



# PETplanet *insider*

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Page  
36



**Recycling  
Special**

Page  
10

**MARKET** survey  
Suppliers of preforms  
and preform inspection

Page  
31

Using colours to add value to recycled packaging

# rPET in a premium look

Repi's "Fumé shades" are intended to improve rPET aesthetics and help to increase the percentage of recycled material in packaging. Lucia Buffoni, Repi Marketing Manager, offers a personal perspective on the current state of recycling in plastic packaging and explains how colorants and additives can help overcome the challenges the industry is facing.



**F.I.t.r.: 100% rPET, 100%rPET with AY 00015 @0.03% and same with AY 00201 with optical brightener @0.03%**

Two very public warnings issued in 2018 have to be taken to heart by the plastics industry. First, [if present trends continue] "...there will be more plastics in the ocean than fish by 2050"; second, "single-use packaging will be banned soon".

The plastics industry is under unprecedented pressure but single-use packaging is unlikely to be banned completely; it is a convenient response to the metropolitan life style and has been spread very quickly, from industrialised countries to developing ones.

Food safety, freshness and quality are all provided by plastic packaging. There are, currently, no other real alternatives.

The real challenge is to limit plastic waste going to landfill and into the oceans. An environmentally conscious culture, allied with effective collection strategies, are what is required.

Claims and heated accusations that nobody cared about plastic pollution and waste until the publication of alarming pictures of congested rivers and dead wildlife is far from the truth. The plastic packaging industry has already reduced the amount of material used, through light weighting. We are now seeing the rise of the "Eco-



**Antique rose with virgin PET (left) and with 50% rPET (right)**

Design" philosophy and the exploration of bioplastics – which have, so far, struggled to establish themselves.



**Olive green with virgin PET (left) and with 50% rPET (right)**

The keywords and main challenges for the coming years are: reuse – recycle – reduce – bio. Forecasts are that 50%, 75%, even 100% rPET will be used for single use packaging within the next five years. Critical issues will be sourcing, processability, safety and aesthetics.

The last issue – aesthetics – might be considered less important but that is not the case. Is the market prepared to abandon attractive packaging? Will brand owners be prepared to see their products packaged in dull-looking rPET containers? Unlikely.

## Colour correction of rPET

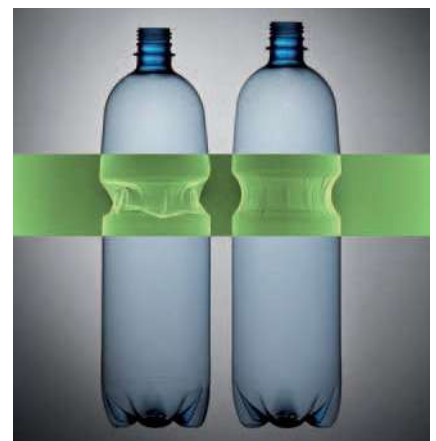
Colourants and additives could come to the rescue. Repi, which has more

than 45 years' experience, is working with brand owners and converters to find solutions that allow the use of more and more rPET, both by adjusting the polymer's mechanical performance and correcting off-shade colours.



**Smoky black with virgin PET (left) and with 50% rPET (right)**

Repi's Anti-Yellow Range (AY) uses different liquid additives to balance the appearance of incoming material. It is possible both to correct typical rPET greenish or greyish tones and to regain brightness. More recycled plastic content can then be used to produce good-looking preform and sheet. The mechanical performance of rPET must be also kept under control, to assure the quality and strength of a bottle. Repi's IV Enhancer, which is normally added during the injection moulding process, attracts and binds oligomers to itself and increases IV back to the level of the virgin material.



**IV enhancer additive helps the mechanical performance of a rPET bottle increasing IV level from 0,05 dl/g to over 0,10 dl/g, depending on the LDR.**

Colours are also important. Repi's Fumé range offers a wide choice of smokey shades that cover rPET material and can give a premium and delicate

nance to bottles and containers, for drinks and for cosmetic applications. This can be obtained by adding colour amounts as small as 0.05% to the PET/rPET mix. The range extends from a light amber to light blues, greys, aqua-marine shades and antique rose.

The Fumé range answers customers' concerns about appearance of recycled material. It also offers the opportunity to reduce the amount of colour; several brands are moving from opaque/concealer shades to transparent. Some are even considering "going clear", in order to help the recycling loop.

This would have significant marketing impact, considering the iconic role of brand colours, in food and drink and cosmetic industries. Colour is crucial for brand recognition. It is easily memorised and recalls other feelings related to the product. Sometimes, colour is what prompts the "wow" at very first sight. It is able to compensate for revolutions in design, shape, weight or material of the packaging.

Adding a small amount of a liquid colourant to PET/rPET mix (between 0.02% and 0.6%) would not affect recycling. The protective characteristics of colours, even when transparent, in preserving packaged contents should not be underestimated. Vitamin or tonic water are both very light sensitive. When packaged in a transparent monolayer bottle, protection is best provided by a green or an amber colour, whose pigments protect contents even more than a transparent UV additive. Going clear would mean having to move to a full sleeve or to adapt the drink recipe. Repi's Fumé range intends to offer the opportunity to launch new packaging, focused towards sustainability and circular economy, without affecting brand symbolism and recognition.

There is nothing currently available to replace PET, with anything like the same proper-

ties. The packaging industry worldwide uses 70 million tonnes a year; production capacity is actually increasing. Polyester is not going anywhere, soon. PET's recycling rate is high and its quality is improving.

Colourants and dedicated additives are available to make it look and work even better. We should take advantage of them. After all: what would the world look without colour?

[www.repi.com](http://www.repi.com)



A dark blue on virgin PET (left) and on 100% rPET (right)