

South Africa: Extrupet expands into PET bottle-to-bottle recycling with its first VACUREMA system

# PET RECYCLING AT THE CAPE OF GOOD HOPE

For Extrupet (Pty) Ltd. of South Africa, PET recycling has long ceased to be new territory. At its operating facility newly erected in 2004 in Johannesburg's Wadeville district, the company now produces around 24,000 tonnes of recyclate each year, mostly from post-consumer PET beverage bottles although some PE-HD waste is processed here as well. One recent innovation at Wadeville is the company's first EREMA PET recycling system based on a VACUREMA BASIC 1512 T-VS which is rated for a throughput of 550 to 800 kg/h. The equipment enables Extrupet to produce food-safe rPET to North American FDA standards and is likely to support production of that material in compliance with the requirements of the newly established European EFSA soon. It is being commissioned at the customer's site as this EREMA News goes to print (spring 2009).



Chandru Wadhvani, Extrupet's COO (left), and Iqbal Hirji, Managing Director at Extrupet (right)

"In terms of logistics and the machine pool in place, our Wadeville site, with its 32,000 m<sup>2</sup> of production surface area, is equipped mainly for recycling post-consumer PET bottles," explains Extrupet's Chief Operating Officer (COO), Chandru Wadhvani.

Pre-sorted and supplied in 250 kg bales out of South Africa's recently established waste collecting schemes, the bottles are initially run through a pre-washing section. They are then sorted fully automatically according to colour and material type. This is accomplished "inline", using NIR spectroscopy, in what is the first such process to have been implemented on the African continent, according to Mr. Wadhvani. Before the bottles are subsequently ground to flakes, they pass a metal detector for safety reasons. The flakes in turn are thoroughly washed and pre-dried to below 1% residual moisture in two dryer stages as a last preparation cycle before being fed to the VACUREMA extrusion system for further processing into food contact grade pellets.

## AN INVESTMENT BASED ON TRUST

"As regards our recycling extrusion system, we possess extensive experience with EREMA's technology by now. For five years, we have been using several standard PC type EREMA systems designed for processing polyester," Mr. Wadhvani explains. "Although the resulting PET recyclates are of high quality, they are not suitable for food-contact use. Most of this

input material has therefore been converted into staple fibres, polyester fibres, geo textiles, strapping band and thermoforming films, as well as some new PET bottles albeit not for food-contact use."

The bulk of this output is shipped to African customers, e.g., in domestic South Africa and Nigeria, but some product also goes to Western Europe, South Korea and even Australia.

"Doubtless, we owe not the least part of our renown to the performance and reliability of our EREMA equipment. As we now expand into food-grade rPET, we therefore opted for a VACUREMA system," Chandru Wadhvani justifies his company's decision.

## BUILT-IN UPGRADABILITY

The new VACUREMA BASIC 1512 is pre-configured to support subsequent upgrading into a VACUREMA ADVANCED system at any time. This will involve the retrofit of an additional vacuum pre-treatment vessel. In its current BASIC configuration, the system enables Extrupet to produce a food-safe recyclate with an intrinsic viscosity (IV) roughly on par with that of the input material. The upgraded ADVANCED version, on the other hand, would provide an intrinsic viscosity gain of around 3% in the future if and when necessary. On principle, this would even permit the production of new PET beverage bottles from 100% rPET.

With its new investment, Extrupet supports and assists the South African plastic

production industry - and specifically, manufacturers of PET beverage bottles - in its voluntary commitment to return post-consumer raw materials into the product cycle in an economically and ecologically efficient manner.

Apart from Wadeville, Extrupet still maintains its original production facility at Cape Town and employs around 250 people at its two sites today. It was the Cape Town site where the company gathered its first experience with EREMA technology as far back as in the 1990s. ■

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