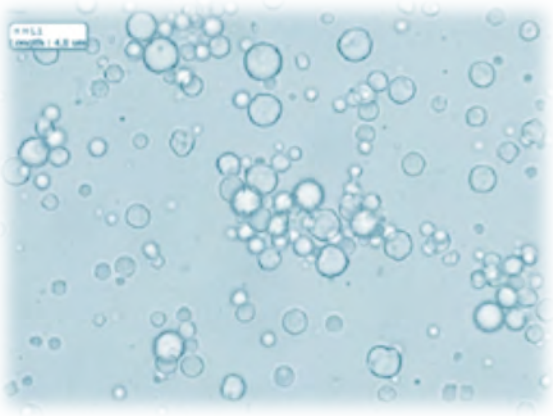
Rotocav

E-PIC Srl

Technology

Innovative Technological Solution

For The Food Industry



Homogenization

E-PIC Srl

Via XXIV Maggio 20
13888 Mongrando (BI)
P. IVA: 10341910015

E-mail: info@epic-srl.com

Traditional Process

Usually, in the food industry, high pressure homogenizers are installed to create stable emulsions, where the processed fluid is fed to valves or orifice modules under high pressure conditions. The high velocity and the rapid loss in pressure due to the expansion of the fluid in a very short time, increases the energy density that promote the creation of the desired stable emulsion.

Innovative Process With The Use of ROTOCAV Technology

The ROTOCAV technology exploits turbulence, cavitation and shear stresses on the dispers phase of the processed fluid (through single or multiple passages into the cavitation chamber), to create stable emulsions.

The generation and implosion of micro-bubbles, (that occur during cavitation phenomena induced by the ROTOCAV treatment) give to the processed fluid an energetic input able to disintegrate the drops of the dispersed phase, improving the stability and the uniformity of the resultant emulsion.

The ROTOCAV is a hydrodynamic cavitation system where the dynamic of the vapor bubbles of the processed fluid is controlled. During high speed rotation, rotor channels are periodically aligned with stator channels.

The processed liquid is accelerated in the radial direction and, flowing through the free channels, is subjected to cavitation or, in other words, it is subjected to the generation, growth and implosion of micro-bubbles in the processed fluid in a very short time. When the micro-bubbles collapse, high local pressure and temperature create the favorable conditions to generate micro-jets directed on the surface of the discontinuous phase, breaking any agglomerate and promoting the formation of homogenous dispersions.

Comparison (Traditional Systems vs ROTOCAV)

TRADITIONAL SYSTEM	ROTOCAV
High pressure and high operative costs	Low energy consumption: it works at atmospheric pressure
Less control of the droplets size of the disperse phase	High quality of the final product: high control of the operative parameters that affect the cavitation. It is possible to regulate the dimensions of the droplets by modulating the cavitation intensity and the rotor speed
Valve clogging problems	Absence of orifice of small dimensions; the fluid is forced to pass through free channels
Wear problems	The cavitation phenomenon is controlled and confined to the processed fluid, and the erosion of metal surfaces is avoided