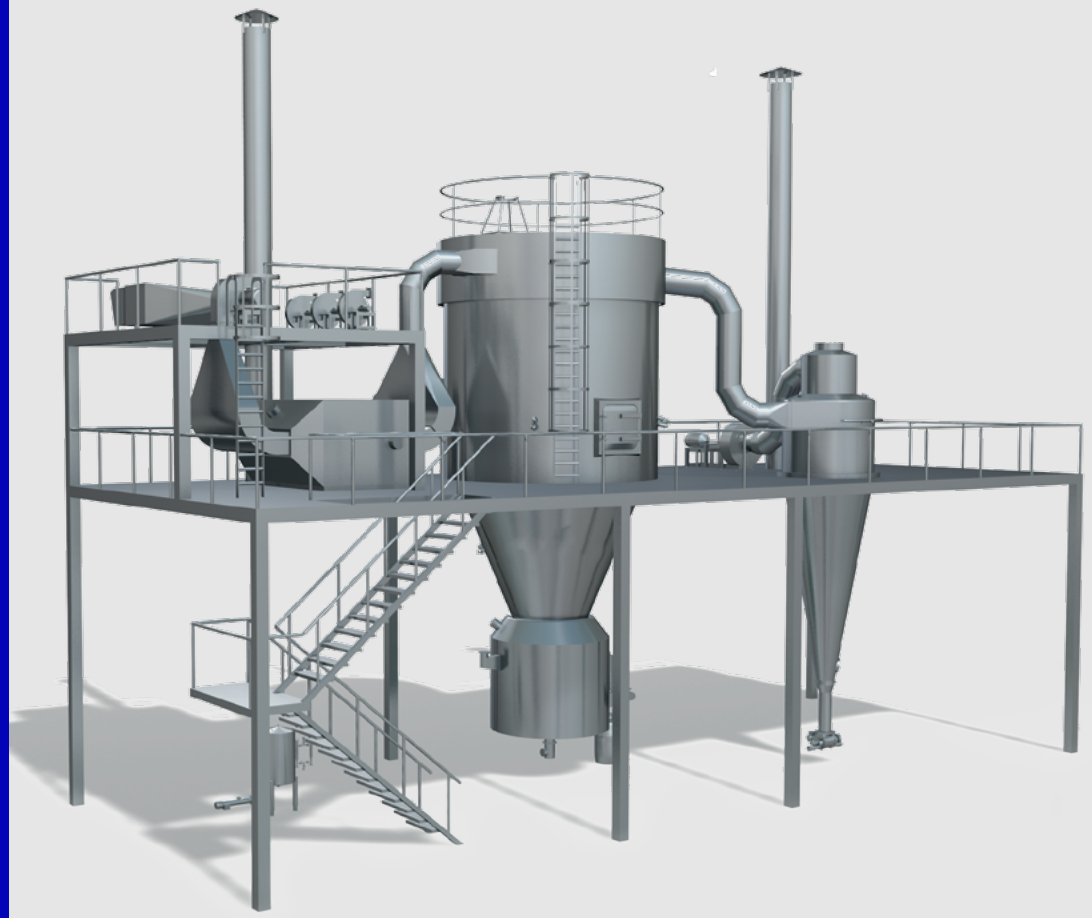
VERSATILE-SD® VERSATILE SPRAY DRYER, FSD®

Designed for food



Engineering for a better world.

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Expedite your time to market
GEA offers a range of spray dryers designed specifically for R&D, product development and small-volume production. As a pioneer in all aspects of spray drying, with more than 10,000 contracted and installed plants worldwide, we can help you to choose the most suitable equipment, assess each project on its individual needs, and tailor both the process and the spray dryer to match your specific requirements.

However, we also understand that not every plant needs to be custom built. That is why we have designed standard spray drying units that are flexible, compact and easy to install.

To optimize your process development projects and shorten your time to market, the VERSATILE-SD® (VSD) and the Versatile Spray Dryer, FSD® (VFSD) have been designed to fast-track product development without compromising powder quality. These units are perfect for both large and small companies that wish to launch a new food concept or produce small batches of highvalue products, saving time and cost on the design, purchase and installation of the spray drying unit.

Flexible, safe and easy to clean
Not only are the VSD and VFSD cost-effective, compact and easy to install, they are also extremely versatile.

Five sizes with five standard configurations and different exhaust systems provide the flexibility needed to produce different foods, flavors and other products at a variety of production rates.

Being modular, these standard units can be quickly reconfigured or expanded, offering fast turnaround times between product changeovers.

As with all GEA equipment, the VSD and VFSD are equipped with the ultimate in hygiene, safety and monitoring features, including optional clean-in-place (CIP) functionality.

Consistent and reliable
With quality control being a key concern, the VSD and VFSD have been developed to be reliable and consistent in delivering products of the desired quality.
The control system and HMI (interface) allow specific product and parameter settings to provide both repeatability and easy operation.

More than just a spray dryer
We help our customers to configure the right product recovery system and develop the right process for their product, assessing factors such as organoleptic properties and powder functionality.

We can also advise on plant configuration, auxiliary equipment and environmental aspects. Spray dryers can also be used for spray congealing applications.

GEA test centers are available for process development, tests and trial runs.

VERSATILE SPRAY DRYER, VERSATILE-SD®

The VSD spray dryer processes single-particle powder products. The flexible atomization system has a wide range of functions that atomize and convert a liquid feed into a fine powder according to your specifications.

Key benefits

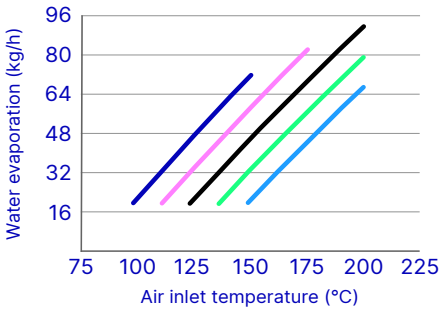
- Ready-to-use standard units for easy product selection,
- delivery and installation
- Available with five different exhaust systems
- Available in five different sizes with water evaporation
- capacities from 6 to 320 kg/h
- Easy to operate, clean and switch between batches
- Handles food products at low air inlet temperatures,
- producing a fine powder
- Explosion protection system
- Optional features include CIP, electrical air heat booster, etc.

All VSD configurations include the following: an indirect gas heater, a rotary atomizer, a swan-neck chamber and an exhaust system with the following options: cyclone, bag filter, cyclone plus cyclone, cyclone plus bag filter or cyclone plus scrubber.

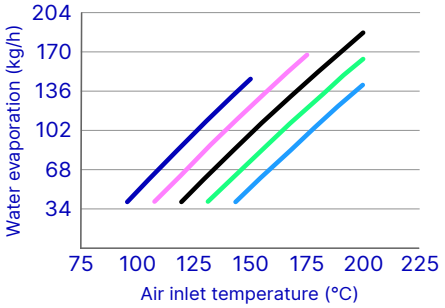
The VSD is available in five different sizes ranging from a VERSATILE-SD® size 6.3 to a VERSATILE-SD® size 80. We can also offer smaller-scale units such as our trusted MOBILE MINOR® and PRODUCTION MINOR®.

VERSATILE-SD®	VSD-25	VSD-50	VSD-80
Water evaporation capacity (kg/h)	20-90	40-185	60-320
Typical mean particle size (µm)	20-100	20-100	20-100
Space requirements L x W x H (m)	13 × 6 × 11	14.5 × 6.7 × 12.5	19 × 7.5 × 14.5

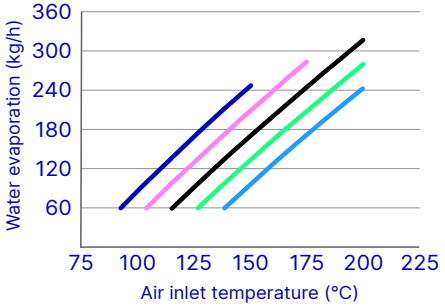
VSD-25 co-current atomization



VSD-50 co-current atomization

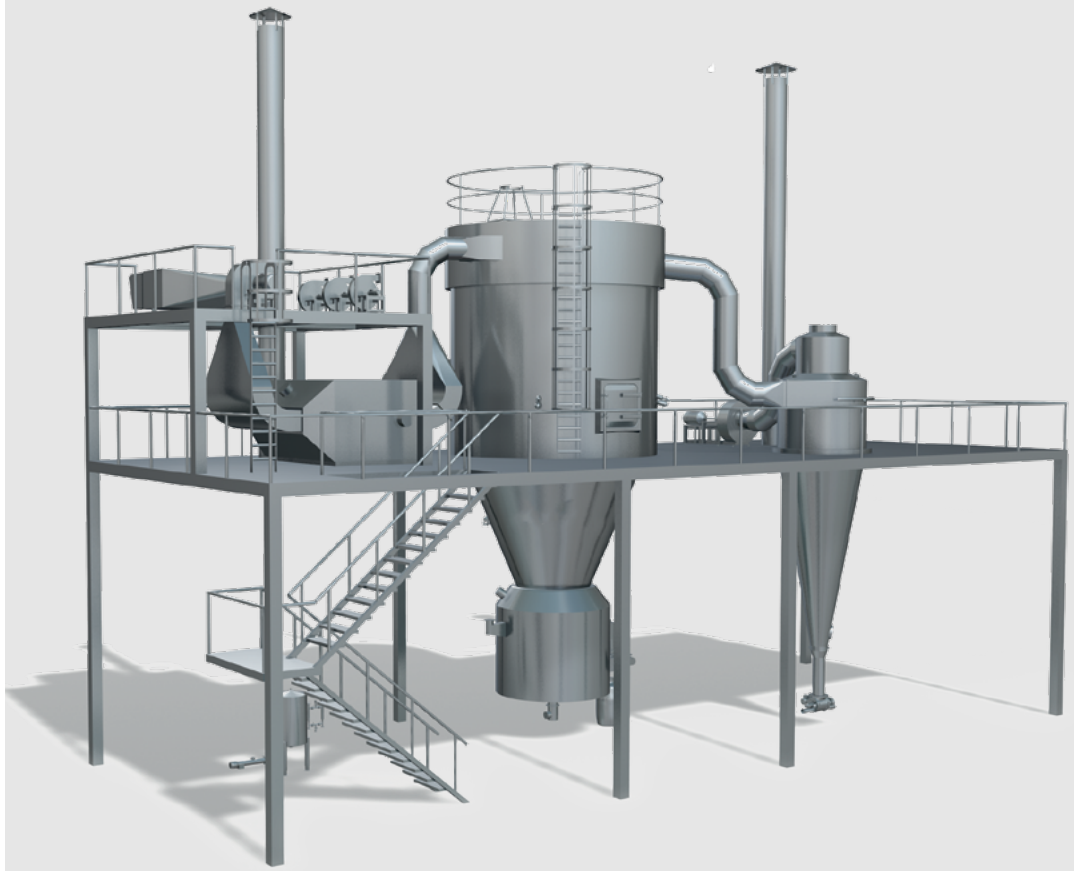


VSD-80 co-current atomization



Air outlet temperature

- 70 °C
- 80 °C
- 90 °C
- 100 °C
- 110 °C



* VSDs can be configured for temperatures above 200 °C

VERSATILE SPRAY DRYER, VERSATILE-FSD®

The VFSD spray drying plant is a multistage dryer with an integrated fluid bed under the drying chamber. By combining spray drying and fluid bed technology it provides the same performance as a dryer with external fluid beds – but with a much smaller footprint.
The VFSD dries product into larger agglomerated particles. Drying and agglomeration take place in the same chamber producing coarse, dustless, free-flowing powders. This technology is particularly appropriate for sticky, hygroscopic and/or heat-sensitive food applications.

Agglomeration improves the powder's ability to flow and disperse without forming lumps. The fluid bed process can also be used to improve a powder's bulk density or particle size to make a more homogeneous product with a lower segregation tendency.

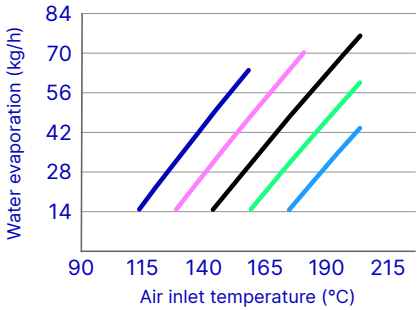
Key benefits

- Ready-to-use standard units for easy product selection, delivery and installation
- Available with five different exhaust systems
- Available in six different sizes with water evaporation capacities from 4 to 265 kg/h
- Easy to operate, clean and switch between batches
- Handles foodstuffs to produce large agglomerated powder particles
- Explosion protection system
- Optional features include CIP, electrical air heat booster, etc.

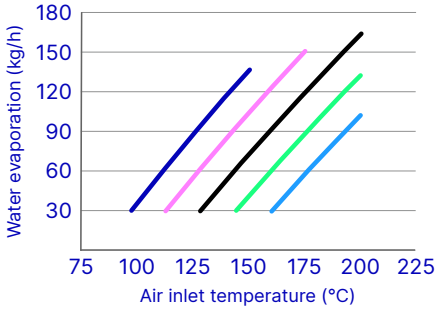
All VFSD configurations include the following: an indirect gas heater, pressure nozzle atomization, a chamber with an integrated 'wraparound' static fluid bed for gentle drying and cooling prior to powder discharge and bagging, and an exhaust system with the following options: cyclone, bag filter, cyclone plus bag filter, cyclone plus cyclone or cyclone plus scrubber.
The VFSD is available in six different sizes ranging from a versatile FSD® size 4.0 to a FSD® size 80. We also offer the smaller-scale FSD MINOR® for R&D purposes.

VERSATILE-FSD®	VFSD-25	VFSD-50	VFSD-80
Water evaporation capacity (kg/h)	15-77	30-165	40-26
Typical mean particle size (µm)	100-250	100-250	100-250
Space requirements L x W x H (m)	13.5 × 6 × 11	16 × 6.7 × 12	19 × 7.5 × 13.1

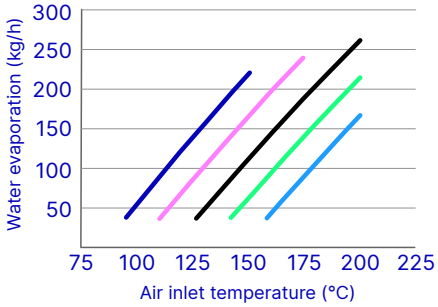
VFSD-25 co-current atomization



VFSD-50 co-current atomization

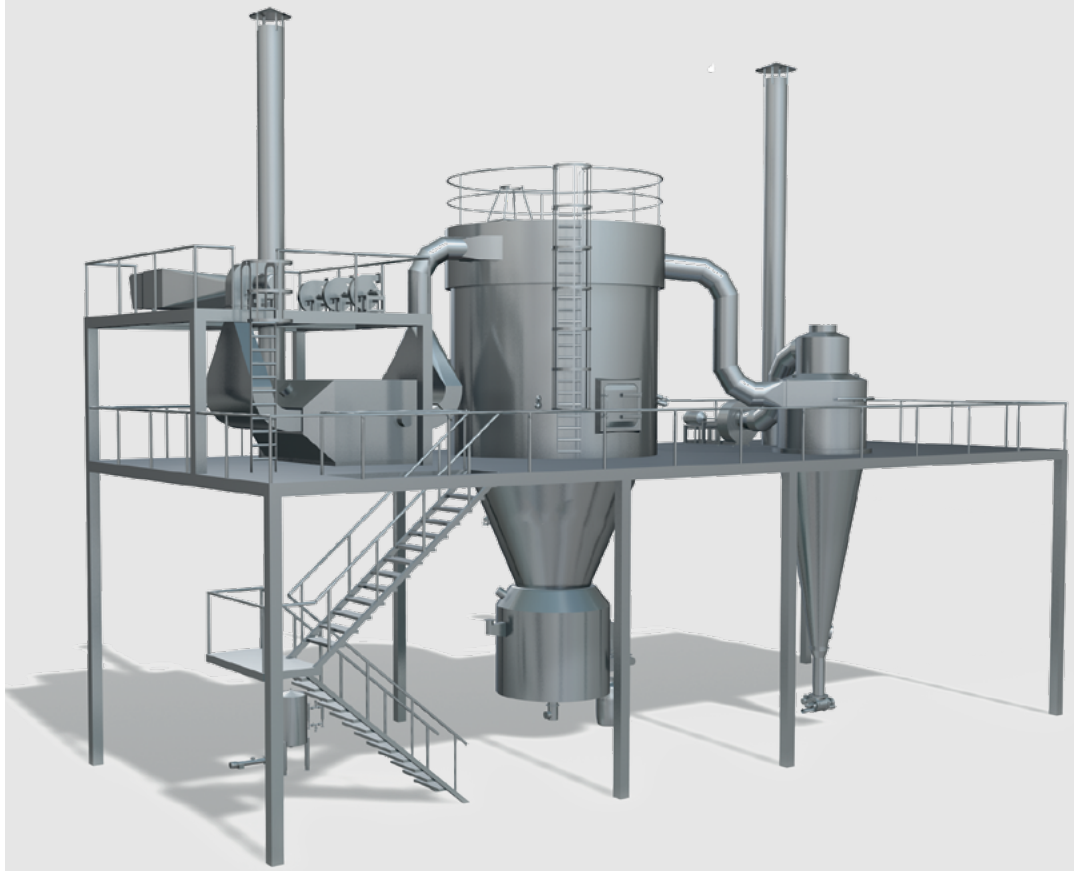


VFSD-80 co-current atomization



Air outlet temperature

- 70 °C
- 80 °C
- 90 °C
- 100 °C
- 110 °C



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EN 07/2024