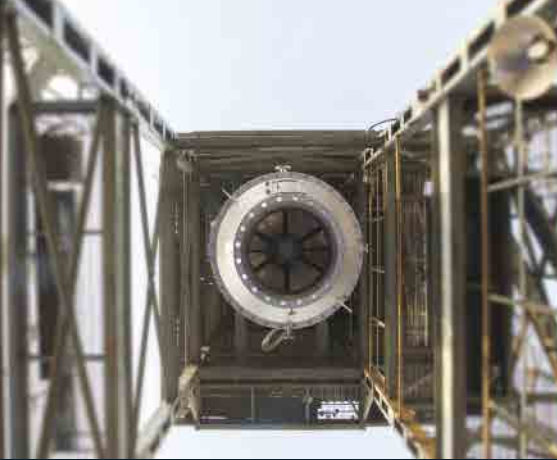




CASE STUDY

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# Energy efficient drying of a heat sensitive food product



# Substituting spray dryer with a continuous, Thin Film Dryer for drying heat sensitive food product

Case Study | Food Industry

A customer from Europe was not getting economical results from various options for drying of a valuable by-product. A large quantity of water was required to be evaporated to get the extremely heat sensitive product in a powder form.

Technoforce suggested a **Vertical Agitated Thin Film Dryer (ATFDV)**. The drying in this machine is completed in a very short time. Considering the hygienic application, the trials were conducted for several months for validation.

It was evident during the trials that due to the extreme heat sensitivity of the product, hot water would be required in the jacket for heating. Instead Technoforce used **steam under vacuum** to get the necessary low temperature without compromising on the capacity of the dryer. The capacity was improved almost by a factor of 2 by adopting this method.

The dryer construction was validated in series of steps. The design of welded parts and selection of specialized sealing materials was reviewed by experts from Europe. Surface finish of the contact parts was measured at various locations before the dryer was assembled. A proof test was carried out as specified in the **European Hygienic Standard** to check if the dryer gets cleaned in between the production cycles. All the tests were passed satisfactorily before the dryer was put on the actual feed stream.

**Indirect heating** resulted 50 % saving in energy costs as compared to spray dryers. Closed construction, operation under vacuum and avoidance of air as a drying media ensured the product met quality requirements.

[www.technoforce.net](http://www.technoforce.net)

## Our Expertise

Evaporation

Drying

High Vacuum Distillation

Extraction

Crystallization

Zero Discharge Systems

**TECHNOFORCE™**



**75 %**  
Less area required



**50 %**  
Less energy required