



## High shear mixing reduces the cost of mayonnaise production

### MIXING & BLENDING, PREPARED FOOD

The new range of high shear mixers for cold emulsion products from Tetra Pak gives the lowest cost per kilo of product on the market. How is this possible? We explore the key efficiency-enhancing aspects of the new mixer design.

It all begins with ingredients being pumped or drawn into the mixing vessel by vacuum. When a vacuum is used, this also de-aerates the product quickly and thoroughly.

The ingredients enter an optimally-agitated vessel, rather than being fed directly into the high shear mixer head. This speeds up oil or powder incorporation to about five times the normal rate – saving on [mixing](#) time and energy consumption, in both production and cleaning.

### Two-step mixing process

The new high shear mixer from Tetra Pak employs a unique two-step emulsification process, enabled by the patented Dynamic HS Mixing Head and agitator system.

The first step involves high flow and low shear to create a coarse emulsion, while the second involves high shear mixing to create a fine emulsion. Every detail of the mixing process can be precisely controlled – including speed, time and shear force – to achieve the desired product texture and droplet size, without any risk of over-shearing.

This means there is no need to worry about breaking down the emulsion or losing the functionality of costly ingredients like stabilizers.

### Flexibility

This mixing solution can handle all types of emulsified sauces and non-emulsified sauces, with or without particles. It can be set up to produce wide range of capacities, in both batch and continuous mode. It can handle all type of ingredients, such as powders, liquids, even particles and blocks.

### Guaranteed, consistent quality

With a high shear mixer from Tetra Pak, the product will always be properly mixed. This is thanks to the Dynamic HS Mixing Head mentioned above, which works in harmony with another innovation from Tetra Pak – the double-shaft agitator, whose counter-rotating blades enable good tank flow, resulting in a homogeneous product.

### Take advantage of simulation tool

Tetra Pak has developed [prediction tool software](#) to allow producers to make the most of their high shear mixer's performance. The prediction tool is a model that enables the fine-tuning of the mixing configuration and process parameters, according to recipes and requirements. By varying this palette of parameters, the output can be predicted and optimized – all at a negligible cost.

Creating new product recipes in a virtual environment, the prediction tool enables huge savings in the product development process.

### Make more... and reduce costs further

Switching from a traditional mixer to a Tetra Pak® High Shear Mixer with a batch production set-up can generate overall savings of 20-40% per kg product. But of course, the more you produce, the greater the savings.

The good news is, when it's time to scale up production, the design of the new range of high shear mixers makes it simple and cost-effective.

<b>Production capacities for different operating modes:</b>	
<b>Batch</b>	<b>3000-10,000 kg/hr</b>
<b>Batch Plus</b>	<b>4200-13,500 kg/hr</b>
<b>Continuous</b>	<b>8000+ kg/hr</b>

You can expand from Batch to Batch Plus production by adding an inline mixing head to the outlet stream of the mixer. This not only boosts capacity but also increases efficiency further by combining the emulsification and emptying steps.

To scale up to continuous production, the only new components needed are control valves and flow meters on the ingredient inlets and the product outlet. These increase capacity and further reduce the

production cost per kilo of product.

## Arrange a trial

The new range of high shear mixers for mayonnaise and other cold emulsion products from Tetra Pak gives you rapid mixing, economical use of ingredients, complete control and unprecedented flexibility.

If you'd like to continue making an existing product (one that your consumers know and appreciate) but with lower production costs – or if you'd like to try out some new recipe ideas with a view to expanding your product range, do contact us by clicking on the Tetra Pak button below.

## Contact Us

