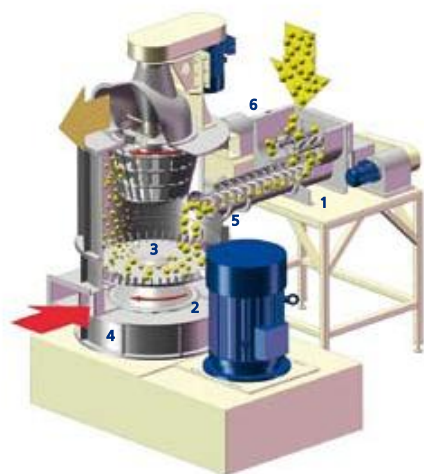


## Drymeister an alternative for spray drying

Staying competitive in producing a dry product also means saving energy. Not surprisingly the best way to save energy costs is to minimize the amount of water to be evaporated. For this there are several possibilities by using mechanical dewatering before thermal drying, like for example centrifuging or filter pressing. Depending on many factors like particle size, particle size distribution, particle shape and partial solubility the rest moisture and physical appearance after dewatering can vary considerably. The most common physical appearance after mechanical dewatering

varies between high viscous slurry and (crumbly) filter cake. When a flash dryer is the most suitable dryer for your application, a further selection can be made for the type of flash dryer, like spray dryer, ring dryer or Flash mill dryer like the Drymeister (DMR). The spray dryer has a long history and is therefore a classical choice in many processes. In a spray dryer a low viscous slurry is pumped to the top of the spray tower and is atomized either by pressure, pressurized air or a mechanical disc. This can limit the possibilities on the feed consistency. In some cases it is even

necessary to add water before it can be spray dried. Or in other words, the material is dewatered to a cake-like consistency, but in order to be able to spray the feed, the material has to be diluted with water. Of course it is easy to recognize that this is the ultimate form of energy waste. To get around this it is necessary to select a flash drying technology that is able to handle a feed material coming out of the mechanical dewatering step directly into the dryer. The DMR exactly fulfils this task.



### How is the DMR process working?

The wet material, is fed through different specially designed feeding systems (1) into the grinding (2) and drying section (3) of the dryer main body. The impact energy imparted by the grinding rotor disperses the wet material into very fine particles. A temperature controlled hot gas stream coming from the air heater (4) is drawn by the exhaust fan through the main body and fluidizes the fine particles in the grinding chamber. This condition guarantees optimal heat exchange and instant evaporation of liquid. The dried particles are conveyed with the gas stream to the top section of the dryer where a separator (5) classifies the

particles by size. Particles passing the classifier at the set cut point are conveyed with the exhaust air (6) to a powder air separating systems like cyclone, cyclone filter or cyclone scrubbers for example. A fluidized bed of product in the drying chamber insures a low level of adhesion of un-dried material at the inside wall of the drying chamber.

By changing process parameters like the classifier speed, the outlet temperature, the moisture content and the particle size of the end product can be adjusted and controlled.

### DMR saving time and energy

At this moment not only new drying processes are evaluated, also in existing processes where the spray dryer is normally used, extensive test programmes have proven that very often the DMR continuous flash mill dryer, is the smarter choice.

The DMR can economize the process based on its ability to handle high solid content feeds, saving time and energy!

In order to fully appreciate the effect of this, one has to realize that the moisture content of the feed is most commonly expressed in a percentage of the total weight. Meaning, at higher moisture contents the amount of water to be evaporated rises exponentially with small increases of the moisture percentages.

In other words:

In order to produce 100 kg dry end product with a feed moisture content of 60%, 150 kg of water has to be evaporated. If this feed moisture can be reduced to for example 20%, only 25 kg of water has to be evaporated.

Therefore it really pays off to investigate which drying process solution is the best for your product.



**Test our DMR against a Spray dryer for Free!**

In our test facilities we offer you the possibility of testing your product on our newest version of the DMR, to compare the results with the Spray drying process. The first day of testing is free of charge!