HOSOKAWA MICRON LTD

AUTUMN 2009

Investing in the Future

The pace of change in the processing sector has never been so rapid with increased demands for improved energy efficiency, multi-purpose equipment for production flexibility, complete process containment, the development of nano particles for improved functionality and even superior service and maintenance requirements for 'through life' equipment economy.

With a continuing programme of investment Hosokawa Micron Ltd is meeting these challenges and forging ahead with new services, new equipment developments and new technological advancements that are designed to meet your needs and keep you ahead of your competitors and extend your prosperity.

New Contract Processing Suite

'Investment is key to meeting the needs of our customers and we have just started work on a new contract processing suite, here at Runcorn,' explains Iain Crosley, MD. 'The new, purpose designed chemical processing suite will enable us to offer customers improved access to a range of technologies for processing a wide variety of materials from single process to complete multi processing solutions involving milling, micronising, mixing and classification. This new development follows last year's development of a dedicated food processing suite and will involve a re-design and increased capability of the facility's test station.'

Performance Monitoring for Greater Efficiency

A new performance monitoring service that highlights operational/equipment under performance by using advanced analysis techniques and that can also determine response actions to these failings can help you save energy costs, reduce emissions, improve production rates and yields. Applied continuously or as an ad hoc health check, the pay back on investment can be rapid and savings significant.

'Working in partnership with intelligent software supplier, Knowledge Process Solutions Ltd. and utilising our processing expertise, Hosokawa Micron Ltd can ensure you make the most of existing processing lines.'

Through Life Maintenance

'Greater equipment efficiency through regular maintenance and servicing, makes sense when considering cost economies. Hosokawa service engineers will create a schedule of service visits to suit your needs, minimising machine downtime, out of spec production and increasing the availability of your machines. Our experienced service personnel can give you expert advice and a superior technical service for routine maintenance and emergency breakdown as well as managing all your spare parts needs.

CONTENTS

New Chairman and CEO for Hosokawa Micron Corporation 2
Super Flash Dryer Competes against Spray Dryer 2
New Picoline Series - Batch Production Down to <1g 3
Liquid Vaccine Waste 3
New Flexible, Multi Purpose Dryer 4
Create Nano Sized Metal Oxides 4

New Chairman and CEO for Hosokawa Micron Corporation

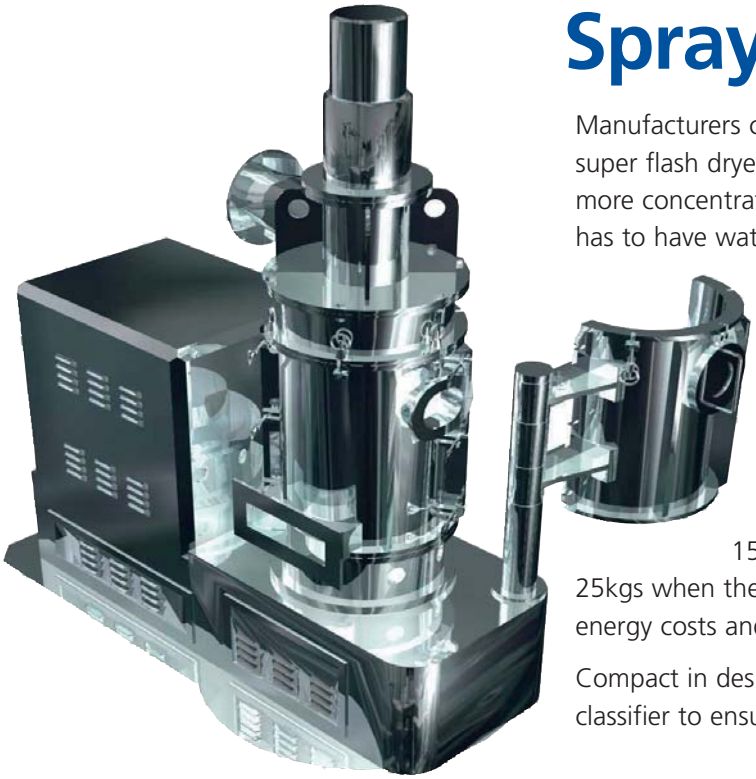
From their headquarters in Osaka, Japan, The Hosokawa Micron Group, world leaders in powder and particle processing technology, blown film technology and confectionery technology, announce changes to their board and management team to take the company to its next stage of development.

Mr. Masuo Hosokawa stands down from the position of CEO of Hosokawa Micron Corporation (HMC) and assumes the position of Chairman of HMC. He is succeeded by Mr. Kiyomi Miyata who is appointed President, Representative Director/CEO of Hosokawa Micron Corporation.

Mr. M. Hosokawa joined the company in 1951 when he assumed the position of President from his father Mr. E. Hosokawa, and founder of the company. His vigorous leadership for over 50 years has built a 'Mountain Range of Powder Technology' making the company a leading global enterprise.

Mr. K. Miyata, who has been with the company for 40 years moves to his new leadership position from that of Vice President, Representative Director/COO of HMC. With a strong background in engineering and sales Mr. Miyata has a heritage and breadth of experience to take the company forward into further growth.

Super Flash Dryer Competes against Spray Dryer



Manufacturers considering spray drying, should check out the Drymeister, super flash dryer, before making their decision. Capable of handling sticky, more concentrated feed materials than the spray dryer – which sometimes has to have water added to the feed material, the Drymeister can accept dewatered filter cake straight from the dewatering stage, therefore saving time and energy.

Small increases in the feed moisture of any product to be dried has a profound effect on the evaporative load and thus thermal energy costs, which are very significant when the solvent is water because of its high latent heat. 100kgs of dry end product from a feed moisture of 60% means 150kgs of water to be evaporated but this reduces to only 25kgs when the feed moisture is 20%. This is a significant reduction in energy costs and one where the Drymeister scores very highly.

Compact in design, the Drymeister incorporates a grinding rotor and air classifier to ensure the product is to the correct particle size.

New Picoline Series - Batch Production Down to <1g

Featuring a series of eight individual machines specifically designed for the production of very small batches of between <1g and several grams, the Picoline equipment maintains, in miniature, the high class engineering standards and leading edge technology for which Hosokawa Micron is renowned.

Initially featuring the:

Picojet, fluidised bed opposed jet mill
Picoliq, agitated ball mill **Picomix, batch mixer**
Piconizer, spiral jet mill **Picoplex, impact mill**

the series will be extended through the year with a further three machines.

Because the principle of operation of the Picoline machines is the same as that of large production scale machines, R&D departments can be confident that the transfer of a manufacturing process developed using a Picoline machine to a production scale machine will be smooth and problem free. Picoline machines are designed for ease of operation, maintenance and cleanability and offer early stage development opportunities at low capital investment costs.

Ideally suited to research and product development or for manufacturers of expensive materials in the field of nanotechnology, pharmaceuticals, plastics, ceramics, speciality chemicals or new functional materials the Picoline series leads the way in small batch processing technology.

Liquid Vaccine Waste

A new design of a vaccine waste handling system, is not to be sneezed at, say Hosokawa Micron engineers as the threat of a swine flu pandemic promises to be realised. As vaccine producers ramp up their production of a range of flu vaccines the problems of handling the waste from the process becomes a significant consideration in maintaining the safety of personnel.

The new system, developed in conjunction with a multinational biotech company requires minimum operator intervention whilst maintaining low personnel exposure levels to potential airborne contaminants. Already the Hosokawa Micron system has gained the approval of the Health and Safety Executive.

The system allows liquid waste to be pumped through a series of safety interlocks into an empty IBC which is connected by an airtight seal. Overfill is prevented by flow controls connected to a weigh scale to allow a predetermined volume/weight to be dispensed. The waste product can not be pumped without connection to an IBC. Air displaced from the IBC is drawn through a HEPA filter to prevent airborne contamination. A cleaning cycle ensures no contamination at the top of the IBC on seal removal. A localised extraction system removes the air within the area of operation, providing a further safeguard for operators against contamination by airborne substances.

New Flexible, Multi Purpose Dryer

The Vrieco Nauta Vacuum Dryer is now much more than just a vacuum dryer – due to recent developments it is now capable of many different processes such as filtration, chemical treatments, sterilisation at high temperature and pressure, and vacuum drying making it suitable for a broad spectrum of products.

Now offering a 50% reduction in processing time to deliver potentially significant energy savings the system offers maximum production flexibility with minimal operator intervention.

Process time is reduced not only by mechanical dewatering (which can be performed by installing a filter directly on top or inside the dryer) prior to drying but by then heating the extracted water which is then recirculated back into the dryer which reduces the process heating time.

Crystallisation can also be carried out in the vacuum dryer where the reactants can be first dissolved and reacted. The efficient mixing within the dryer accelerates dissolution and temperature control. Cooling of the liquid then initiates the crystallisation process. The crystals formed can be dried under vacuum, all in the one machine.

Chemical reactions including those where solids react with gases or liquids, can be handled very effectively with the high efficiency of the mixer ensuring an homogenous result in product conversion, while the reaction energy is efficiently removed or supplied by the good heat transfer within the dryer unit.

Create Nano Sized Metal Oxides

The NanoCreator FCM-Mini - continuous nano-particle production system for metal oxides creates high purity particles by the build up method that allows particles to be adjusted from a few nm to a few hundred nm. The NanoCreator FCM-Mini is able to create single component particles or multi-metal oxide components.

The raw material is vaporised in a reactor and nano particles are generated by a chemical reaction within the gas phase with the assistance of a flame. The critical step of the process is to collect the nano particles by rapid quenching before the occurrence of any grain size growth or particle agglomeration appears.The system can produce nano particles consisting of multi-components with three structural patterns; core shell type, solid solution type and finely dispersed type.

Competitively priced for customer entry into nano material production, the NanoCreator FCM-Mini produces nano particles at a rate of 1-10g powder per 30 minutes, depending on the type of metal oxide and the particle size requirements.

Easy to disassemble for cleaning purposes and space saving at 900mm x 1300mm x 1800mm (height) the FCM-Mini is simple to operate. Larger models for production purposes are also available in the FCM-Lab, FCM-400 and FCM-800, with production capabilities of up to 5.0kgs/h.

For further information on anything within this newsletter please visit **www.hosokawa.co.uk**
Email: **info@hmluk.hosokawa.com** or telephone **+44 (0) 1928 755100**

HOSOKAWA MICRON LTD

Rivington Road, Whitehouse Industrial Estate, Runcorn, Cheshire, England. WA7 3DS.
Tel: +44 (0) 1928 755100 Fax: +44 (0) 1928 714325 E.mail: info@hmluk.hosokawa.com www.hosokawa.co.uk