

## FLUID BEDS

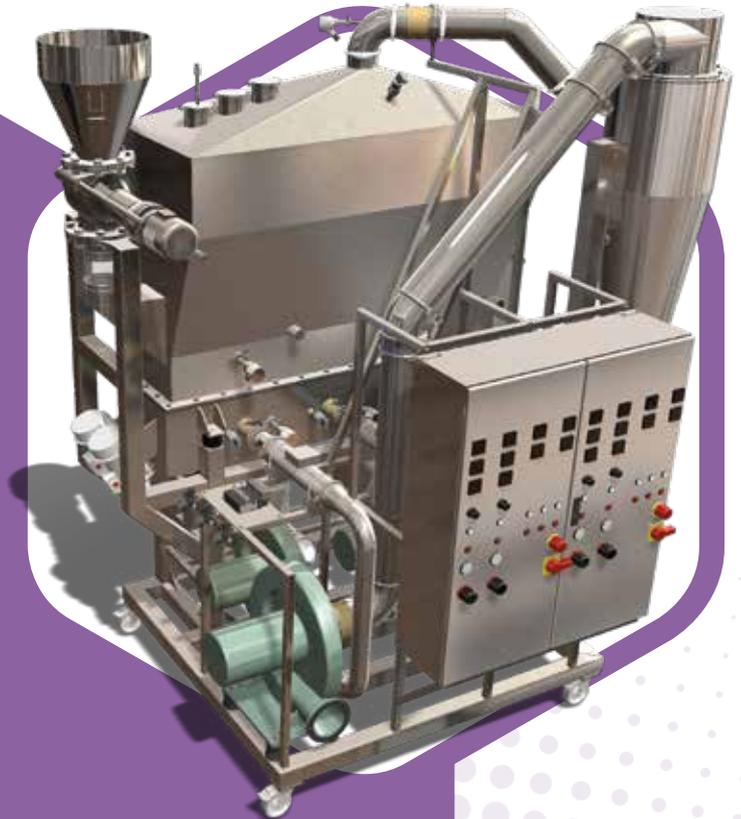
European SprayDry Technologies produce a complete range of fluid beds meeting the demands of our customer's for high performance and sturdy machines with a capacity to operate in the harshest environment with the widest range of functionality and producing the best quality material.

Plants come in a wide range of sizes from lab scale upwards in continuous, static or continuous static design formats.

Our extensive range of fluid bed products are designed in specific specifications to satisfy the rigorous requirements of the Dairy, Food Processing, Chemical and Pharmaceutical industries all of whom require differing variations.

Fluid Beds is the most versatile machine being capable of roasting, drying, blending, Agglomerating, Classifying, Cooling or Chilling with minimal changes to the basic design and allowing a combination of the functions to be undertaken simultaneously within a single machine. Fluid beds are very efficient due to vastly superior heat and mass transfer rates compared with comparable methods of drying such as band dryers. A fluid bed with the same duty can be up to one fifth of the size of a band dryer.

Specialist product designs can be supplied including closed inert circuit fluid bed systems for solvent and flammable material drying.





## Fluid processing solutions

Spray drying involves 3 fundamental processes; liquid atomisation, evaporation and separation/ collection of the dried product.

The introduction of vibratory forces on a continuous vibratory beds aid the movement of product. Vibrations are introduced at high frequency so that there is little visible movement of the machines during production, all vibrations are removed by the pneumatic air isolators.

Naturally free flowing materials are often processed on a continuous static fluid bed as they need less encouragement to travel through the bed, this machine is less expensive to manufacture.

For small production, development and testing of small batches our range of batch fluid beds are available, being easily assembled it also disassembles for cleaning, these machines are high suited to laboratories.

European SprayDry Technologies fluid beds are built within our audited workshops meeting clients specifications and stipulated finishes.

Machines are robust and designed for long production lives and often coping in diverse climates and harsh environments.

A wide range of options are available on all machines that include manufacturing materials, surface finishes, heat recycling, air filtration, air heating options, fine powder separation and environment protection.

Sanitary products for the food, dairy and pharmaceutical sectors of industry can be equipped for full Clean In Place systems.

Control systems are designed with our clients ensuring each system matches their personalised requirements with either hard wire panel control, touch screen PLC or PC control point.

The process involves inducing solid feed material into a curtain of air which creates a turbulence as it passes through the mass of solids creating a heat transfer rate between air and solids. This gives up to 50 times a greater heat transfer than that of a static layer and is equally suited to both small dense powders and large friable agglomerates.

Fluid beds are generally separated into an upper plenum through which the product passes and a lower plenum of air box which are divided by a perforated plate.

In drying applications moisture is driven from the product as it moves along the length of the bed, the rate of travel is controlled by weir plates controlling the depth of product.

As the moisture is removed the temperature of the product increases, to counter the temperature rise the lower or air plenum is split into sections. Air temperatures and flow can be controlled in each section minimising product exposure to heat.



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