

## Hosokawa Micron Corporation Build for the Future

Construction of a brand new head office building at Hirakata, Osaka, Japan has been completed by Hosokawa Micron Corporation, world leaders in powder and particle technology. The new building is the latest phase in the company's expansion, both within Japan and also worldwide and is a key indicator of the company's investment in the future of particle science and processing.

The 12 storey tower of the Global Hosokawa Micron Group stands high above the rest of the city and features state of the art communications and environmentally friendly systems, covering over 5,500 m<sup>2</sup>. Forming a corporate hub, all divisions are based in the new building including meeting rooms and an exhibition space.



## New Hybrid Isolator

- A high visibility
- Short lead time
- Containment levels below 1µg/m<sup>3</sup>.
- Cost effective
- Mid-range isolator

The Hybrid Isolator uses the proven Hosokawa Flexible Containment Isolator (FCI) as a basis and is designed for applications that require the containment of larger pieces of equipment and processes which require a larger working area.

The acrylic canopy allows full visibility of the inside of the isolator eliminating unlit corners or dark spots resulting from shadows cast from internal equipment or the operator's arms. Location of glove ports in any position on all four sides of the canopy, to give operators easy, all round access to all equipment, controls and process and maintenance activities.

HEPA filtration and a continuous liner bag out port are fitted as standard.

Optional CIP system, nitrogen purge, interlocked access door, oxygen analyser and electrical power sockets.

Lighter in weight than a conventional stainless steel isolator, the Hosokawa Hybrid Isolator can easily be wheeled to different locations within the facility, making it highly flexible and user friendly.



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# Instant Hot Chocolate

## The Task

A European company specialising in processing and enhancement of speciality ingredients asked Hosokawa Micron to help them create two different instantised cocoa powders with full flavour, good dispensability and good flow properties for accurate dosing - one for home consumption and one for vending machines.

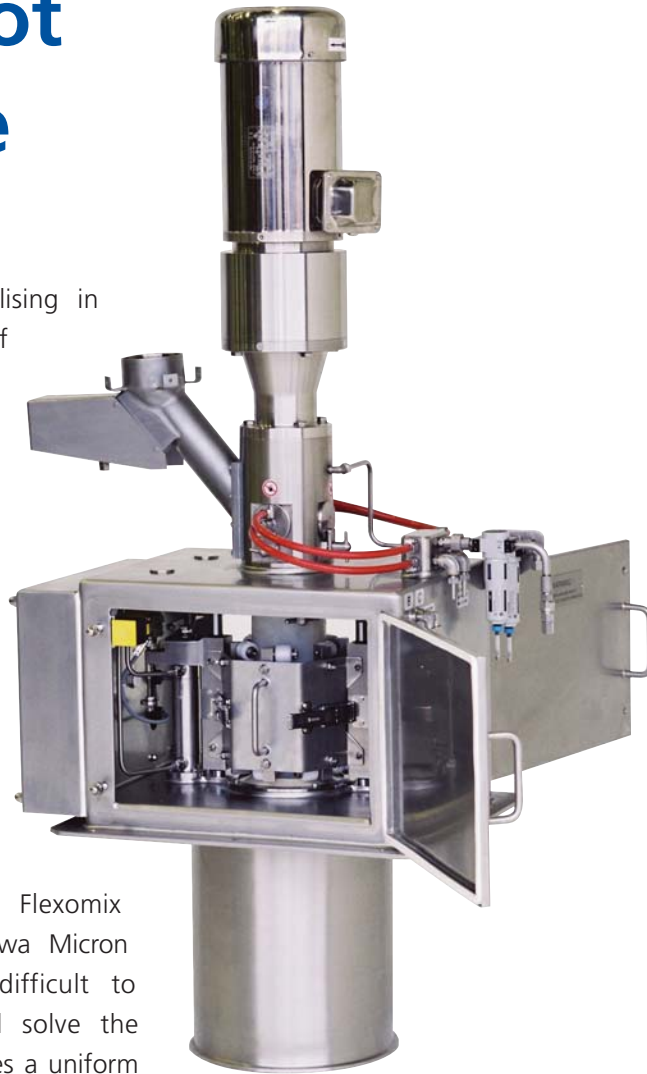
## The Solution

By using the unique Schugi Flexomix agglomerator system, Hosokawa Micron were able to handle the difficult to agglomerate ingredients and solve the problem. The Flexomix produces a uniform product with no demixing. Its gentle but rapid processing produces dust free products.

The dry ingredients for the chocolate drink are dispensed into the Flexomix and liquids added via atomising nozzles to form a non compacted, granular product which is uniform and free flowing. Particle size can easily be adjusted to produce granules in the 0.3 - 0.6mm range that is ideal for quick and easy dissolving and suited to the home consumer or vending machine usage.

Power requirement is low as there is only a small amount of product in the mixing chamber at any one time and the unit can be fully disassembled in just 2 minutes, for major cleaning or product changes.

The agglomerator system, includes a fluid bed dryer for further processing of the wet agglomerates and incorporates classification and recycling for economic and efficient processing of this difficult to agglomerate product.



# Minimix

A small mixer dedicated to laboratory use, producing small batches, the results of which can be used for scaling-up to larger mixer sizes.

Using Vrieco Nauta mixing technology, the Minimix produces small batches of powders, pastes and slurries for test purposes, and meets all FDA, GMP and Industry Standards.

The compact drive unit and non-lubricated orbit arm are designed for easy cleaning between batches.



With variable speeds on both the rotating screw and its orbital arm, the Minimix controls the continuous movement of product from the bottom of the vessel to the top, whilst the orbital arm revolves the screw around the inner vessel wall. The product then flows downwards into the centre of the vessel, completing the intensive and highly efficient mixing action.

Manufactured from stainless steel and available in a range of sizes from 5 to 20 litres, the mixer includes exchangeable containers for quick and simple batch changes, helping avoid cross contamination between batches. Screw speed can be set between 120-300 rpm whilst the orbital arm rotates at 4-10 rpm.



# Contract Processing Suite Now Registered For Food Products

Hosokawa Micron Ltd announce that they have received BRC Global Standard-Food 2005 accreditation for the receipt, milling/size reduction and packing of dry powders for the food industry, the new suite is part of a dedicated contract processing facility at the company.

The new suite, devoted solely to food products is available for customers looking to outsource particle and powder processing in lots from only a few kilos to several tonnes.

The modular design of the contract processing suite and the availability and interchangeability of a wide range of different pieces of equipment, means Hosokawa Micron can handle a wide variety of materials from single process to complete multi processing solutions, involving milling, micronising, mixing, classification, agglomeration and drying.

The contract processing service is supported by an in-house test centre for product analysis, process evaluation and full product traceability and adherence to ISO9000/2000 international standards.

Hosokawa Micron's contract processing service operates round the clock and now food products can be processed, as well as chemicals, detergents, colour pigments, metal powders, ceramics, plastics and minerals.



## New Freeze Drying for Nano Materials

Spray drying does not always give the required quality with materials in the nano size range (down to 50 nm) but Hosokawa's stirred freeze drying technology has been successful where agglomerate-free powder from a

suspension is required. Wet milled materials on nano-scale, such as aluminium hydroxide, titanium oxide, calcium carbonate and PTFE have been successfully milled whilst trials are currently taking place on food products, including watercress, carrots and mushrooms

Conventional freeze drying systems of the tray type are typically slow and manually intensive as trays of material have to be filled and discharged by hand. As a product layer forms a single piece of hard baked material, this has to be crushed after the freeze-drying stage and this step can damage some products.

Hosokawa Micron's new stirred freeze drying technology does not suffer from the above problems, as it is based on the use of a stirred, jacketed Vrieco Nauta conical vacuum dryer, operated at low temperatures and pressure. In

stirred freeze drying, material is in constant motion which shortens the drying time. The final freezing stage is simplified because it can be done in the same vessel, making the process much less manually intensive, compared to the conventional tray drying process.

This new stirred freeze drying technology can be used for even the most sensitive and precious products with a single step solid to gas stage, which removes the liquid without changing the product structure. Ideal for applications in pro-biotics, food, pharmaceuticals and nano materials, where the demand for pristine undamaged final product is paramount.

This new technology can be operated continuously if required, where the dry particles released from the frozen material during the drying process, are collected in a filter alongside the actual dryer.



# New Pin Mill for Ultra Small Batches

A totally new impact mill capable of grinding small batches as low as 2g, down to 25 micron is now available from Hosokawa Micron.

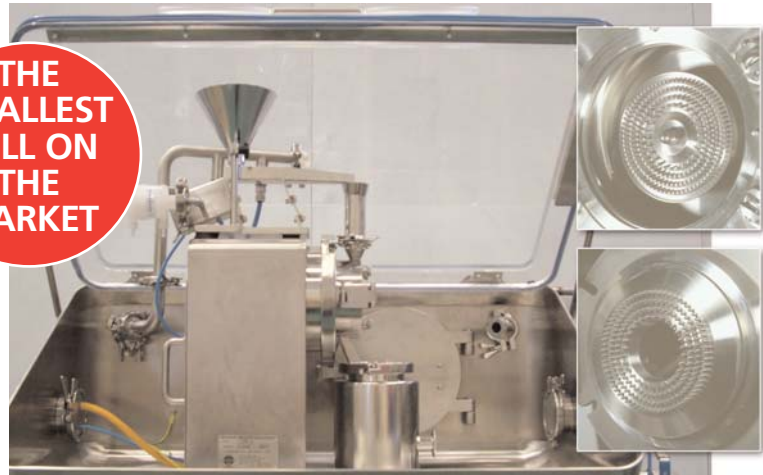
Designed for laboratory and bench top grinding of materials. The LMP2 mill comprises a fixed row of pins mounted on the mill housing door and a rotating pin disc with variable speed control from 4,000 to 36,000 rpm. Intermeshing pins produce ultra fine grinding of particles.

Easy access and cleaning with all components easily removed, facilitates the mill's multi-product use.

The mill can be fed by a vibratory feeder to ensure a steady flow. Complete with its own product container with integral filter, the mill is designed for maximum final product collection efficiency.

Both the mill housing and bearings are nitrogen purged with the LPM2 milling at below 7% oxygen to prevent

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SMALLEST  
MILL ON  
THE  
MARKET**



explosion risk. Secure locking screws and safety interlock on the mill door add additional safety for operators.

The LPM2 Pin Mill can be mounted within a small isolator should safe and secure, low operator exposure level milling be required.

## ATEX Compliant Crouton Crumbing

ATEX/DSEAR legislation compliancy, production flexibility and operational mobility were key selection criteria when Chaucer Foods Ltd. began researching size reduction equipment capable of milling croutons and baked snack foods down to a fine crumb.

The UK based manufacturer of freeze dried fruits, croutons, snacks and various bread based ingredients, purchased a unique 10 barg shock-pressure resistant design of the Hosokawa Rietz Angle Disintegrator with bulk packing station. The system is designed and manufactured to meet cGMP requirements within a sanitary design and is ATEX compliant having an internal zoning classification to ATEX 20 for the safe size reduction of potentially explosive and combustible products.

The ability of the Hosokawa Rietz Angle Disintegrator system to produce different crumb particle sizes through a simple screen change was a further factor in Chaucer Foods, Technical and Development Manager, Ian Pomfret's choice of this particular machine.

The 8" Angle Disintegrator is the smallest in the range but was ideally suited to Chaucer Foods' requirements of up to 300Kgs/hr. The skid mounted system has been designed to bolt on to either of the two parallel production lines, for soup or salad croutons, with minimal operator intervention.

Product from the Disintegrator is collected in a cyclone separator and then discharged into a bulk packing system with the ultra fines from the cyclone being carried over to a dust separator filter collection unit. Clean air is exhausted to atmosphere.

Ian Pomfret says "The Hosokawa Technical Team have worked exceedingly well with our in house team, not only have they resolved our complex process requirements but have brought valuable and constructive suggestions to the table. Our new milling system is in line with Chaucer Food's ISO 14001 accreditation, with the system giving us greater raw material conversion efficiency and creating a new product offering to add to our portfolio".

For further information on anything within this newsletter please visit [www.hosokawa.co.uk](http://www.hosokawa.co.uk)  
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