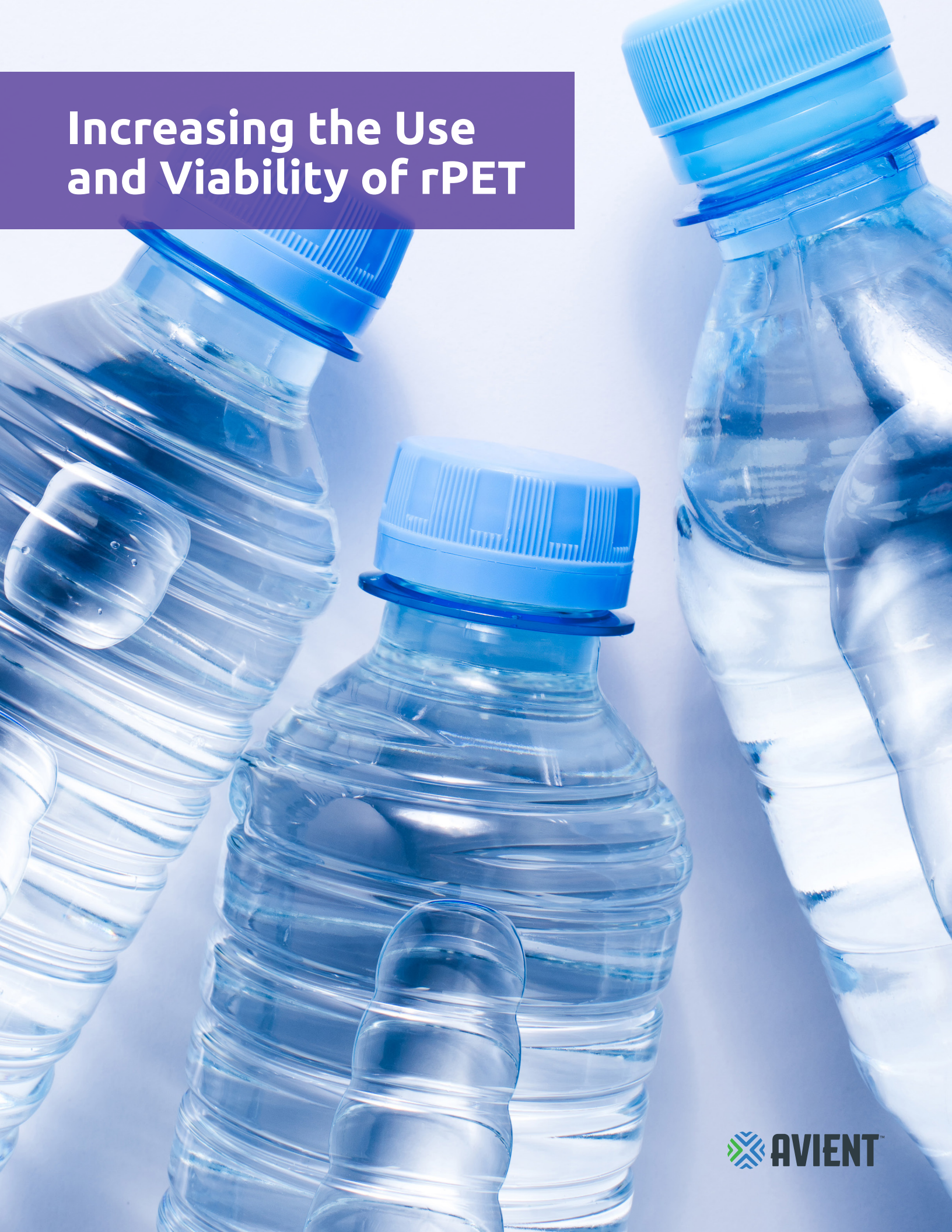
Increasing the Use and Viability of rPET



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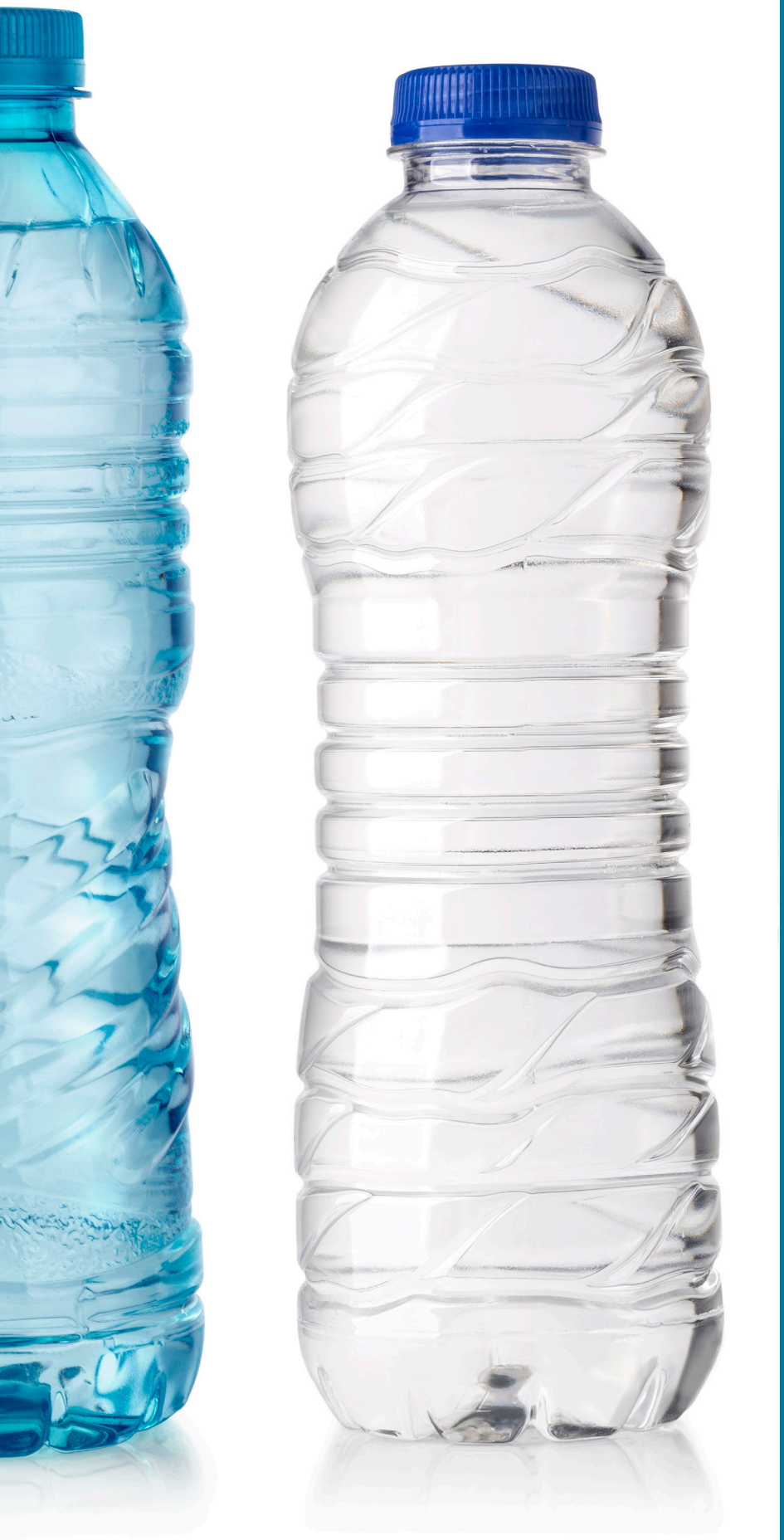


THE USE OF PET FOR SINGLE-USE BOTTLES IS UNIVERSAL. We have come to rely on this common plastic because it is convenient, lightweight, safe, cost effective and highly recyclable.

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

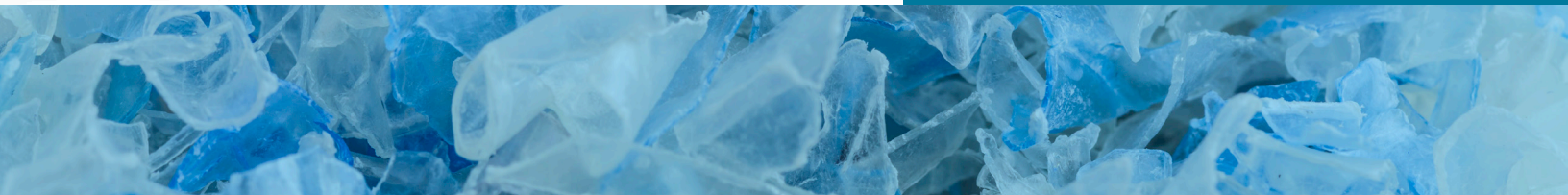
- Improve bottle strength, reduce acetaldehyde and minimize thread pulls & blowouts that cause high scrap rates

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.

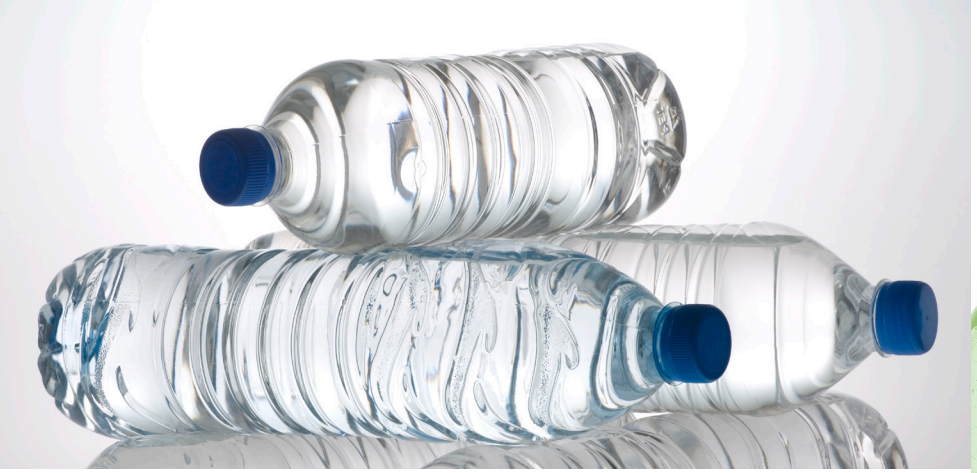


Solutions for rPET Converters

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.



Ready to learn more? We're here to help.

We'll work with you to address your challenges and help you in driving the circular economy, boosting recyclability and meeting your sustainability goals.

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