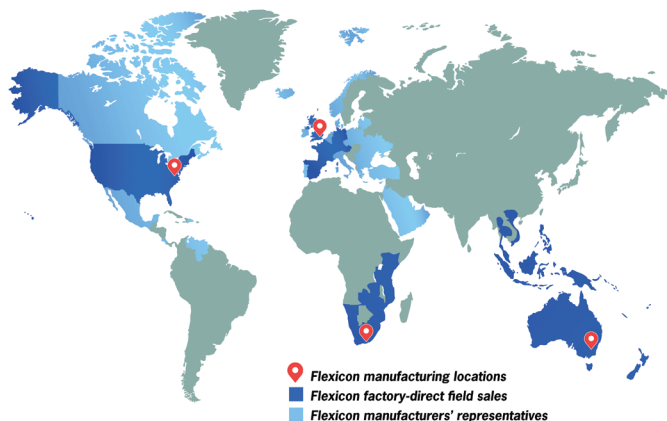




Bulk bag discharger in foreground delivers silica gel granules through receiving hopper and flexible screw conveyor, at 45°, to the first of four feed hoppers.

Automated Bulk Solids Handling System Increases Productivity, Market Growth

Q-0879



● Flexicon manufacturing locations
■ Flexicon factory-direct field sales
■ Flexicon manufacturers' representatives

flexicon®

USA

FLEXICON CORPORATION
Tel: +1 610 814 2400
E-mail: sales@flexicon.com
Web: www.flexicon.com

UK

FLEXICON (EUROPE) LTD
Tel: +44 1227 374710
E-mail: sales@flexicon.co.uk
Web: www.flexicon.co.uk

AUSTRALIA

FLEXICON CORPORATION
(AUSTRALIA) PTY LTD
Tel: +61 7 3879 4180
E-mail: sales@flexicon.com.au
Web: www.flexicon.com.au

SOUTH AFRICA

FLEXICON AFRICA (PTY) LTD
Tel: +27 41 453 1871
E-mail: sales@flexicon.co.za
Web: www.flexicon.co.za

SPAIN

FLEXICON EUROPE SPAIN
Tel: +34 930 020 509
E-mail: ventas@flexicon.es
Web: www.flexicon.es

FRANCE

FLEXICON EUROPE SAS
Tel: +33 7 61 36 56 12
E-mail: ventes@flexicon.fr
Web: www.flexicon.fr

GERMANY

FLEXICON EUROPE GmbH
Tel: +49 173 900 78 76
E-mail: vertrieb@flexiconeurope.de
Web: www.flexicondeutschland.de

SINGAPORE

FLEXICON SINGAPORE PTE LTD
Tel: +65 6778 9225
E-mail: sales@flexicon.com.sg
Web: www.flexicon.com.sg

INDONESIA

FLEXICON SINGAPORE PTE LTD
Tel: +62 81 1103 2400
E-mail: sales@flexicon.co.id
Web: www.flexicon.co.id

Automated Bulk Solids Handling System Increases Productivity, Market Growth

CHESHIRE, UK — Multisorb Technologies Inc. increased productivity at its new European facility for producing silica gel granule adsorption packets with an automated multi-line bulk solids handling system that simultaneously feeds four form/fill/seal machines. The system, under PLC control, consists of a bulk bag discharger, four flexible screw conveyors, and four feed hoppers gravity discharging material simultaneously to the form/fill/seal machines. Multisorb chose this layout over a simpler, lower capacity single line of flexible screw conveyors supplying the form/fill/seal machines one at a time.

The company selected mechanical over pneumatic conveying for gentle product handling to maintain particle size of 0.04 – 0.15 in. (1 – 4 mm). A flexible screw conveyor's self-centering stainless steel spiral rotates within a UHMWPe (ultra-high molecular weight polyethylene) tube, providing clearance between the screw and tube wall for the silica gel particles to flow undamaged. The bulk handling system, which is expandable for future market growth, was designed, built and commissioned by Flexicon (Europe) Ltd.

Forklift loading of discharger frame

Granules arrive in 1-ton bulk bags, which are lined to prevent entry of moisture or oxygen that would affect the hygroscopic material. The entire conveying system is airtight, conferring the same benefit.

A forklift operator attaches the bulk bag to four Z-CLIP™ bag strap holders* on a bag-lifting frame, then maneuvers the forklift to secure the frame on a 12 ft (3.6 m) high discharger frame above the 8 cu ft (225 l) capacity receiving hopper.

Bulk Bags discharge dust-free

The bulk bag/hopper interface consists of a manual SPOUT-LOCK® clamp ring positioned above a pneumatically actuated TELE-TUBE® telescoping tube, which facilitates dust-tight connections between bag spout and hopper, and automatically elongates the bag as it empties to promote flow and evacuation.

The telescoping tube pneumatically raises the clamp ring assembly allowing connection to the bulk bag spout, sealing the clean side of the bag spout to the clean side of the telescoping tube. It then lowers until the bag spout is pulled taut. Once the spout is untied, the telescoping assembly exerts continual downward tension on the spout, elongating the bag as it empties. The dust-tight seal between bag spout and clamp ring allows full-open discharge from the bag with no dusting.



SPOUT-LOCK® clamp ring and TELE-TUBE® telescoping tube allow quick, dust-free connections between bag spout and hopper and elongate bag as it empties to promote flow.



At first of three transfer points, slide valve between flexible screw conveyor and hopper inlet opens/closes to regulate product flow.

From the hopper, a 20 ft (6 m) long, 3 in. (80 mm) diameter flexible screw conveyor, at a 45 degree angle, draws the material to 14 ft (4.4 m) height into the first of four 4.5 cu ft (130 l) capacity feed hoppers. Three 15 ft (4.5 m) long, 3 in. (80 mm) diameter flexible screw conveyors connect the feed hoppers horizontally in series. Each hopper gravity feeds material to an auger and form/fill/seal machine.

PLC control allows simultaneous filling of any combination of the four feed hoppers, dictating how much material fills a hopper by opening or closing a slide valve between the discharge of the flexible screw conveyor and hopper inlet. High and low level warning indicators on the hoppers and above each slide valve tell the control to stop or resume flow through the conveyors.

Expandable for future production

The system permits installing a parallel line of flexible screw conveyors to meet expanded production. The inlet on each of the four feed hoppers is offset so an additional flexible screw conveyor can discharge into a second inlet opposite the first.

Sorbent packets eliminate moisture and oxygen in final packaging of food, pharmaceuticals, chemicals, electronics, aerospace and other products. The Buffalo, NY-based company built the 22,000 sq ft plant to capture opportunities in Europe, Mid East and Africa, delivering product to BS (British Standards), MOD (British Ministry of Defense) and DIN (Deutsche International Normal) standard accreditations. The bulk solids handling system has been fulfilling production expectations and will allow higher productivity as the plant expands into different products for new markets.

*Patent(s) granted and/or pending.



This bulk bag discharger with integral flexible screw conveyor moves malt from bulk bags to the bagging line.

flexicon®

USA

FLEXICON CORPORATION
Tel: +1 610 814 2400
E-mail: sales@flexicon.com
Web: www.flexicon.com