



# QUADRO

## Application Note



### Process Cheese Production



#### INTRODUCTION

Process Cheese is a cheese product made by blending various natural cheeses in the presence of heat and emulsifying salts. Process Cheese delivers uniform flavor and texture which are uncontrollable variables in natural cheese. Process cheese is manufactured by macerating selected cheeses and transferring them to a cooking vessel where emulsifying salts are added to prevent separation of the fat during heat processing. Other ingredients such as salt, preservatives, cream, dry milk and whey may be added as desired. The mixture is heated to 74-82°C. The product is then packaged.

Quadro equipment has been successfully utilized to resolve a common problem faced by cheese manufacturers; particles not properly being mixed. Cheese manufacturers have approached Quadro to resolve the issue of detectable particles in the product ranging from 0.125" to 0.5" in their existing process

#### Quadro's Approach

The process cheese mix is prepared in horizontal blend tanks. Following the mixing process, the blend is transferred via a twin auger feeder to a positive displacement pump which feeds the Z Emulsifier prior to the cooker to ensure all dry or hardened particles are eliminated in order to create a smooth blend. Following the cooker, the cheese is packaged.

## The Quadro Approach

### Challenges faced when using conventional in-tank mixing technology

Quadro Ytron Z Emulsifiers are built to house up to 3 rotor/stator sets with extremely fine radial tolerances. The rotors and stators themselves are made with different slot widths offering the user the ultimate in flexibility and multi-product usage. Product enters the Z Emulsifier housing axially and must pass through 1 to 3 sets of rotor/stator elements before exiting. With no recirculation of product, a controlled, high intensity shearing is delivered equally to all fluid elements irrespective of product characteristics. The shear rate is dependent only upon the rotor tip speed and the rotor/stator tooling selection.

### Quadro Benefits

- Smoother texture as a result of improved homogenization of the fat globules and elimination of lumps.
- Single pass processing to ensure consistent product quality
- Viscosity control easily achieved
- Improved uniform color of the final product

