Riddhi

PHARMA MACHINERIES

FLUID BED DRYER

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'RIDDHI' - introduces one of the finest "FLUID BED DRYER" unit providing compactness and conceptional principle of Air Fluidisation for drying granules, crystalline, coarse or similar materials in Pharmaceuticals. Fine Chemicals, Dyes, Food & Allied Industries.

The basic concept of the Fluid Bed System begins with a simple Drying unit to which several different optional packages may be added for conversion to a granulation or coater.

Process control system ranges from standard pneumatic logic to sophisticated computerized controls. Air handling equipments can vary from the basic compact prefilter, heater to system which provide complete control of the condition of the processing air. This higher technology of process involved many modern technologies and to match that RIDDHI introducing standard conventional Fluid Bed Dryer.

ADVANTAGES :
The conventional drying method for drying products in tray dryers is rather inadequate & troublesome. They also occupy large space & have very high & uneven drying times and also involved high labour input. To over come this problem RIDDHI made Fluid Bed Dryer which is the simple solution to dry the products.

SUITABILITIES :
This compact unit is suitable for drying granular, crystalline, coarse or similar materials in Pharmaceuticals, Dryer, Fine Chemicals & Food & Allied Industries. It is also possible to dry fine crystal or coarse materials in fluid bed dryers.

DESCRIPTION :
Latest improvement in design makes this unit truly GMP model for Pharmaceuticals industries & versatile in operation for other industries like food, dyestuff, chemicals & polymer industry. In GMP models, all the contact parts made out of S.S.304 / 316 material &are provided with isolated panel board. However with standard Fluid BedDryers for product containers, retarding chamber are made out of stainless steel materials S.S. 304 only & other parts from mild steel sheet.

BATCH SIZE
Batch size indicates weights of wet products.(inclusive of moisture). Our Model RDFD 30. can take batch size of 30 to 40 Kgs. of wet material. Similarly model RDFD 120 can process 120 to 135 Kgs. of wet material per batch. The weight of materials to be loaded per batch depends upon the bulk density of wet material.

OPERATION :
The wet material is introduced into the dryer as a batch of material in a product container which is provided with air distributor plate & clutch weave. Induced draught is created by blower & fresh air is sucked into the unit.

After filteration, clean air passes through the heating elements. This hot air then passes through the product containers, creating turbulance in the products & hence the products moves up and down in the product container. Due to this process, the heat transfer is quick and the product is dried fast without appreciable loss of heat. Filter bags prevent particles escaping from the dryer.

HEATING:
Fluid bed dryer can be supplied in electric heating, steam heating or hot water circulation systems. Electrically heated dryers are provided with electrical heating elements and are suitable to raise air temperatures by about 600 C (i.e from 300 C to 900 C). Similarly steam operated dryers are provided with steam radiator suitable to raise air temperature about 600 C to 700 C depending upon pressure of steam.Generally dryers bigger than RDFD- 60 are incorporated with steam heating system as it is more economical.

DRYING TIME :
The drying time depends upon various factors such as physical properties of material, moisture content, type of moisture (free moisture or water of crystallization), drying temperature etc. The crystalline prod-ucts can be dried faster than amorphous product containing same percentage of moisture at the same temperature. Generally pharmaceutical granules or crystals containing free moisture of about 20% to 25% can be easily dried in about 30 to 40 minutes at a temperature of about 800C. Certain crystalline materials containing about 40% of moisture can be dried in Fluid Bed
Dryer within 35 to 45 minutes.

IMPORTANT :
In case the product contains solvents or inflammable substances, it is essential that the Dryer is steam operated &provided with flame proof motor.

FLUID BED DRYER

Technical Specifications

Model	RDFD-15	RDFD-30	RDFD-60	RDFD-120*	RDFD-200*	RDFD-250*
Container Volume : Liters	50	100	220	430	590	730
Batch Capacity : Kgs	15-20	30-40	60-75	120-140	200-225	250-280
Heating Load : KW for Electrical Heating	9	18	36	60	--	--
Motor H.P	3	5	10	15	20	25
Drying Temp ^{0}C	50-80	50-80	50-80	50-80	50-80	50-80
Appx. Steam Comsumption Kgs/hr. (Steam pressure 3Kg/cm^2)	15	25	50	100	160	200

* Steam heated advisable.

NOTE :Due to continuous improvement in designs, dimensions & specifications are subject to chage.

RIDDHI PHARMA MACHINERY LTD.

Manufacturer & Exporters of Pharmaceutical Machineries

OFFICE: MUMBAI Om-Shivam Bldg.,2, Tarun Bharat, Sahar Rd, Andheri(E), Mumbai-400 099.Maharashtra, India.
Tel.: 91-22-2832 1332 / 2838 9432 Fax: 91-22-2838 2479 Res : 91-22-2683 3777, Mob: 98210 18579
Whatsapp : 919821018579 **Skype :** hiten.k.shah
E-mail: hitenkshah@hotmail.com/ hitenks@vsnl.com **Website:** www.riddhipharma.com
FACTORY : Riddhi Estate, Gulab Nagar, Opp. AEC, Amraiwadi, Ahemdabad-380 026. India.