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AN SPX BRAND

Anhydro Spin Flash[®] Drying



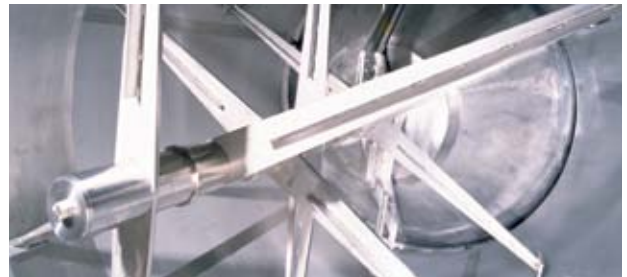
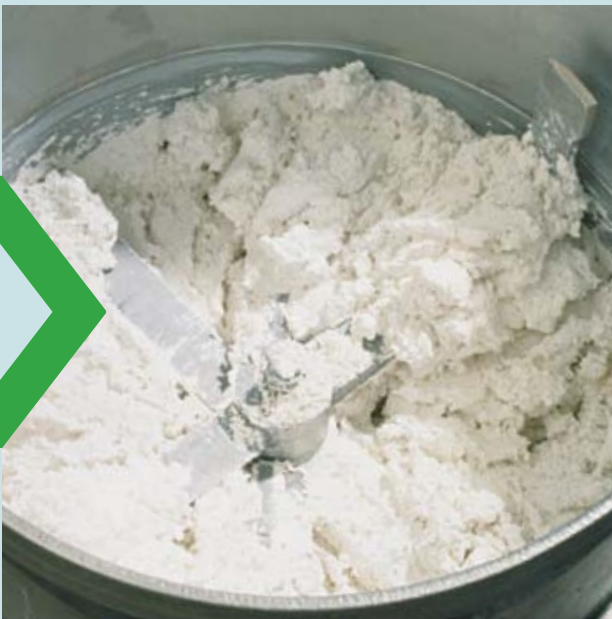
SPX[®]

Faster and more Cost Efficient Drying

Developed and pioneered by SPX Flow technology Danmark, Anhydro Spin Flash® drying technology is a patented process, widely adopted by industrial customers all over the world.

Anhydro Spin Flash® drying solutions are designed for continuous drying of cohesive and non-cohesive pastes and filter cakes, as well as high-viscosity liquids.

Anhydro Spin Flash® drying solutions are available with capacities ranging from a few kilos up to 40 tons powder an hour.



Typical applications are:

- organic chemicals
- agro chemicals
- inorganic chemicals
- pigments and dyestuffs
- pharmaceuticals
- ceramics
- food, dairy and feed products
- waste products



Anhydro Spin Flash®



The continuous drying process offers 10 decisive benefits.

- High drying efficiency providing low energy costs
- Direct drying with no initial diluting
- Continuous processing with short processing time
- Low operator overheads and minimum maintenance costs
- Precision-controlled residence time enabling high temperature drying
- Precision-controlled particle size

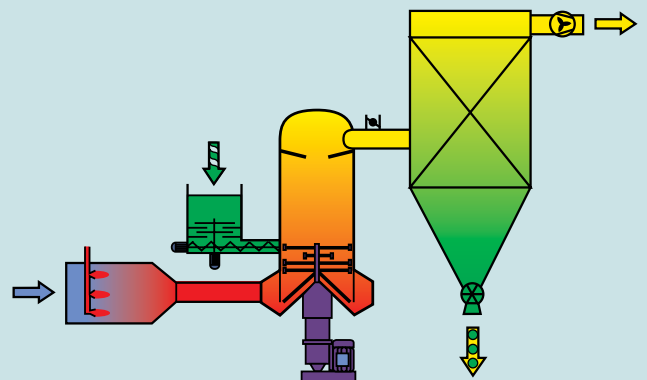


- Very fine powder production eliminating requirement for milling
- Limited space requirements
- High-pressure, shock-resistant chamber for safe drying of flammable products
- Available in FDA and cGMP compliant configurations



Spin Flash® flow

- | | |
|--|------------------|
| 1 Feed vat | A Product inlet |
| 2 Air heater | B Air inlet |
| 3 Drying chamber with rotor and classifier | C Air outlet |
| 4 Bag filter | D Product outlet |



Anhydro Spin Flash[®] Dryer

The main components of an Anhydro Spin Flash[®] plant are a feed system, the patented drying chamber, and a bag filter.

Feed system

The feed system consists of a feed vat, where a discontinuous flow of product is buffered and fragmented by an agitator prior to continuous drying. A variable speed feed screw (or pump in case of fluid feed) forwards the product to the drying chamber. Different types of screw designs are available for different feed characteristics.

Drying chamber

The rotor at the conical base of the drying chamber fluidizes product particles in a drying-efficient hot air flow pattern, in which any wet lumps are rapidly disintegrated. Hot air is supplied by a temperature-controlled air heater and speed-controlled fan, entering the drying chamber tangentially in order to establish a turbulent, whirling air flow.

Airborne fine particles pass through a classifier at the top of the drying chamber, while larger particles remain in the air flow for further drying and powdering. The drying chamber is rigidly designed to withstand pressure shock in the event of a dust explosion of flammable particles. All bearings are effectively protected against dust and heat.

Bag filter

Powder from the drying chamber is collected at the base of the bag filter, while the air flow passes out of the system at the top via an exhaust fan.

Drying parameters

The important parameters are solids content in the feed material, drying temperature, and air velocity. These parameters are determined by the nature of the product and the desired powder density, moisture content, particle size, etc. Typical air inlet temperatures are between 150 - 700°C, while outlet temperatures are determined by the required powder moisture content.



Available Plants



The drying chamber is available in standard sizes ranging from 200 to 2,500 mm diameter, and as a small-scale plant. Standard material of construction is stainless steel. Optionally, the drying chamber can also be supplied in Hastelloy or other corrosion-resistant materials. Drying chambers for inlet temperatures above 500°C feature special, heat-resistant stainless steel air distributors.

Small-scale, ready-to-install Anhydro Spin Flash drying plants are available for research purposes and small-scale production. They are simple to operate and dismantle for cleaning.

- Continuous process with short processing time for higher yield
- Complete temperature and speed control for optimum drying and minimum residence time
- Special feed agitator and screw conveyor
- Drying chamber with patented inverted conical base and rotor system for high drying efficiency and product protection

Plant type	Chamber diameter (mm)	Total height (m)	Floor space for total plant (m ²)	Max. water evap. cap. (Kg/h)
47	200	1,7	2,5	40
51	315	4	15	120
53	400	9	18	220
55	500	9	24	350
57	630	9	30	500
59	800	9	36	750
60	900	9	45	1000
61	1000	9	56	1300
62	1120	11	70	1700
63	1250	11	85	2200
64	1400	11	105	2800
65	1600	11	130	3500
66	1800	11	150	4400
67	2000	11	170	5500
68	2240	11	195	6500
69	2500	11	225	7800

Customized Technologies

SPX has the equipment, experience, and expertise to provide you with an end-to-end processing solution, tailored for your specific needs.

Closed circuit systems

The Anhydro Spin Flash drying system is available either as a closed circuit system using the low-oxygen (self-inertizing) principle, or with an external inert gas supply such as nitrogen. The low-oxygen option eliminates dust explosion hazards, while the nitrogen-based system is recommended for drying solvent-based materials, as it enables complete recovery of the solvent.

Intelligent process automation

State-of-the-art automation systems are available for Anhydro Spin Flash® plants, enabling fully automatic control, process optimization, data logging, traceability, and maintenance scheduling.



Special design features for the pharmaceutical industry

Plants complying with FDA and cGMP requirements are supplied with an Anhydro Spin Flash® drying chamber incorporating a number of special design features. These include shaft entry with a barrier, a flange assembly and sealing, inspection door gaskets, easy disassembly, and a rotor top cover.

Partnership and Collaboration



SPX is committed to help customers all over the world optimize quality and yield at all times from their Anhydro Spin Flash® drying plant.

Finding the best solution for you

Our aim is to help you find the best solution for your long-term needs. We offer a close partnership based on personal commitment and documented Best Practice from the initial needs analysis and planning stage until the end of the service life of the solution many years later.

Together with you we analyze the available options based on your product and throughput requirements. If required, we can run pilot trials at our SPX Test Centre in Denmark. New products can be tested to analyze product properties in order to identify the best Anhydro Spin Flash® dryer design and process operating parameters.

we shall also assist you in defining the best technical solution to meet necessary environmental and safety standards such as the ATEX directive.

Full documentation submitted prior to installation and personal training provided during commissioning will ensure that your new Anhydro Spin Flash® process line is production-ready from the very first day.

Lifelong service and support

Our worldwide service organization is ready at all times to provide any necessary spare parts at short notice or to dispatch service technicians to rectify any problems, thus reducing unscheduled downtime to a minimum. SPX also offers a number of service agreement options, depending on your individual needs, and our process engineers are always available to provide application and development support.



Please visit
our website at
www.spxft.com
for more information

SPX Flow Technology provides a full range of Anhydro Evaporation and Drying equipment for the global dairy, food and beverage, chemical, healthcare and pharmaceutical industries. Focusing on flexibility and attentiveness to individual customer needs, SPX enables excellence at every point along the value chain as part of our commitment to our customers' success.

SPX acts as a strategic development partner for leading manufacturers all over the world. Through close collaboration with our customers, we promote the development of innovative concepts and optimization of existing processes, enabling customers to introduce new products into the market as quickly and as cost effectively as possible.



SPX[®]
WHERE IDEAS MEET INDUSTRY



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