

## Malvern to Display new Particle Characterization Systems at POWTECH 2005

Malvern, Worcester, Shire, U.K. – Malvern Instruments will introduce a new particle size and shape analyzer based on image analysis at Powtech 2005 (Nürnberg, 11-13 October, 2005). The system will be displayed alongside other new products and flagship instruments from Malvern's comprehensive portfolio of rheometers, viscometers, and on-line, at-line and laboratory-based particle characterization systems.



The breadth of Malvern's product range enables the company to support materials characterization applications across all areas of industry and academia, from laboratory analysis through to in-process measurements. Being able to provide instrumentation, technical and applications support for both rheology measurement and particle characterization is especially important as the links between particle characteristics and a material's bulk properties are increasingly examined and understood.

As well as new product introductions, highlights on the Malvern stand will include: the recently launched Insitec APS at-line particle size analyzer for use in process applications; the industry-leading Mastersizer 2000 laser diffraction system; and the award-winning Zetasizer Nano system for the characterization of nano-sized particles and molecules.

The Malvern technical team will be available throughout the show to discuss your materials characterization challenges. Anyone wishing to arrange a specific meeting is invited to con-



tact Malvern at the below mentioned e-mail-address.

Malvern Instruments is a leading supplier of analytical solutions for particle characterization and rheological applications. Advanced technologies are combined with robust mechanical designs and comprehensive software to provide systems that measure material characterization data (size distribution, particle shape, zeta potential, molecular weight) and bulk material properties. On-line, at-line and off-line solutions are provided to meet QA/QC, control and development applications across a diverse range of industries. An extensive support service facilitates the optimal design and exploitation of any given system. During POWTECH, you will find Malvern at stand 9-304.

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## Powdered Antibiotics Conveyed through a Curve, Dust free

When Macleod Pharmaceuticals expanded to a new range of antibiotic products, it needed to fit a bulk solids mixer, conveyor and filling machine into a confined area and reserve enough space for boxing, taping and labeling operations. After consultation with bulk solids handling specialists Flexicon Corporation, a flexible screw conveyor system was set up within Flexicon's own Test Laboratory facility, prior to development, to simulate the application and prove the proposed system's viability.

The Company's antibiotics typically comprise seven or eight powdered ingredients that are manually dumped from fibre drums into a 710-litre capacity ribbon blender mounted on load cells. Weight gain information on a display enables operators to dump the required amount of each material.

After a mixing cycle, the powder is gravity discharged into the U-shaped charging adapter of a 80mm diameter flexible screw conveyor. The conveyor consists of a flexible steel screw enclosed in a tube and driven by an electric motor. As the screw rotates, it propels material through the tube and self-centres, providing sufficient clearance between the screw and the tube wall to prevent product damage. It then transfers the powder

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through 45° across a distance of about 3.5m to feed a surge hopper above the filling machine that dispenses drugs into a variety of containers. Products are made in campaigns, each of which typically lasts two weeks and involves the manufacture of several batches of a single product.

The screw is the only moving part in contact with the material and can be removed rapidly between product changeovers for sanitizing of the screw and the tube's crevice-free interior.

Flexicon engineers also solved design problems specific to this application by orienting the charging adapter horizontally instead of at an angle and fabricating a flange that attached tightly to the blender's valve to discharge powder directly into the charging adapter with no exposure to the atmosphere. Due to a ceiling height restriction, the conveyor's discharge adapter also needed to be oriented as close to horizontal as the curvature of the conveyor tube would allow. While suspending the discharge adapter, complete with its 87kg motor, from the ceiling, a Flexicon engineer on the speakerphone fed data into his AutoCAD and calculated the adapter angle that corresponded to the curvature of the conveyor.

The reasons Macleod selected a flexible screw conveyor were two fold:

- To fit within the limited space.
- To prevent contamination of the product and plant environment.

Other types of conveying systems that failed to contain the dust, containment is essential in the case of antibiotics, were eliminated while the dust-tight Flexicon system accommodating the curvature of the conveyor tube to fit the restricted space between the blender and filler, fulfilled both points of the brief.



Due to space constraints, Macleod Pharmaceutical selected a Flexicon flexible screw conveyor to transport powder between a ribbon blender to a filling machine

Because this is a new manufacturing site for products that will be packaged in a new container size, U.S. Food and Drug Administration (FDA) approval is required before commercial products can be produced, as is also the case with drugs for humans. In anticipation, Macleod has been running pilot batches and practice runs to validate the system.

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## Cellular Weighing - Redefining Solutions

Seattle, WA, USA – Cellular Weighing by Measurement Systems International (MSI) is redefining available solutions for industrial weighing and process control applications.

A new and innovative approach, Cellular Weighing with CellScale, provides an efficient means to monitor and control multiple sensor inputs and outputs simultaneously with real-time communications to your information systems via a secure wireless network. The radio functions license free in the USA / Europe allowing multiple networks of separate weighing systems, scales and peripheral devices.

Real-time data transfer and control throughout the network provide a distinct competitive advantage, giving an accurate and total picture of your weighing and process information. Enhanced data acquisition, full-featured programmable signal processing, sophisticated data logging, and complete display of multiple sensors can be initiated and managed independently from remote locations.

The MSI-9000 CellScale serves as a central controller that combines advanced Analog-to-Digital (A/D) signal processing and superior wireless RF technologies into a single, industrial grade enclosure. With compact packaging and flexible mounting configurations, the MSI-9000 and its accessory products easily integrate with existing lifting systems and weighing equipment. Wireless transmission of weight and product information can be simply networked and communicated to all CellScale accessory products; including MSI Crane Scales, Digital Weight Indicators, and CellModems (for Scoreboard, Printer, PLC and PC interface). CellScale Virtual Monitor (CVM) software is available to



enable your PC to act as a full-featured digital scale indicator with data logging capabilities.

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