

Two-Stage Granulation of Engineering Thermoplastics

WEIMA Maschinenbau is presenting at PLAST'06 a further development of a two-stage processing plant with features that include both a primary as well as a secondary granulator. The plant is used for economic granulation of engineering thermoplastics such as ABS, PA, PBT, PC, POM, PPA, LCP etc., also of glass fibre reinforced grades, in the form of heavy start-up waste lumps or large volume surplus production material with large dimensions. With two-stage granulation, the material to be granulated is pre-granulated in a robust WLK type single shaft primary granulator to particle a size of approx. 40 mm and then granulated further to a final particle size of approx. 3-10 mm by a NZ type downline secondary granulator, specially designed for secondary granulation of pre-granulated material. Grinding mills require continuous, well dosed feeding for trouble-free granulation and this is often difficult to guarantee manually. Should overdosing occur, it often leads to an uneven granulation process, taking place in waves and accompanied by a high level of noise, as a result of which there may be accumulation of material or thermal degradation of the material being granulated, due to friction. Furthermore, higher sensitivity to disturbing materials will be observed, as well as generally higher blade wear, involving frequent changing of blades. In contrast to this, two-stage granulation enables discontinuous feeding of the primary granulator, whereby the hopper serves as a buffer zone. The entire production process is significantly optimised by this way of material feeding, as the operating staff do not have to constantly operate the granulator, but can be employed for other tasks.



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