and securely protected in the storage containers. The Quantos dosing heads employ a high-precision stirrer which provides a homogeneous powder flow, and a dosing pin which seals the head completely before and after each dosing.

Dosing

Substances that can be dosed	Powder
Dosing repeatability of typical sample sizes (50mg)	< 2%
Speed of dosing (50mg)	20...30 s
Container volumes	120 ml
Dosed quantity deviation (CaCO ₃)	0.5 mg
Dosing head QH120-L: dosing capacity	1 mg - 5 g
Maximum recommended number of dosings per dosing head *	250
Maximum possible number of dosings per dosing head	999



* The recommendation of no more than 250 dosings per dosing head is based on experience with a very wide range of powders, more than 95% of which reached this value without displaying any measurable wear.

Quantos

Automation

Automation through Quantos revolutionizes capsule filling in preclinical and early clinical studies.

Quantos is fast, secure and economical.

In creating Quantos, the weighing expertise of METTLER TOLEDO has been combined with intelligent dosing technology. This has led to a product with the typical METTLER TOLEDO characteristics:

- Ease and convenience of use
- Innovation
- Quality

www.mt.com

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