

# Hosokawa Micron Ltd Announce New Composite Downflow Booth Design

Hosokawa Micron Ltd can now offer customers a further option in downflow booth design and construction in addition to their existing range of clean air workstation variants. The new modular design Downflow Booth can be constructed using a new composite material, rigid polyurethane foam (PUR/PIR) which has significant advantages over conventional double skin construction methods.

Each composite panel has an 80mm, CFV free internal core of fire resistant PUR/PIR with outer metal panels finished with a food safe laminate. PUR/PIR is strong and durable but the panels are lightweight and quick to install using a hidden self locking system that eliminates the need for traditional nuts and bolts. The roof can be designed to hold the weight of two men (200Kgs) in any position. Modular composite panel design can offer increased booth widths.



This proven, new composite wall and roof panel design uses metal faced sandwich panels with rigid polyurethane foam core, that bolt together quickly and simply to give a rigid structure that is both strong and durable. Using this new lightweight construction material has significant end user benefits as it has excellent insulating properties which aid both soundproofing and thermal insulation. Temperature regulation is easier because of the low heat losses meaning temperature sensitive operating environments can economically be kept at the correct temperature.

It also offers significant advantages in terms of flexibility of positioning of internal equipment, windows, doors and ports due to the tensile strength of the material and ease of cutting, moulding and frame sealing. This feature means that cables can be incorporated within the composite panels reducing ledges, grooves and ridges that could harbour powder residue.

Whether customers require a standalone downflow booth, complete clean air processing lines or separate dispensing facilities Hosokawa Micron Ltd engineers can now offer a fresh alternative for those seeking flexible contained processing options that are quick and easy to install.

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**NEW**

# Toll Processing Suite

Hosokawa Micron announce the opening of a new dedicated toll processing suite. The investment in the facility delivers three separate toll processing rooms allocated to chemical and food applications. The service is supported by an in-house test centre and accredited to ISO9001.

'We have responded to the increased demand in the market for flexible and efficient toll processing by designing a series of processing rooms capable of single or multi-stage processing, variable process stage configurations and fast turnaround. The toll processing suite design allows for process isolation, full product containment, batch validation and tracking as well as in house product analysis, testing and process evaluation.' explains Kathryn Hipkins, Technical Centre Manager, Hosokawa Micron Ltd.

Dedicated food processing rooms are BRC Global Standard-Food 2005 registered for the receipt, milling/size reduction and packing of dry powders for the food industry .

'The modular design of the processing rooms and availability of interchangeability of a wide range of different pieces of equipment means we are able to offer contract processing services from single process requirements to complete process line services. We offer a round the clock service to ensure our customers have a fast turn around and reliable service to meet their short or long term processing needs.'



## Analyser for Granules

The Granulyser Type EGT 100/25 is a unique concept machine designed specifically to provide a standard and repeatable test method to predict the strength and behaviour of granules. By replicating the shear, impact and abrasion forces acting upon granules, in simulated industrial production plant conditions, granule performance can be studied in detail enabling informed decisions to be taken on further processing steps.

- Compact design
- Highly portable
- Easy cartridge loading/unloading of material
- Easy to dismantle and clean
- Removable parts are dishwasher cleanable
- Repeatable conditions giving repeatable results

### FOR PREDICTING GRANULE STRENGTH AND BEHAVIOUR

*Developed jointly between Hosokawa Micron Ltd, Hosokawa Bepex, the University of Leeds and the Enzyme Dust Consortium.*

# Contained API Particle Size Reduction System Designed for Fully Flexible Operations

Close cooperation with one of the world's largest pharmaceutical companies has enabled Hosokawa Micron Ltd to develop a unique Contained Particle Size Reduction System that is suitable for flexible milling from coarse size

down to ultrafine particles of active pharmaceutical ingredients at pre-clinical scale R & D grammes batch size to small scale manufacturing batches.

The Contained API Particle Size Reduction Facility includes three mills plus an in-feed, in-line, upstream lump breaker, multi-feed point options and operator exposure levels of  $<1\mu\text{g}/\text{m}^3$ . Manufactured to cGMP design and incorporating full SCADA control the system is the first size reduction system of its kind to offer such high levels of 'complex but not complicated' operational flexibility that is crucial in today's fast moving and competitive market.

The system consists of two separate but interconnecting rigid isolator chambers, the milling chamber and the filter/product collection chamber.



## Interchangeable Size Reduction

The milling chamber is engineered to accommodate any one of the three interchangeable mills that are mounted onto fully self-contained, plug-and-play mobile trolleys which are wheeled into position for docking. Trolley interlocking and inflatable seals ensure mills are fully engaged and connected ready for operation and enable the  $<1\mu\text{g}/\text{m}^3$  OELs to be achieved.

The system's originally specified Impact Mill for fine grinding and Spiral Jet Mill for finer grinding were supplemented with an additional Fluidised Opposed Jet Mill for finest micronising. The Fluidised Opposed Jet Mill was originally part of another system but was re-engineered to be integrated and meet the requirements of the new size reduction system.

The upper part of the Milling Chamber houses the in-line lump breaker for coarse grinding and pre-conditioning of the powder prior to further downstream size reduction.

## Multi-Feed Options

Because of problems associated with the different flow characteristics of the materials to be processed in the system, multiple feed options for products not requiring the in-line lump breaker, are incorporated into the system, with the option to use the most appropriate metering device, i.e. screw feeder or a rotary valve or a vibro feeder for small and grammes batch sizes.

## Product Collection Chamber

Whilst the milling chamber can be used alone for production of small and grammes batch sizes, the filter/product collection chamber is used for larger batch production. Sub-division and dispensary operations can also be carried out in the filter/product collection chamber. Product is separated from the conveying gas using a patented Isolator version reverse jet filter or a static bag type filter.

In-line laser diffraction analysis or manual sampling options are available when processing large batches to monitor product particle size and distribution.

The Contained API Particle Size Reduction System features half suit technology for an enhanced ergonomic and less restricted working environment with lift platforms providing easy operator accessibility for all procedures. Easy clean construction reducing dust collection areas and dead spots enables hand held lance WIP operations to meet stringent standards.



*Hosokawa Micron engineers have worked closely with the customer's engineering, safety, quality and operational teams to develop this new dimension in flexible API processing with every opportunity taken to deliver a long term, 'future proof' processing system. As a result of our longstanding working partnership we have been able to use existing, alongside newly developed, equipment designs, develop existing process & control software and utilise performance data to deliver to the customer a highly user friendly and flexible solution.*

**Says Mike Coffey, Pharma Team Leader, Hosokawa Micron Ltd.**

# Set the Record

A short installation deadline was crucial to one manufacturer seeking an up to the minute processing solution that would meet the highest food standards and enable them to get a product to market without delay.

By locating a suitable, already manufactured but unused Vrieco-Nauta Mixer, Hosokawa Micron engineers were able to complete the installation in 4 weeks. This included time for modifications to the pharmaceutical grade, domed top mixer, to ensure critical processing criteria were met.

The fast turn around project meant minimum production disruption to the customer and timely production of a recession busting product to meet high market demand. Highly satisfied with the result Hosokawa Micron's customer praised them for their helpful and professional service.

Hosokawa Micron's equipment and process technology experience meant that all aspects of the project could be quickly evaluated and solutions developed without delay. At all times the project was executed with close co-operation between Hosokawa's and the customer's engineering teams.



# Unlock the Performance in your Plant

NEW Performance Improvement Support Services for plant and equipment from Hosokawa Micron Ltd. ensure existing plant is operating at full potential.

- Unlock extra capacity
- Improve product quality
- Cut energy usage
- Reduce emissions
- Increase plant availability



Combining the strength of Hosokawa Micron processing expertise and the latest software technology to optimise performance on individual processing units, integrated systems and single or multiple processing lines.

Hosokawa Performance Improvement Services include analysis and monitoring of equipment operations via the latest software technologies and the addition of systems for automatic control and optimisation of equipment.

With a range of modular service options Hosokawa Performance Improvement Services give manufacturers a low risk, low capital cost, phased approach to performance improvement and plant optimisation. Hosokawa Micron engineers are able to apply their expertise and the technology across Hosokawa equipment and other manufacturers' equipment too.

## Typical Savings

Toner manufacture	£200,000, reduced energy, increased yield.
Potash refining (dryer)	£47,000, reduced energy.
Brewery (refrigeration)	12% energy saving.

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