

Fluidized bed spray granulation

Directly from liquid to granules



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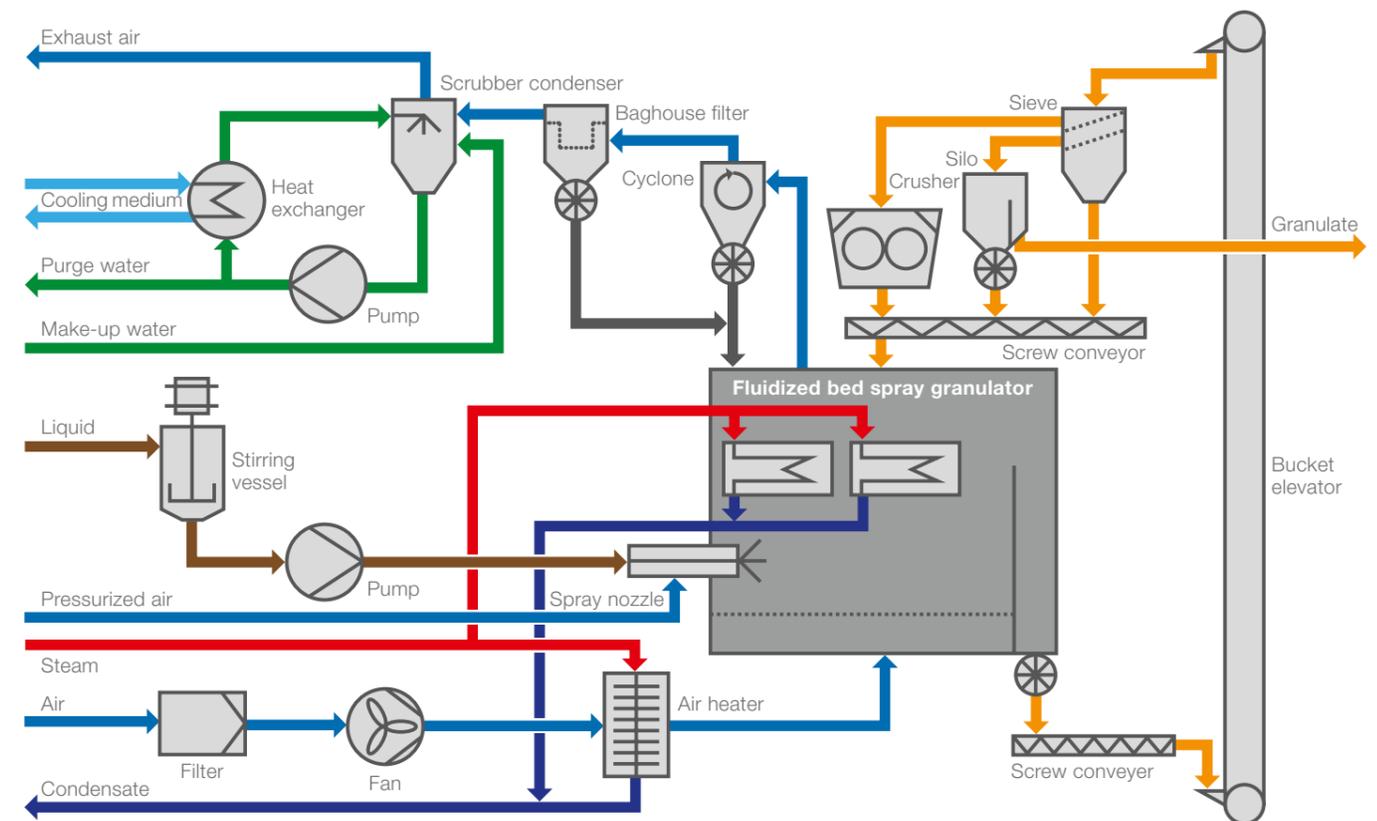
Experience makes the difference

ANDRITZ SEPARATION was among the first to introduce fluidized bed technology for use in industrial drying. We have been focusing on development of tailored process solutions for our customers since the early 1960s. With our experience and target-oriented development of process solutions in our pilot plants, we are able to provide you with the optimum solution for your process at any time. Drying and granulation processes can be combined perfectly in a fluidized bed dryer. The usual processing lines, such as evaporation, crystallization, dewatering, granulation and drying, can be replaced by a single piece of equipment. The resulting granular material is produced directly from a liquid. The feed product is sprayed into the fluid-

ized bed by a suitable spray nozzle. The droplets generated strike the granules in the fluidized bed layer and moisten their surface with a thin liquid layer. The solvent contained in the liquid is evaporated by the energy of the fluidizing gas, while the solid portion remains on the particle surface. Multiple and uniform wetting in a well agitated, fluidized layer results in a stable, multi-layer granule that grows continuously in layers like an onion.

Solidification processes work in a similar way. In this case, the fluidizing gas is used to remove the solidification heat. If the binding forces between the sprayed primary particles are strong, adequate steps are taken to control the particle size within a

narrow range. This can be achieved by recycling dust from the exhaust air treatment system or by the feed product. The granulation system can also be operated in a closed gas loop, with inert gas and solvent recovery if sensitive or flammable products are to be processed.



▲ Typical process setup with external crushing

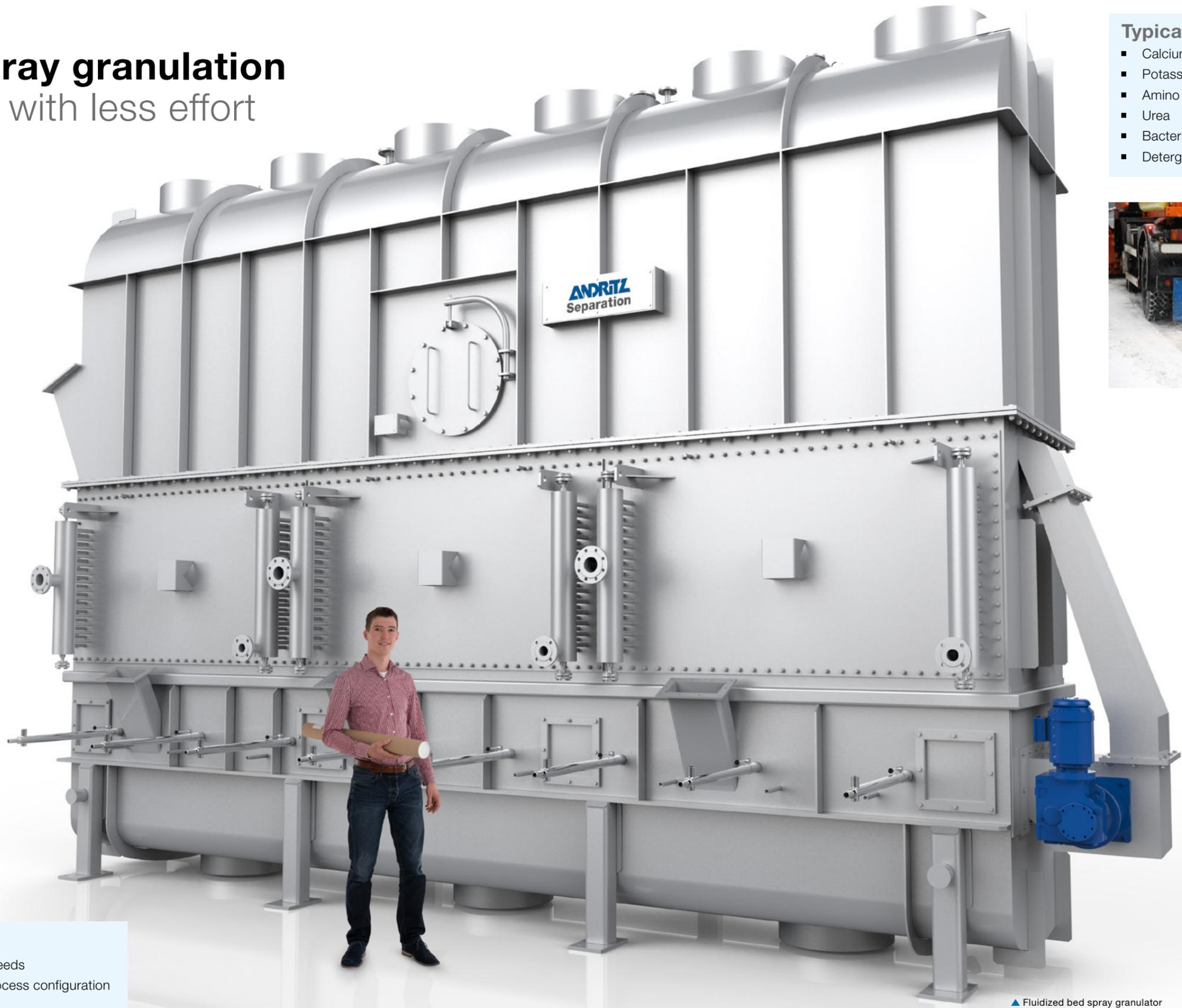
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Improved product with less effort

The purpose of spray granulation is to create a granular product with a defined structure, particle size, shape, and composition. Considerably higher product quality can be achieved compared to conventional processing:

- Close to spherical shape
- Dust-free
- High bulk density
- Good flow properties
- Narrow particle size distribution
- Low attrition during transport and packing
- Low caking tendency during storage
- Enhanced suitability for metered dosing

Delivering spray granulators to various industries already since 1980, ANDRITZ SEPARATION is one of the technology's pioneers.



Typical applications

- Calcium chloride
- Potassium carbonate
- Amino acids
- Urea
- Bacteria mass
- Detergent components



Our strength is your advantage

- Tailor-made systems to meet your particular needs
- Maximum energy efficiency from optimized process configuration
- Customized product quality
- Low costs over the entire life cycle
- Extensive test facilities to resolve your specific drying challenge
- Market leader in fluidized beds with incorporated heat exchangers

Complete systems for the following dryer types:

- Spray granulator as a directly heated unit
- Spray granulator with incorporated heat exchangers

▲ Fluidized bed spray granulator

Systems engineering

Innovative and safe



Safety

Many suspensions and granules contain organic components that are rated as combustible or explosive. No matter whether it is ATEX, other standards, or local regulations, a suitable safety philosophy is the key to a beneficial mode of operation for your plant in the long term.

Using their many years of experience in drying of explosive goods, our specialists will choose the optimum safety technology for your plant. Feasible options are pressure proof, shock proof plants with relief devices, suppression systems or inertized drying with closed gas loop systems.

Lab-scale and pilot testing

Our R&D center with its qualified personnel and integrated laboratory is at your disposal to develop your process or examine your specific tasks.

Our services include development, planning, design, manufacturing, and delivery of single key-components or complete systems, as well as supervising their installation and commissioning.

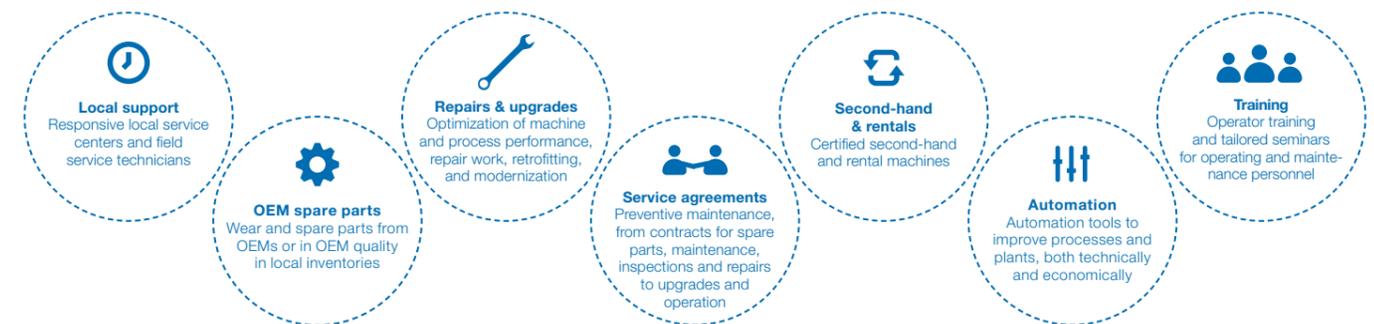
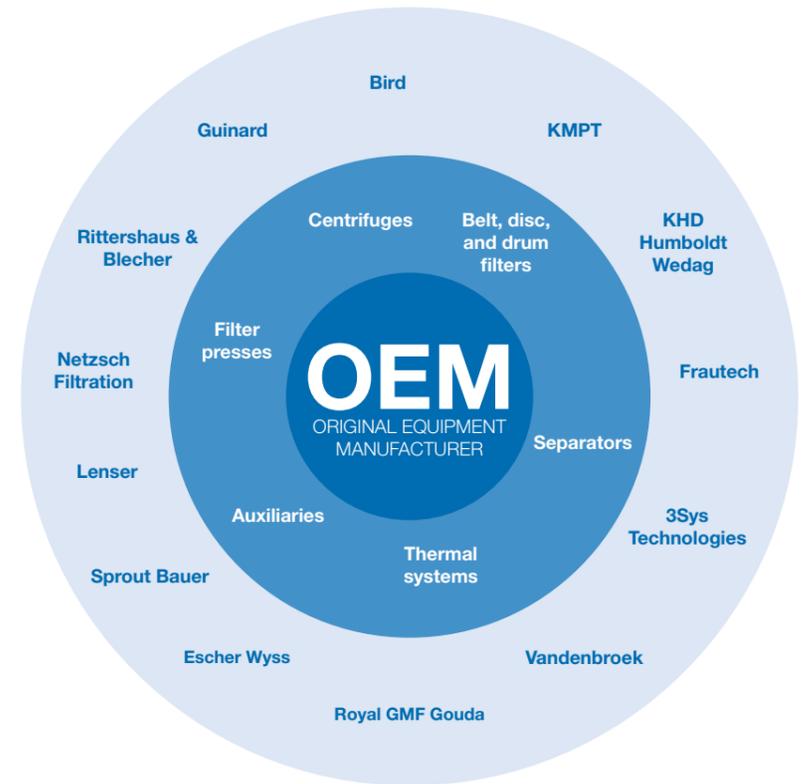


A world of service

Put our 150 years of OEM experience to work for you

With ANDRITZ SEPARATION, you gain access to one of the world's largest OEM manufacturers for solid/liquid separation systems, including such well-known names as Bird, KHD, Frautech, and more.

From initial consulting through to service agreements, plant optimization, automation, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations, while raising your overall production efficiency.



Wherever you operate, our network of 550 service specialists and global service centers ensures we'll always be there to support you for many life cycles to come. Let's sit down and see how we could take your operations to the next level.



No time left for downtimes or wrong decisions? For decades, we have been the preferred contact for companies in all bulk handling industries. We are listed by many licensors and offer a wide range of proven experience in fluidized bed processing.

No matter whether you are in the chemical, minerals, feed, or food industry – we have the expertise and answers to close the gap between your planning and being ready for operation – fast, reliable, and accurate.

Our target

We ensure your peace of mind so that you can be available for the more important things.

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