

Beverage

Sustainability initiatives and coding considerations for rPET and plant-based packaging



Recycled PET (rPET) and plant-based packaging can help reduce the dependence on fossil fuels and the impact of PET plastic on the environment. rPET comes from plastic that has already been used for packaging, such as plastic bottles. Plant-based packaging is made by converting biomass feedstocks into a key ingredient used for producing PET plastic.

The Challenge:

While seemingly consumer-friendly, the use of PET has proved detrimental to the environment. More than 480 billion plastic drinking bottles were sold in 2016 across the world, and an upwards of 584 billion are expected by 2021. **Current statistics show that globally, only 9% of plastic bottles are recycled.**¹ This number is staggering, and beverage industry leaders are joining forces to do something about it.

In response, the beverage industry is shifting towards rPET (recycled PET or Polyethylene terephthalate) and plant-based bottles. Use of these alternative materials can contribute significantly to the sustainability goals of beverage manufacturers and suppliers. This shift is certain to eventually make itself across the beverage industry. However, with the shift, beverage producers should also reevaluate their coding techniques and whether or not their existing coding solution(s) is viable on these new substrates.

Videojet Advantage:

Coding on rPET and plant-based bottling materials can have its challenges, and requires special consideration in the use and selection of a coding solution. Videojet offers expertise on the various coding and marking solutions available specific to these packaging materials. For example, when laser marking is the optimal solution, Videojet offers a dedicated 9.3 wavelength that is engineered for specific use with rPET and plant-based plastics. For producers best served by Continuous Inkjet (CIJ) coding technology, Videojet has designed inks to provide optimal adhesion on these substrates, including many inks within our iQMark™ portfolio of products.

¹ <https://www.forbes.com/sites/trevornace/2017/07/26/million-plastic-bottles-minute-91-not-recycled/#55d98d9d292c>

Industry leaders making a difference



New initiatives and how industry leaders are making a difference

Per the UN Environment's Global Plastics Platform (under the New Plastics Economy organization) there is a global commitment to make 100% of plastic packaging reusable, recyclable, or compostable by 2025. This ambitious goal targets all plastic packaging used. This initiative is helping to motivate the sustainability initiatives of global companies.

In an effort to reduce their environmental impact, leaders in the beverage industry, such as PepsiCo and Nestle, are moving to thinner plastics and use of more recycled material. PepsiCo targets a move to 50% rPET in plastic bottles across the EU by 2030.² Likewise, Nestle has announced a commitment to using 25% rPET in plastic bottles across Europe by 2025.³ And over the past 10 years Nestle has reduced the amount of PET needed for each liter of bottled water by 22%.



Recycling PET

To recycle, PET plastic is sorted, cleaned and transformed so that it can be reused with food and beverage products (per assigned federal guidelines). Recycling one ton of PET containers saves 7.4 cubic yards of landfill space. And according to the EPA, recycling a pound of PET saves approximately 12,000 BTU's.⁴

² <https://www.foodingredientsfirst.com/news/pepsico-targets-50-percent-rpet-in-plastic-bottles-across-eu-by-2030.html>

³ <https://www.nestle.com/ask-nestle/environment/answers/tackling-packaging-waste-plastic-bottles>

⁴ <https://www.theplanetbottle.net/what-is-rpet.html>



The race to create 100% bio-based PET bottles

The NaturALL Bottle Alliance was forged in an effort to meet the New Plastics Economy global commitment (as well as each participating organization's sustainability goals). Founded in 2016, this alliance was co-founded by Nestle, Danone and Origin Materials with the intention of scaling-up the next generation of bio-sourced PET using biomass feedstocks. PepsiCo joined the alliance in 2018 and their continued goal is to develop a PET bottle made of 100% renewable materials.⁵ With the technology already proven at a pilot level, commercial-scale production of 75% bio-based PET bottles will begin by 2020, with the intent to reach 95% by 2022.

Also concerned about reducing PET plastic in packaging, The Coca Cola Company created PlantBottle® packaging that is made by converting the natural sugars found in plants into a key ingredient for making PET.⁶ Made partially from plants, this is the first-ever fully recyclable PET beverage bottle. This packaging material looks and functions just like traditional PET, but has a lighter footprint on the planet.

What are biomass feedstocks?

Biomass feedstocks are plant and algal materials used to derive bio-based polymers. Examples of biomass feedstocks include corn starch, sugarcane juice, crop residues such as corn stover and sugarcane bagasse, purpose-grown grass crops, and woody plants.



⁵ <https://www.nestle.com/media/news/naturall-bottle-alliance-welcomes-pepsico>

⁶ <https://www.coca-colacompany.com/our-company/plantbottle>

Coding and marking on these new packaging materials

While traditional PET is still largely used, leaders in the beverage industry across the world are pushing a change to more sustainable packaging. This move is intended to lessen the effect of plastic on the environment while also supporting corporate sustainability initiatives. With the change to new packaging types, however, it is important that thorough testing is completed to identify the most appropriate and most effective coding or marking technology for each bottle substrate and beverage operation.



The Bottom Line

Leaders in the beverage industry are driving initiatives to reduce the environmental impact of PET. At Videojet, we work hard to stay ahead of these kinds of changes, and develop products to address the needs of our customers and their sustainability goals. We offer product expertise, industry knowledge and the support needed to help our customers identify the optimal coding solution for their evolving packaging materials. Whether you choose laser or CIJ, we have technologies engineered to code on rPET and plant-based bottles.

Contact your sales representative today to discuss coding and marking solutions that provide the codes you need while still supporting your sustainability goals.

Videojet iQMark™ inks and fluids



When it comes to Corporate Social Responsibility (CSR) and sustainability goals, manufacturers should partner with other like-minded companies who take the time to understand their needs. Videojet actively works with its customers to investigate sustainability

requirements and design solutions based on them. One such solution includes Videojet iQMark™ certified ink and supply products. These CIJ inks and supplies are designed and manufactured to maximize contrast, adhesion, and production uptime, while also meeting safety, environmental, and regulatory requirements. Through working with an expert supplier, every element that feeds into the sustainability or CSR frameworks can be closely scrutinized and the best possible outcomes delivered.



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