

Extrupet investment to produce food-grade rPET is paying off

Output of about 500 tons of rPET a month

EXTRUPET'S R20 million-plus investment to produce 'food-grade' recycled PET polymer appears to be paying dividends. With an output of about 500 tons of rPET a month, the Extrupet plant in Wadeville is achieving targeted output.

But they've had to work hard for it: in order to gain 'food-grade' approval from retailers such as Pick n Pay and Woolworths, Extrupet had to go beyond ISO certification to the

BRC (British Retail Consortium) HACCP (Hazard Analysis Critical Control Point) standard. BRC, one of the most highly regarded international standards for food manufacture and food grade packaging, implies major hygiene and procedural

standards along with comprehensive data recording. For recyclers, achieving the stringent hygiene standards for food grade compliance is a new journey!

A complete new polymerization plant to produce 'food grade' rPET had to be added on to Extrupet's main recycling plant in Wadeville. And then it had to run the plant for a year before formally applying for BRC accreditation.

Extrupet is the only rPET manufacturer in the world with BRC accreditation.

Polymer production commenced at the plant in September 2009 and the BRC auditor arrived for the assessment in October 2010. Thankfully for chief operating officer Chandru Wadhvani and the Extrupet team, it passed. Achieving the BRC standard



The crystallizer system at the Wadeville plant.

had been far more rigorous than the ISO process, said Wadhvani. Extrupet is also an ISO 9001:2008 compliant company.

The sorting and separation conducted in what was previously the main plant – prior to construction of the BRC standard plant – involves removal of non-PET containers and all organic matter picked up in the collection stage, as well as

removal of other contaminants such as labels, caps and wads. By the end of this stage the rPET material is already a consistent quality, but there remains a small risk of contamination by volatile substances which may have been deposited in containers by consumers and permeated into the material.

Then, in the 'food grade' rPET plant,

all remaining potential contaminants are removed in the patented 'Vacurema' process. The reprocessing system, from Erema of Austria, allows for a high residence time in the vacuum reactors for the full treatment of the material and final pelletisation.

Extrupet also operates a laboratory on site, which is part of the BRC standard structure. The lab is equipped with a gas chromatograph, giving full analysis of the polymer produced.

At present it is achieving an intrinsic viscosity of about 0.75 and Wadhvani is confident they can increase this to about 0.80. The IV of virgin PET is about 0.82.

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• ONLY PET BOTTLES ARE BEING USED IN THE PROCESS. NEITHER PET TRAYS OR SHEET ARE BEING PROCESSED AS THESE FREQUENTLY CONTAIN LAYERS OF OTHER FILMS, AND PETG CONTAINERS ARE ALSO REJECTED DUE TO THEIR HAVING A LOWER MELT TEMPERATURE.

www.extrupet.co.za



The Vacurema system at Extrupet's plant in Wadeville, Johannesburg. The plant is presently supplying about 500 tons a month of 'B2B' 'food grade' rPET material. It also supplies a further 800t/mth of fibre grade rPET chip.

Pick n Pay uses 25% rPET in housebrand products

Pick n Pay are doing their bit to ensure that packaging material is used in a sustainable manner and has encouraged packaging manufacturers to emboss the relevant substrate logo on the various components of the packaging in an attempt to promote recycling amongst customers.

By August 2011, all packaging used for PnP housebrand products will be embossed with the relevant substrate logo, the start of Pick n Pay's effort to advise customers whether the packaging bought can be recycled.

Pick n Pay has successfully completed trials to include a minimum of 25% of recycled material in their packaging in an attempt to reduce waste to landfill. Some of these products include the range of PnP Ice Tea Concentrate, PnP Fresh Juices and PnP Range of condiments. This project will be extended to various other products once the availability of rPET improves.

Pick n Pay are sourcing as much packaging material as possible from renewable sources. This includes using FSC material (which gives an information trail about the path taken by products from source through all stages of processing, manufacturing and

distribution to the consumer). Products that are packaged using FSC material include PnP Roller Towels, PnP 2 Ply Toilet Tissue, PnP Bran Flakes, PnP Shredded Bran, PnP Daily Vitamin Range and NNB Oats.

Some of the other initiatives that Pick n Pay are involved with include partnerships with PETCO. The PnP Green Plastic Bag Range is now made from 100% recycled material and contains a minimum of 70% post-consumer waste.

www.picknpay.co.za

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Astrapak leads the pack in rPET food packaging

Hilfort produces wide range of containers with rPET dosages of up to 25% and even higher

THE Astrapak company Hilfort Plastics is leading the pioneering project to include recycled material in food packaging, a new trend in South Africa that is being driven by retailing giants Pick n Pay and Woolworths.

The retailers want as much as 25% of recycled PET (rPET) used, and Cape Town-based Hilfort has invested in the technology and systems to make this possible. Hilfort general manager Robin Olbrich said Astrapak had made a "conscious decision to take this big step".

It is sourcing the rPET from Extrupet of Johannesburg. Hilfort at first used small percentages of rPET, but has since steadily increased the dosages as it emerged that including the recycled material did not pose as many problems as had been anticipated. It is producing a wide range of containers with rPET dosages of up to 25% and even higher. The converter has successfully moulded containers with up to 50% rPET.

Containers for carbonated beverages are at present excluded from the programme as the IV is currently considered too low.

To expedite the process, Hilfort recently installed



The conveying system to transport material from Hilfort's silos to the blender and on again to the machines was installed by Trollope Machinery, the Sysmetric agent in SA



a highly versatile blending system from Sysmetric for the dosing and blending of rPET. Sysmetric, through local representative Trollope Machinery, also supplied the piping and conveying system.

The Sysmetric CD™ 800 batch blender is able, as its name suggests, to convey, dose and blend up to 800kgs an hour, giving Hilfort the capability to significantly improve control of the process. To achieve consistent wall thickness and neck finishes, homogenous blending of the rPET is essential. Feeding to the hopper-driers on the machines is automated by the Sysmetric system and all data is recorded.

The Sysmetric systems, manufactured in Israel, are becoming popular in the industry for their logical nature of operation and reliable performance.

Hilfort has in fact gone one step further and is now also blending its in-house regrind into the process. Regrind at present forms a relatively small percentage – of about 2-3% – of the container weight.

HILFORT PLASTICS: PHONE 021 941 5060.

www.hilfort.co.za

The new Sysmetric CD™ 800 batch blender doses and blends the virgin PET, rPET and even regrind in desired percentages and feeds the PET machines at Hilfort for injection moulding of preforms and then injection-stretch blow moulding of containers