

# Universal Mixer for challenging demands

Mixing, coating, drying under hygienic conditions



Regardless of whether it concerns instant drinks, baby powder or blood bags – for all applications in the food, cosmetics or pharmaceutical industry – the highest requirements for quality and purity are to be met. Especially gaining a predefined quality of the mixture which can be reliably reproduced without any cross-contamination is of utmost importance.

A homogeneous mixture of edicts with varying characteristics such as chemical composition, particle size or aggregate status is required for all processes. Which at first glance sounds trivial may turn out as being very complex especially in mixes having components with very low concentration referred to the total batch.

As an example, mixtures for pharmaceutical tablets prove the importance of reproducible set concentration of the active ingredient referred to the substrate material, as every single tablet needs to have exactly the identical composition of the recipe components within a narrow tolerance.

## Transposition process

For mixtures consisting of solid components only the single particles have to change place with its neighbour as often as each component is homogeneously distributed throughout the mixture. Is the formulation containing liquid components, too, such transfer processes support the complete dispersion.

Maximum efficiency of the process along with very gentle treatment of the mixture are significant characteristics for the well-proved high efficiency MTI Universal Mixer model Uni tec®. These machines are operated in batch mode with volumes from 25 up to 2000 litres.

The mixing tool close to the mixer bottom provides at a three-dimensional mixing vortex a peripheral speed of 5 to 8 m/s, thus generated fluidisation expands the product volume, having positive influence on processes of transposition and mass transport. With cycle times of only 1 to 5 minutes and by mixing with very low specific energy demand of approx. 0.1 kW/kg highest

mixing quality can be obtained even for most sensitive products having ingredients with different properties regarding bulk densities or surface structures.

### WIP up your machine.

The design of the MTI Universal Mixer almost eliminates dead spots in the processing area. The customised machine layout considers typical requirements such as surfaces with a roughness depth of  $Ra < 0,8 \mu\text{m}$ , seals with FDA certificate or stainless steel in high qualities.

Hygienic design combined with possible semi-automatic or fully-automatic cleaning present a practice and application oriented mixing system. Individual WIP or CIP systems – adapted to the machine and specific customer needs – are offered by partner companies.

### What else do you need?

- For an increased grade of dispersion, breaking up of lumps and homogeneous distribution of liquids or viscous additives the Uni tec® can be equipped with one or more chopper units, relevant to your application.
- A dosing lance with spraying nozzle can be installed into the wall or the lid of the vessel to feed liquid additives directly into the mixing vortex. A special closing mechanism reliably prevents dripping of liquids and a contamination of the nozzle.
- Mixing vessel equipped with tempering jacket for operation with water, steam or oil, vacuum or pressure resistant design of the mixing chamber as well as ATEX design are typical options.
- Future-proof control systems, based on Siemens S7 Failsafe-Technology, in full conformity with the requirements of the machine guideline 2006/42/EG are equipped with latest communication technology Profinet/Profisafe and Remote Access.

### Think bigger

For more than 40 years batch sizes of even more than 2000 litres are successfully processed in our Horizontal Mixers MTI Flex®-line. Having an extremely large lid opening over the total length of the vessel this mixer offers essential advantages in handling and cleaning compared to common market products.

A mixing plant free from contamination combined with previously unrivalled flexibility is presented by our brand-new and patented Container Mixer Plant C tec<sup>PRO</sup>. To us mixing 4.0 is not a vision but applied technique of highest quality and rentability.



UT 250 for a food supplements application

### Find your way

In our newly designed R&D Center our complete mixer portfolio is available for running tests with your products. Using the most modern data recording systems we are able to develop the tailormade solution for your future success.