

# MIVAP™ TRAY-BASED FOOD DEHYDRATION TECHNOLOGY



## Field of Application

Microwave Vacuum Drying (**MIVAP™**) is a new and innovative volumetric heating system that is applicable for all products with water or dipolar solvent moisture to be removed. Due to the reduced pressure created by this technology, the boiling point of water is decreased to temperatures below room temperature resulting in a fast but gentle drying process with a large preservation of the inner and outer qualities of the original product.

Compared to the conventional vacuum drying processes, such as vacuum belt drying or freeze drying, this technology offers a wide range of interesting opportunities to develop new product qualities to be used in future production.

The **MIVAP™** microwave vacuum processor has been primarily developed for the final drying and puffing of conventional pre-dried fruits, vegetables, meat products and instant soup mixes. **MIVAP™** is also applicable for complete low-temperature drying and uses a patented tray-handling system.

## MIVAP™ Advantages:

- Extremely fast and gentle drying method
- Applicable for all product shapes and sizes
- Improves final end-product quality
- Extends operating hours by reducing cleaning efforts
- Offers superior process flexibility
- Reduces running costs and energy consumption
- Presents an opportunity for capacity extension due to the modular design
- Can establish new markets by creating innovative products

## MIVAP™ Tray-Based Design

Conventional vacuum dryers usually use one or more fiberglass belts to transport the product through the dryer. Batches of various products are fed into the vacuum chamber by means of a vertical double flap sluice. Liquid or pasty products are piped directly on to the belt(s). At the end of the belt the dried products are scraped off, falling into a vertical double flap sluice, which brings the products back to atmospheric pressure.

The **MIVAP™** process begins by placing multiple products into plastic trays outside the dryer under ambient pressure and then feeding the trays into the vacuum via a horizontal double flap sluice. Within the dryer the trays are transported continuously one behind the other, through each drying section before the product is discharged via a final horizontal sluice. The dried products are removed from the trays outside the plant.

## Attributes of the Tray System:

- No restrictions in regards to shape and consistency of the product
- No mechanical force on the product (preservation of its form)
- No contact of the product with parts of the dryer
- No transverse product contamination
- Micro-biological contamination of the product in the dryer is excluded
- Continuous and consistently high end-product quality
- Quick and easy product change possible (from tray to tray)
- Minimal cleaning efforts needed thus high efficiency

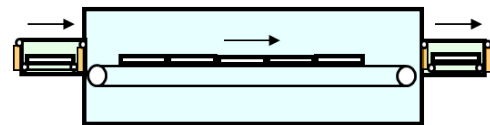


Photo Above: MIVAP™ Industrial Line for the production of instant soup