

Additive Compounds

Efficient mixing processes for stabilisers and masterbatches



Antioxidants, slipping agents, light and heat stabilisers, flame retardants and others – there are numerous additives to achieve specific plastic properties and a great variety of products. It is essential for the producer to strictly observe the proper composition of the formulation, as only precisely and carefully produced additive-compounds ensure a constant quality of the customers' final products.

Different processes are used today to prepare uniform and stable pre-mixes from individual raw materials.

Depending on their further treatment the components are either strictly mixed mechanically to a homogeneous blend without any thermal treatment or in an alternative process a guided temperature increase leads to a melting of certain components of the formula, acting as binding agents and ensuring a directed agglomeration of the complete mixture.

MTI offers the perfect mixer technology for all mechanical and thermal processes to prepare additive compounds with premium quality.

Extraordinary – MTI Uni tec® Universal Mixers

In face of extremely differing physical properties of the raw materials the mixing system has to guarantee an excellent compound quality even with different bulk densities and particle sizes in the sub-micron range. The newly developed MTI Universal Mixer of the Uni tec® series is having the optimum design for this challenge. Based on extremely short mixing times of 3 to 7 minutes for most formulations even small mixer sizes are capable to achieve high performances.



MTI Universal mixer Uni tec®

Mixing vessels, mixing tools and optional chopper systems can be individually designed in accordance with customers' needs. Thus a gentle homogenising also of most sensitive materials by a low temperature rise of max. 2 °C per minute of mixing time is possible. Spraying systems for fluids, a double jacket for temperature controlled process sequences as well as vacuum and pressure surge protected vessel designs present further layout options to realize even more complex processes in a reproducible way. As a matter of course all safety requirements are strictly and carefully observed, in particular this applies to explosion proof measures.

Frictional heat

To have an increased stability of the compound or to improve the dosing properties a rise of the bulk density might be necessary. Thus the temperature is increased through friction created by the mixing tools rotating with a peripheral speed of 25 – 30 m/s until those components of the mixture having a low melting point effect a bonding and densifying of the compound. In a second process step the material is cooled down to a temperature allowing further storing, packaging or processing.

The Heating-/Cooling Mixer Combinations of the MTI Flex®-line series are well proven for these applications for many years. For almost every required performance and formulation we present a tailor-made solution considering an optimum machine layout and mixing process.



Heating-/Cooling Mixer Combination MTI Flex®-line

Research and development

Convince yourself of our know-how by running tests with your products in our newly established R&D Center. Based on their comprehensive knowledge and experience resulting from handling diverse applications our engineers will provide the right process for your future success.