

Why contact dryers at high temperatures?

Contact dryers can save a lot of energy and increase product quality.

They offer a particularly good solution for demanding high temperature applications in the process industry.

Whether it concerns the processing of minerals, the recycling of batteries and solar cells or the pyrolysis of biomass, end-of-life plastics and car tires: high-temperature processes have become indispensable in many industrial applications. The first condition is to meet high quality requirements of the product and the capacity to be achieved. However, it is increasingly important to reduce emissions and fully utilize energy and resource potential.

Conventional machines such as drying ovens or drum ovens reach their limits here because they use a lot of energy with high emissions and offer limited control of temperature distribution and process parameters. The dynamic drying process with contact dryers from BHS-Sonthofen, on the other hand, enables a more efficient treatment of, for example, drying filter cake, sludge or bulk materials, and can be easily integrated into various processes due to its compact construction.

Reactors and contact dryers such as those from BHS make temperatures up to 650 degrees Celsius possible. The machines are manufactured based on well-founded calculations according to the Finite Element Method (FEM) with special types of steel and gaskets that can withstand high temperatures and can therefore withstand high loads for a long time. Unlike conventional ovens, they offer precise control over the process time and the required product temperature through the constant homogenization of the product and the method of heating. The result is higher product quality with less product rejection.

In addition, ever-increasing energy costs and stricter emission standards are a major challenge in the process industry. Contact dryers, however, enable accurate dosing of the energy input due to the homogeneous temperature distribution. The machines are designed as a closed, insulated system, which minimizes heat losses, saves energy, reduces production costs and reduces emissions.

Contact drying also allows maximum flexibility. BHS-Sonthofen offers horizontal and vertical contact dryers that can be individually designed for the respective application and available space. Horizontal dryers can be used continuously or batch. Due to their intensive three-dimensional mixing, they enable high heat transfer, even with highly viscous materials. Vertical dryers for batch production offer the advantage that the shaft seal does not come into contact with the product, which is especially advantageous for products that are easily contaminated and with frequent batch changes. Both machine types can combine multiple process steps such as mixing, evaporation and reaction. So only one machine is needed and no additional systems and interfaces.

BHS-Sonthofen offers many testing options in its own test center in Sonthofen (D), which has recently been renovated and expanded. There, the company bundles all process technical expertise with the relevant technologies in one place. For process technology alone, BHS conducts approximately 200 tests per year in the areas of filtration, mixing, drying and reaction.

Conclusion: Overall, dynamic contact drying represents an energy-efficient alternative to conventional technologies for many applications that optimally meets the high demands in terms of product quality, energy efficiency and emission reduction.



