

Environmental Technology

Homogenous mixing for shortening of composting processes

Various treatment processes are used today for manufacturing compost, of which two are of particular interest in terms of mixing and treatment technology. They are open composting and container composting.

In both cases e.g. sewage sludge (wet and dry), chopped paper, loppings, green waste, and sawdust are pre-mixed with the possible addition of small amounts of active substances. The task of the mixer is to reduce clumping in the product, e.g. in sewage sludge, to homogenise the product optimally and to distribute the active agents evenly. Overall goal is the reduction of the composting time. The more homogenous the mixture, the better the breakdown of the products and the shorter the composting time. Separately powered choppers integrated into the back wall of the mixing drum ensure for the digestion of clumps and provide additional shredding, e.g. of loppings.

As an alternative to, e.g. open composting, there is also the possibility to shred the incoming products and to homogenize them in a mixer, then to press the product into forms and finally stack them on pallets for the composting process.

By way of comparison, very slowly rotating, large-scale composting drums were and still are used, however they cannot be compared to the high-performance turbulent mixers in terms of efficiency.

The processing of large foreign bodies such as stones, pieces of wood, etc, which can be fed into the incoming product as an impurity are an additional requirement on the mixers. The regular mixing systems cannot solve this requirement sufficiently. They are competitively susceptible, especially where overlarge parts are loaded into the mixer and in the treatment of extremely sticky sludge.



Past practice has shown that these widespread mixing systems can cause machines to fail and thereby lead to standstill, as jamming of the agitators means that discharge conveyance can no longer be undertaken. In addition, the conventional agitators are extremely wear-sensitive and require comparatively high drive energy.

AVA's type HTK mixers are superbly suited to these problem formulations as due to the special form and alignment of the mixing elements they are easily capable of handling the above mentioned applications and problem cases. They are also proven to be able to take almost anything and still deliver optimal mixing results. As the machines have no flood gate or restraint system for the achievement of a certain filling level, they are also able to handle extremely tough and sticky products (e.g. sludge) without "jamming". The innovative agitators with a very high level of re-mixing serve to compensate for additional deviations in product charging. Practice has shown that these new agitators are clearly superior to all regular agitators. The expertise lies in the combination of a very special positioning and angle alignment of the agitator elements and the associated mixer shaft speed. Many years of experience in the field of heavy-duty mixing have lead to this totally reliably version of the mixer.

