

Gneuss MRS Technology now with FDA Approval

Production of high quality, PET food grade packaging from 100 % post consumer bottle flakes with the Gneuss MRS Extruder

At the beginning of 2010, Gneuss received a "Letter of No Objection" from the American Food and Drug Administration (FDA) for its Bottle to Bottle Recycling process.

This process consists of the patented Multi Rotation Extruder (MRS), the fully automatic Melt Filtration System and an SSP with an extremely short residence time where the viscosity is lifted to the required level of IV 0.8 (or higher).

The FDA approval is for up to 100 % post consumer bottle flake and means that pellets manufactured using this process can be used in the USA for food containers of all types, both for cold and hot filled bottles (classes C to G).

Analyses carried out by the Fraunhofer Institute have shown that the MRS extruder is capable of processing 100 % post consumer flakes to pellets for food grade applications without any prior treatment of the flakes, regardless as whether the flakes were washed and if so, regardless of the flake washing system used. The MRS system is therefore ideal for the



Fig 1: Gneuss MRS Extruder (patented)

manufacture of PET thermoforming sheet from bottle flakes and also for "bottle to bottle" processes. This is something which the market has realised and which has provided Gneuss with a record order intake - and this in spite of the financial crisis.

Since its introduction 3 years ago, the patented Multi Rotation Extrusion technology (MRS) has become a key technology for the processing of PET bottle flakes to packaging products for the food industry.

One of the most important advantages of this system is that it permits the processing of PET without pre-drying and requires only a water ring vacuum pump even for products with a high IV requirement. Further, the MRS technology provides excellent decontamination.

The MRS extruder processes PET bottle flakes without pre-drying, direct to pellets or sheet. The multiple screw section creates an extremely high surface area exchange rate, with the surface being constantly torn open so that with only a moderate vacuum (25 to 40 mbar) the maximum decontamination and minimum IV drop takes place.

The melt treatment is extremely gentle, resulting in a particularly high quality final product for example with regard to yellowness.

The advantages over conventional processes are on the one hand the relatively low investment and on the other hand the very low energy costs and the extremely high quality of the final product.

With the MRS extruder, the vacuum in the Multi Rotation System is controlled so that the IV can be set and controlled automatically according to the IV of the input material and / or the requirement on the final product.

PRESS RELEASE

Page 2 of 2



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