



THE USE OF PET FOR SINGLE-USE BOTTLES IS

UNIVERSAL. We have come to rely on this common plastic because it is convenient, lightweight, safe, cost effective and highly recyclable.

To support the principles of a circular economy, however, there is a clear need to increase the use of recycled PET (rPET) and reduce our carbon footprint; but achieving this is not without its challenges.

THE CHALLENGES

Improving rPET Quality

 Reduce yellowing, improve color and assure IV uniformity

Enhancing Bottle Performance

 Improve bottle strength, reduce acetaldehyde and minimize thread pulls & blowouts that cause high scrap rates

Reducing Carbon Footprint

 Reduce energy consumption and raw material usage while driving product efficiencies

OUR SOLUTIONS

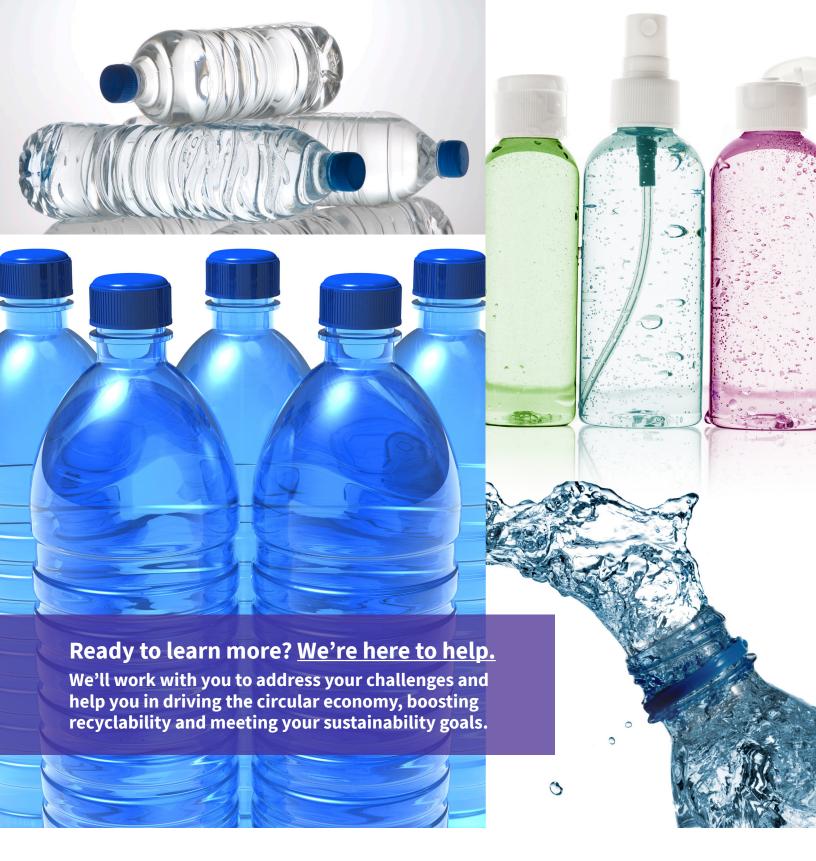
Aligning our work with sustainability demands, we address those challenges for rPET producers, convertors and brand owners alike with technologies to improve both quality and performance, ensuring the recyclability of plastic packaging. We offer solutions that allow for higher use rates while also reducing carbon emissions, helping to improve the sustainability of the PET bottle and drive the circular economy.

Solutions for rPET Converters

ISSUE	AVIENT SOLUTION	WHAT IT IS	WHAT IT DOES
Bottle quality and strength; energy usage	ColorMatrix™ SmartHeat RHC	Process aid, approved by Association of Plastics Recyclers (APR), which helps to reduce carbon emissions and improve the quality and performance of rPET, allowing for higher levels of rPET to be used.	Enhances heat-up rate of the preform for energy reduction during bottle blowing. Provides further optimization during bottle blowing to improve bottle quality and strength, allowing for lightweighting, increased rPET content and improved productivity.
Color consistency; recycle stream impact	ColorMatrix™ SmartHeat RHC Tint or SmartHeat RHC Tone	Recycle-friendly color or toner containing SmartHeat RHC, which helps to reduce carbon emissions and improve the quality and performance of rPET, allowing for higher levels of rPET to be used.	Provides all benefits of SmartHeat RHC while also producing a toning or color effect with no detrimental impact on the recycle stream.
Higher levels of acetaldehyde; off-taste in water	ColorMatrix™ Triple A™ Acetaldehyde Scavenger	Additive to control levels of acetaldehyde within the preform, allowing for higher levels of rPET to be used.	Controls preform acetaldehyde levels during the injection molding process, which can lead to an off-taste in bottled water.
Thread pulls; blow line jams	ColorMatrix™ EZE™ Slip Agent	Process aid to reduce surface friction, allowing for higher levels of rPET to be used.	Improves mold release resulting in reduced thread pulls or blow line jams while supporting faster cycle times and production rates. Improves preform quality and reduces packing density.
Color degradation; product protection	ColorMatrix™ Ultimate™ UV Light Barrier	APR/EPBP approved additive to block ultraviolet light transmission	Protects the product and brand integrity during storage, transportation and in the retail environment, maintaining product quality and enhancing shelf life.

Solutions for rPET Producers

ISSUE	AVIENT SOLUTION	WHAT IT IS	WHAT IT DOES
Color consistency, yellowing	ColorMatrix [™] SmartHeat RHC Tone	Recycle-friendly toner containing APR approved SmartHeat RHC process aid	Corrects the natural yellowing of PET through the recycle process while also reducing yellowing at root cause. Reduces the requirements for high levels of toner to correct for yellowing.
IV variability	ColorMatrix™ rePrize™ IV Builder for PET	Chain extender to repair PET chains, increasing the melt and intrinsic viscosity of rPET	Reacts via melt extrusion and increases viscosity in the melt phase. Dose rate can be linked to online viscometer to correct the dose rate to compensate for variations in PCR feed IV. Can reduce or eliminate the requirement for solid state polymerization, helping to reduce cost.



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