

EuroBulkSystems
will be exhibiting at
SOLIDS
Antwerp, 19-20 October
- see us there!



AZO can now offer a sophisticated system which is capable of dry cleaning the interiors of IBCs and similar transport/storage vessels; unlike with wet cleaning, problems and costs associated with disposal of contaminated or toxic wastewater are avoided, as described on p14.



Bunting Magnetics Europe recently supplied advanced metal separation equipment to Recapture Plastics' recycling plant in Rochester, Kent, UK (as described in our special feature on p12); pictured are Bunting managing director Simon Ayling (left) with Neale Buttery, Recapture's operations manager.



Daxner has designed and installed an advanced bakery ingredients mixing plant, featuring an automated IBC transport system, which breaks new ground in terms of powder dosing accuracy, hygiene, flexibility, reduced dust generation and minimal cross-contamination, as described on p10.



The Kinexus rheometer from Malvern Instruments - which offers extensive capabilities in advanced rheology and viscosity measurement - is currently playing an important role in research being undertaken by Germany's Clausthal University of Technology into the physical properties of drilling fluids (see p11).

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Protecting sensitive materials from moisture absorption; high-capacity Z-conveyor; load cell junction box with automatic fault detection; food grade vibratory conveyor; hygienic reverse-jet dust filter; sack closure by welding instead of sewing; high throughput centrifugal sifter; radiometric density measurement device; mixing solids with problematic liquids

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Chemical powders de-lumped with bulk bag conditioner



A bulk bag is loaded into the conditioner by forklift.

DSM Coating Resins Spain SL is the world's largest producer of polyester resins and one of the largest producers of speciality emulsions. To produce saturated polyester resin powders used in protective coatings for bridges, ships and automobiles, DSM receives large volumes of dicarboxylic acid and diol ingredients in bulk bags. Both materials have a tendency to agglomerate during shipment and storage, preventing them from flowing out of the bulk bag. This previously required operators to break lumps using hand tools. To eliminate the cost, mess, delays, and safety concerns of manual methods, the company installed a Block-Buster® bulk bag conditioner that de-lumps the materials automatically.

Workers originally emptied the bag on to a grate in a caged area and proceeded to crush the lumps using hand tools. "These manual methods created significant time loss and disturbances in the loading process while posing risk of injury and discomfort to workers," said Elio Sanchez, project manager at DSM Coating Resins Spain. Moreover, DSM encountered further blockages in the downstream process, resulting in additional delays in production.

Manufactured by Flexicon (Europe), the bulk bag conditioner is installed in a safe atmospheric area near the front end of the process, which leads the factory's blending reactors. Housed in a free-standing support frame, the unit measures 2.2m high by 3.4m wide by nearly 2m deep. It is equipped with two hydraulic rams

fitted with specially contoured end plates, and a powered scissor lift with variable-height turntable.

Once a forklift loads a bulk bag on to the conditioner's platform, the operator closes the safety interlocked doors. From the unit's control panel, the operator programmes the ram pressure, number of ram cycles, single or multiple turntable heights and degree of rotation, according to the dimensions of the bag and the conditioning required to loosen the material throughout the bag.

After pressing 'start', the conditioning cycle is automatic: the bulk bag is raised hydraulically to the preselected height, the end plates press opposite sides of the bag to break down the agglomerates, and the bag and turntable rotate 90° to condition the adjacent sides. The unit can also be programmed to automatically repeat conditioning cycles at multiple bag heights. The material now flows freely from bulk bag spouts into reactors, where 1 to 3t batches are converted into saturated polyester resins.

Mr Sanchez says the bulk bag conditioner has cut the time to de-lump materials by 75% and improved the quality of raw materials entering the factory's reactors while improving safety. Since dicarboxylic acid is a main ingredient in most batches produced, the conditioner is in use daily.

www.flexicon.co.uk



Once the safety doors are secured, the operator initiates the conditioning cycle.



A scissor lift raises the bulk bag to a preselected height while hydraulic rams with contoured end plates press opposite sides of the bag to loosen solidified powders.



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The turntable and bag rotate through 90 degrees to condition all sides, while the scissor lift allows conditioning at all heights; in addition to ensuring greater safety and enhanced quality of the raw materials, the Block-Buster has cut de-lumping time by 75%.



Before installing the bulk bag conditioner, manual methods to de-lump chemical powders slowed the reactor loading process.

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