

High-efficiency mixer aspiration

Rise in processability and product quality – drop in costs



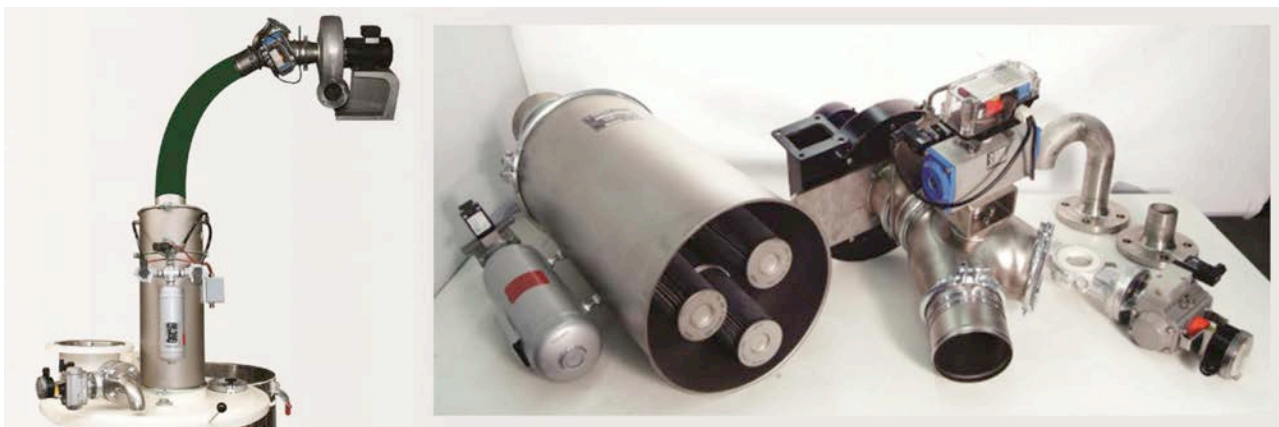
Massive dryblend deposits at vessel wall and lid due to insufficient dehumidification



Optimum mixer interior when using MTI technology

During the mixing process of plastic products with temperatures considerably above the boiling point of water even low moisture contents will lead to troubles within the production process. The long-time field-tested and well-proven aspiration system developed by MTI reduces the moisture content of dryblends during the mixing. The remaining non-critical content has no impact on the process parameters and the product quality. The system can also be used to upgrade mixers of earlier MTI lines or other brands.

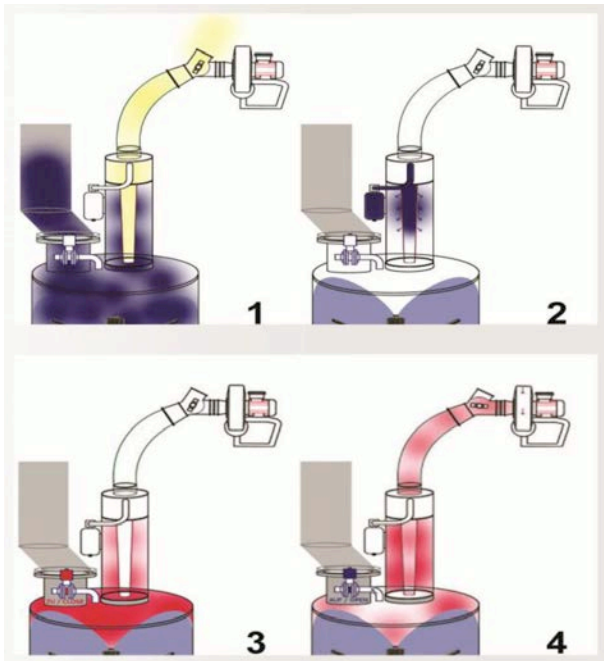
Constantly rising standards of process efficiency and quality require an efficient and uniform moisture reduction within the mixture. This particularly applies to the preparation of PVC recipes containing hygroscopic Ca-Zn stabilizer systems. Without the use of such an aspiration system massive deposits at all inner surfaces of the heating mixer, the walls of the cooling mixer, in the extrusion dies and calibration tools may develop, possibly leading to a reduced mixing quality, extruder failure and defects in the final product.



Efficient MTI dehumidification technology for utmost product quality

The right combination

MTI high-efficiency aspiration systems consist of perfectly matching components: special filter with hightech polymer membrane and pulse jet cleaning, changeover flap between ambient atmosphere and controlled exhaust air, ventilator, fresh air valve and optionally available process controls. MTI ensures the exact coordination of all system components individually adjusted to the process, thus providing the key to reach the necessary final dryblend moisture of down to 0.05 %.



Schematic functional diagrams:
feeding (1), cleaning (2), ventilation (3), active aspiration, ventilator and fresh air valve on (4)

In a temperature range below the boiling point of water when the melting of additives and the bonding of fines is almost finished the system already activates the ventilator and switches the changeover flap to active aspiration. This measure prevents the volatile recipe components, which start to evaporate at rather low temperatures, from accumulating in the mixing vessel and the filter housings, condensing at the cold metal surfaces and then building up massive deposits together with other recipe components.

The fresh air valve arranged at a certain distance from the point of aspiration opens time-delayed, thus creating a defined air capacity and providing a directed flow underneath the mixer lid. This way the humid air is extracted from the mixer interior. The filters used in this process ensure the required separation efficiency and combine good hydrolysis resistance with high moisture permeability at temperatures of up to 150 °C – unlike traditional filter materials rather blocking the evaporation. To enable the addition of further recipe components (such as TiO₂) during this process step it is possible to activate the aspiration pause function for a short time to prevent the fine particles from being extracted.

Some degrees before the final temperature is reached the aspiration system is switched back to atmospheric ventilation of the mixer vessel and the filter is cleaned once again, its residues thus being returned to the mixed product.

The MTI aspiration system saves time and money

Using the MTI aspiration system offers substantial advantages. An almost completely dehumidified dryblend for instance provides the basis for higher output capacities of the downstream production equipment. Fewer or no deposits minimize the cleaning downtime of the mixing system as well as all other machines and a constantly high product quality reduces scrap. These three advantages together will lead to a significant drop in costs, longer maintenance intervals and therefore a much higher availability of the whole production line.

Simply contact us – we will be pleased to advise you and install the MTI aspiration system on your mixer.