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Additives for more efficient and economical PET-packaging

by Lucia Buffoni, Marketing Manager at Repi

One of the main tasks facing the world today is how to save the resources of our planet, including all types of natural raw materials and energy, which allows us to live on a level of comfort, which we have become used to, and from which, more and more, we depend.

Also in the field of plastics processing, manufacturers are looking for the possibility of lowering the costs of materials and processing, while maintaining the highest quality for their products. In the production of PET preforms, for example, work has long

been going on to reduce the weight of the preforms. At the same time, machines yield a higher productivity: cycle times have been reduced, while the quantity of preforms in one shot has increased.

In this context, Repi is established with a series of liquid additives and special solutions for PET packaging, as a support to the market needs. The fastest growing Repi additive family is the one of Anti Yellow. These additives in liquid form are dosed from 0.005% to 0.05% both in the rPET resin production and in the rPET packaging injection moulding process. If we consider PET produced on bottle-to-bottle recycling lines, these additives are able to perfectly make up the preforms since this material has the characteristics of virgin PET, with one exception, namely that the rPET has a slight yellow or grey shade, which is successfully "cancelled" by using the additive.

Enhancer for optimising process parameters

In the field of rPet, Repi IV Enhancer is widely used both in injection moulding, where it enhances the physical and mechanical characteristics of the bottle and in the extrusion of rPET sheets for thermoforming, where it optimises the process parameters, enables better thickness distri-

bution and allows for a less frequent cleaning of calenders.

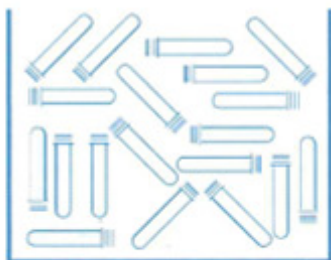
The above mentioned process additives are closely followed by others no-less successful, the first one being Repi Blowing Additive. This product is able to improve and control the absorption of infrared in the blowing stage, giving customers the possibility of reducing blowing temperatures. At the same time, the blowing equipment works in a smoother way, without unplanned stops, and the productivity of blown bottles per hour is increased. From the aesthetic point of view, this additive hardly affects the colour of a transparent preform. It even happens that customers who have access to Fast Reheat PET resin, prefer to work with standard PET and blowing additive, since they enjoy the flexibility in production having the freedom to modify the addition rate of the additive themselves. Repi offers also the option of colour with additive inside: popular ones are not only dark amber and dark green for beer preforms, but also blue for mineral water preforms, and even a white colour developed for milk monolayer preforms.

Repi Process Aid is another additive positively acting at the blowing stage by reducing sticking between one and other of preforms and bottles. This product creates a better slip effect between preforms and as a result up to +10% of preforms can be stored in a box, with consequent advantages in terms of transport and storage costs. Preforms maintain a better visual aspect, remain more transparent and clear, with fewer scratches. The recommended dosage is from 0.12% to 0.2%. Also here "all-in-one" solutions of colour and additive are often demanded by customers.



Repi Anti Yellowing additive for rPET

X

WITHOUT REPI PROCESS AID

✓

WITH REPI PROCESS AID

*~ +10% OF STORAGE CAPACITY FOR EACH BOX DEPENDING ON PREFORM DESIGN

Protecting the inside

As far as the packaging content is concerned, some additives offer valid protection enabling brands to preserve taste and aesthetics of its products on the shelves.

On the one hand, SenzAA acetaldehyde reducers act to avoid the unpleasant off-taste of waters bottled in PET. The reduction performance goes up to nearly 85% allowing measuring a AA value of less than 1ppm.

On the other hand Repi UV Absorbers create a barrier to the harmful UV-rays and visible light, which when passing through bottles and jars wall, can damage the product inside. Like the others, also this additive is liquid, and here, too, the dosage, from 0.1% to 0.2%, is significantly lower, than for its solid masterbatch alternatives, while obtaining equal or better final results. It is used especially for transparent preforms meant for sensitive liquids like vitaminic waters, juices and sauces in the food industry as well as for fabric conditioners, detergents and household products.

The world of packaging is under unceasing innovation from each point of view and we as colorants and additives producers are proud to play a leading role and to be involved in this virtuous process, offering smart solutions where nature and production processes do not come yet.

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