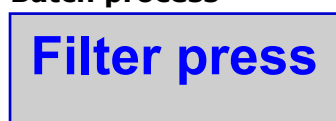
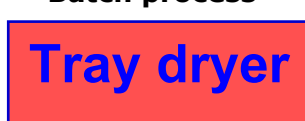


Case study:
Drying Minerals
Application :

Minerals such as Calcium Carbonate and Bentonite are applied as fillers in ceramic industries and as additives for chemical applications.

Often very fine products are required without any traces of agglomerates.

The **present production lines** for producing this type of minerals are usually combined processes with combinations of rotary dryers or flash dryers or **fluid-bed dryers** combined with a separate milling system. This implicates handling and transfer of product between the several process steps.

Batch process

Batch process

Continuous process

Solution:

Hosokawa Micron combines a special transfer system which is directly connecting the filter-press with the product inlet of the Micron Dryer model MDV-4.

Requirements product

Moisture content : below 3,5% W.B.
 Particle size distribution : Fine powder with 95% <75 µm

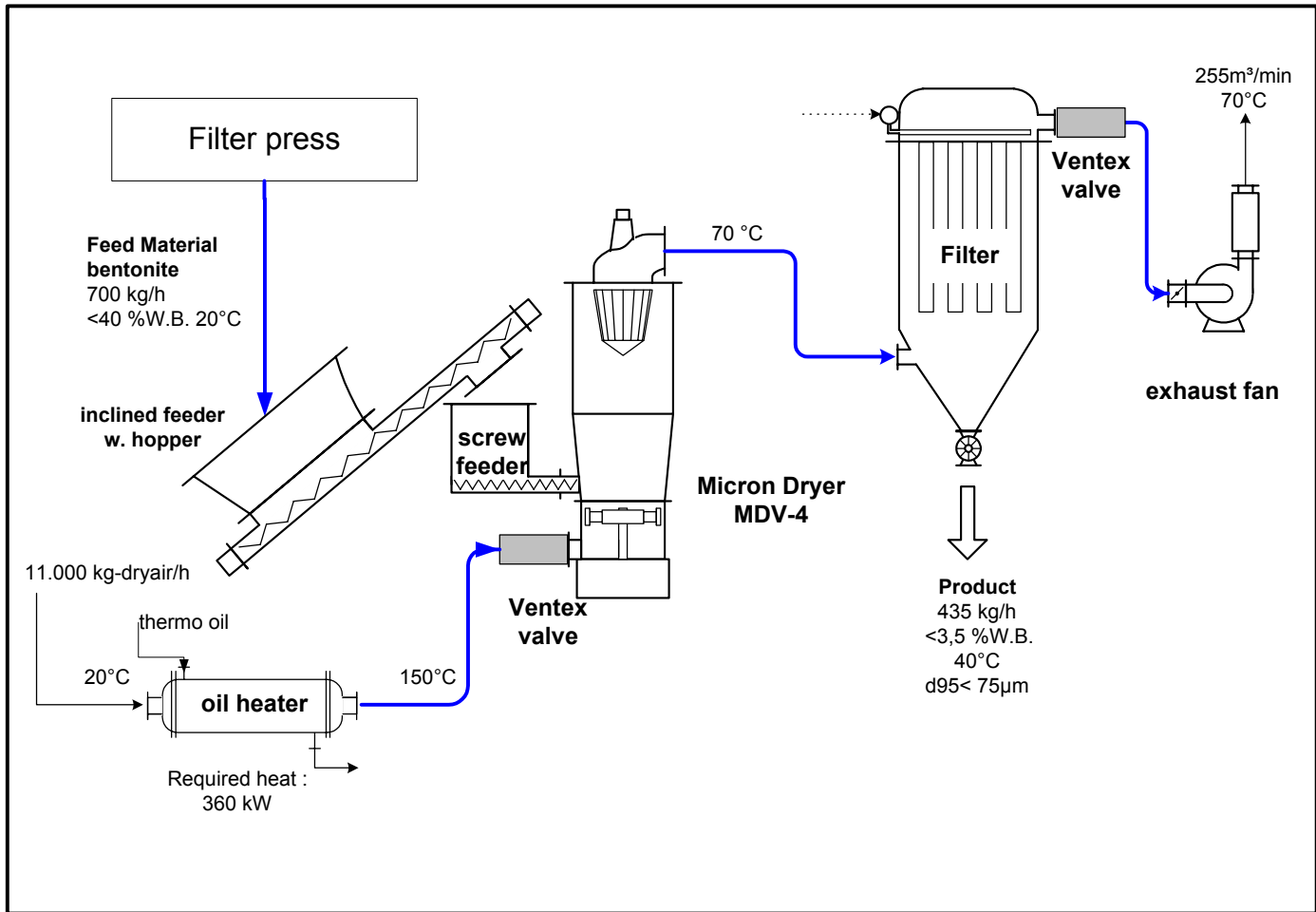
Explosion protection

In this case the Bentonite contained organic material and the system has been designed in explosion shock execution to hold a possible dust-explosion to pressures up to 10 Barg. Special explosion barrier valves at air inlet and outlet are protecting the environment and with this construction plant safety is assured.

Process data for this and other minerals applications

| Model Dryer | Feed material | Input capacity Kg/hr | Moisture content Raw material | Moisture content Product |
|--------------------|----------------------|---------------------------------|--|-------------------------------------|
| MDV-4 | Bentonite | 700 | 40% | 3% |
| MDH-5 | Chalk | 7000 | 20% | 1% |
| MDV-2 | Clay | 100 | 30% | 1% |
| MDH-3 | Diatomite | 2500 | 40% | 2% |
| MDV-5 | Kaolin | 5000 | 30% | 2% |

Typical flow sheet of Micron Drying System for minerals



Conclusion

The Micron Dryer is a **reliable** machine for drying and simultaneously grinding of minerals. It is a **very stable** process resulting in a uniform and dry product in a one step process.