



# INSTANT PRODUCTS

*Powder & particle agglomeration technologies.*



**HOSOKAWA MICRON GROUP**

Process technologies for tomorrow.

# AGGLOMERATION OF INSTANT PRODUCTS

*One-stop shopping for producers of instant products.*

Although Hosokawa Micron is well known for its mixing and drying systems, it actually has much more technology to offer for making custom-made powders. The company designs and manufactures complete processing lines that enable customers to manufacture end products with specific characteristics – including agglomerated instant products.

The current range of solutions facilitates the design of complete production lines that enable customers to directly give their end products the desired characteristics. This is done by subjecting the raw materials and products to mechanical, physical and/or chemical treatments.

## **PROPERTIES OF INSTANT PRODUCTS**

Powders that are intended for specific applications can be agglomerated to improve certain properties. A prime example is the use of this technique to improve the characteristics of instant products, and in particular the solubility of the powder in a liquid (e.g. for the preparation of instant beverages).

Agglomeration can also be used to improve the powdered product's flow properties and reduce dust. A dust-free, non-dispersible product reduces the health and safety risks and prevents technical problems arising in production processes.

Good flow properties are very important for the dosing of instant products in drinks vending machines. Furthermore, material with good flowability is easier to handle in production processes, easier to transport and easier to unload from silos.

## **SEPARATION**

Another major reason to agglomerate products is to prevent separation after mixing. This maintains the quality of the product mixture until it reaches the end user. Thanks to a uniform and homogeneous product, it is also possible to guarantee a consistent bulk density, which is necessary to ensure that the packaging units are filled with precisely the desired volume each time. Agglomeration results in a better product quality that is appreciated by end users and consumers alike.

## **GRANULATION TECHNIQUES**

Once the desired characteristics, properties and composition of the granulate have been determined, the next step is to identify the optimal production process. A variety of granulation technologies are available, including for example granulators, pellet presses, extruders, spray dryers and the Hosokawa Flexomix.

These methods vary in terms of the particle size range, the particle shape and other product properties they can achieve. When good instant properties are required, the Hosokawa Flexomix is a very popular choice. Another advantage of this system is that it produces dust-free granules with excellent flowability.



➤ *Agglomerated gravy powder*

## **HOSOKAWA FLEXOMIX**

The Hosokawa Flexomix is a compact system for the continuous mixing and agglomeration of powders. It produces particles with a raspberry-shaped structure, and a typical particle size of 0.2 to 1.2 mm.

Depending on the application, the capacity can vary from 50 to 25,000 kg/hour. A dosing feeder ensures that the system is fed with a controlled supply of powders and liquids. Liquids and powders undergo intensive mixing in the Hosokawa Flexomix, causing particles to adhere to one another to form granules.

The granule size is determined by the ratio of powders to liquids and the process conditions. In most cases the granules pass into a fluid bed dryer and cooler, after which they are sieved and then packaged.

## **SELF-CLEANING**

The Hosokawa Flexomix comprises a vertical rotor with mixing elements rotating at high speed in a flexible mixing chamber.

To prevent product build-up inside the mixing chamber, the flexible wall is constantly massaged from the outside. This ensures that the mixing chamber is kept clean – a prerequisite for process stability and a consistently high product quality. The fill rate of the mixing chamber is just a few percent, and the product remains inside it for between 0.2 and max. 1 second.

The rotor, mixing elements and flexible chamber can be made of various materials, depending on the specific application. The quantity and positioning of the mixing elements is also aligned with the relevant application.

The Flexomix is unique because it enables several different powders and liquids to be processed in a single step. The energy consumption can be precisely controlled by regulating the rotor speed and is minimized thanks to the short mixing time. The system offers easy access for inspection and cleaning purposes.

## **TEST CENTRE**

Hosokawa Micron's test centre in Doetinchem provides access to several types of batch mixers and dryers ranging from 1 to 6000 litres in capacity as well as various types of direct and indirect drying systems.

There is also a complete agglomeration pilot plant. Besides a Flexomix, this comprises liquid dosing stations, powder feeders and a fluid bed dryer and cooler.



➔ **FROM R&D TO  
PRODUCTION PHASE**

# PLENTY OF REASONS TO GIVE US A CALL



## Combined advantage

The Hosokawa Group has several technology centres, each expert in one or more specific powder processing technologies. Combining this knowledge gives you the benefit of having just one supplier and contact.



## Vast experience

Hosokawa has decades of experience in providing process solutions for instant powder production. We have references all over the world, including the biggest names in the industry.



## R&D/test facilities

Hosokawa has extensive research and test facilities in the Netherlands, perfectly outfitted to assist clients determining what the best system solution is for their specific process.



## Worldwide service

Hosokawa has a very responsive and smoothly operating service department. Our Service Team carries out repair and maintenance services onsite or in one of our fully-equipped workshops.

## More information

For detailed information and equipment and system specifications, please contact our office or visit us online.



**HOSOKAWA MICRON B.V.**

**HOSOKAWA MICRON B.V.**

Team Food  
Gildenstraat 26  
7005 BL Doetinchem  
Netherlands

tel. +31 314 373 463  
food@hmbv.hosokawa.com  
**www.hosokawamicron.nl**