## Fluid Bed Dryer manufacturers/ Fluidized bed dryer

A **Fluid Bed Dryer** is designed for fast and uniform drying of powders, crystals and medium sized pellets. The Fluid Bed Dryer finds application in Pharmaceuticals. A fluidized bed dryer (also called <u>fbd\_fluid bed dryer</u>) is a kind of equipment used extensively in the pharmaceutical industries to reduce pharmaceutical powder and granules' moisture content. Drying is essential for wet granules for compression into the tablet and modifying viscous and sticky materials' characteristics. Drying is commonly the last step in the unit process before compression into tablet form and packaging. **VJ Instruments** have many pharmaceutical instruments like <u>coating tablet machine</u>, <u>double cone blender</u>.

In fluidization process, hot air is introduced at high pressure through a perforated bed of moist solid particulate. The wet solids are lifted from the bottom and suspended in a stream of air (fluidized state). Heat transfer is accomplished by direct contact between the wet solid and hot gases. The vaporized liquid is carried away by the drying gasses. Sometimes to save energy, the exit gas is partially recycled.

Fluid Bed Dryer offers a lucid solution to drying of wet granules, crystalline or coarse materials. It utilizes the principle of passing the hot air at a high velocity through the bed of the material to be dried, thus causing it to fluidized.

The blower situated on the exhaust side of the dryer operates no negative pressure principle, which creates the induced draught and sucks in the fresh air into the dryer. A stream of hot filtered air is introduced from the bottom of product container containing the wet material. This container is provided with the air distribution plate and Dutch sieve. The air stream is passed through the bed of the material and fluidizes the product particles by creating the turbulence in the product container. Due to fluidization each particle gets surrounded by hot air, which leads quick & uniform heating and drying. Filter bags provided at the top prevent escaping of particles from the machine.

A **Fluid Bed Dryer** is designed for fast and uniform drying of powders, crystals and medium sized pellets.

We are among the most trusted firms, engaged in manufacturing, supplying and exporting Fluid Bed Dryer Machine. Designed in compliance with international quality norms, these products are manufactured using quality components and material, procured from the reliable vendors of the market. We also have R&D experts who conduct regular researches to improvise our Fluid Bed Dryer Machine.

Fluid bed dryer has a lot of advantages, but also not always the best for some clients. If you want to learn details about the fluid bed dryer, then you can scroll to the page bottom to check it out.

Fluid bed dryers. The average consumer has most likely never even heard of them. But in the world of bulk processing, fluid bed dryers have established themselves as dependable and multi-functional processors; capable of completing a variety of critical tasks. If you need to import a fluid bed dryer for your business, VJ Instruments is a leading manufacturer of Fluid bed dryer granulator, Fluid bed dryer manufacturers.

## The Importance of Dryers to the Pharmaceutical Industry

While it's true that fluidized bed drying can be used in a variety of industries, arguably it has its greatest impact on pharmaceuticals. By using a fluid bed dryer, the moisture content of pharmaceutical granules and powder can be decreased in a consistent manner. Fluid bed drying technology has replaced the traditional method of drying products in trays; the result of which has been considerably shorter drying times along with even drying conditions for a uniform final product.

Fluid bed dryers provide the best solution for drying many products, but especially products within the pharmaceutical industry. With the system, inlet air temperature can be controlled so that the correct amount of moisture evaporates from the surface of the granule. An inlet air temperature that's too high can result in a surface crust that prevents deeper moisture from being transported to the surface, delaying the drying process rather than accelerating it.

## Principle :

A fluid bed dryer is better known by name because hot air (gas) or ambient air is allowed to flow upward at high pressure through a perforated bottom of a vessel containing a bed of particulate solids or wet granules. The velocity of hot air is more than the granules/particles' settling rate by which they remain suspended in a stream of hot air. This condition is called a fluidized state. The hot air surrounds every granule/particle and completely dries them.

## Working :

The material to be dried is placed in a detachable vessel at the bottom of the dryer. The air is introduced from below through the prefilter, heated utilizing heaters installed therein. Simultaneously fan is also allowed to work. As the air velocity increases, the bed expands, and further growth causes turbulent motion of particles called fluidization.

The granules/particles remain suspended in the air stream. A state of pressure is reached on a later form of pressure at frictional drag on the granules/particles is equal to the force of gravity. The particles rise in the airstream due to the gas's high velocity; this condition is called a fluidized state.