



Plastic or glass—how do you decide?

The benefits are clear that plastic is the right choice.

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Introduction

There are many things to consider when looking for new or refreshed packaging for your food, beverage, personal, or home care products. You want a package that protects your product, provides a great user experience, enhances your brand, and meets your sustainability goals. But you may have questions like: What is the “best” material? Which material is more sustainable? What are some of the other considerations with plastic bottles or jars?

The benefits of plastics are clear when you look at functionality, design, and sustainability. Read more to find out why and how Berry Global’s team of experts can help you navigate the transition to plastic packaging for the benefit of your brand and the planet.

The functional benefits of plastic are distinct

There are various reasons that rigid plastic can provide an enhanced packaging experience compared to alternative substrates, even before you consider sustainability.

Plastic is virtually shatter proof, meaning there is little risk of breakage. This helps improve product safety and minimize product loss. Both of these aspects are important throughout the lifecycle of your products, from supply chain, transportation of the bottles to your manufacturing site, filling, warehousing and shipping of filled products, retail handling, and end of life. Physical contamination with glass is considered a major safety hazard, which is carefully monitored and assessed through Hazard Analysis and Critical Control Points (HACCP) systems in most manufacturing facilities. HACCP systems also search to identify, analyze, and control physical contamination of the product with foreign objects. These can be material fragments that are picked up by the product during production, sometimes as a result of an equipment malfunction and breakage.

If your product is likely to be handled by children (think pickles or spreadables) or ends up in a fast-paced environment (such as restaurant or bar), plastic can offer a safer user experience for everyone who handles it along the way. Shatter-resistant plastic is also a superior choice for the growing e-commerce market: it is lighter to ship, requires less packaging material than glass, and is highly unlikely to break during shipping, reducing the risk of causing injury to a recipient or carrier.



Plastic can be molded into different shapes. This helps you to differentiate your product and enhances the user experience by providing packaging that is easy to grip, invertible, or squeezable. [Berry provides a variety of shapes and sizes of stock bottles](#), and can easily create new molds.

Plastic bottles and jars require less effort to open and close compared to glass containers. This makes it easy to keep the lid or cap tight, and as a result, maintains the freshness of your product and extends its shelf life. Based on standard industry measurements, the torque required to open a 38mm PP or PE cap on a plastic bottle is 88% less than that required for a glass bottle. Berry offers a variety of different types of [caps, closures, dispensers](#), and liners to fit almost any product.

Plastic Beats Glass in Sustainability Measures



Plastic has a Lower Carbon Footprint than Glass

A 2021 study by [McKinsey & Company](#) on the impact of plastics compared the indirect and direct value-chain emissions of plastic versus alternative substrates. The study found that among fourteen different substrates, plastic had the lowest carbon footprint in thirteen instances. This is because plastic is often less energy intensive to produce or more weight efficient, particularly versus glass. Plastic's light weight properties positively impact indirect emissions by reducing

the number of vehicles required to ship products both to the factory and the store. Compared to heavier weight glass bottles, plastic's light weight makes it possible to load more bottles onto a truck, while still remaining within pack out weight limits. The McKinsey study also highlighted a 15% carbon emission advantage for a plastic soap bottle versus the same package in glass.

Plastic contributes to a circular economy

Plastic contributes to a circular economy by being recyclable, containing recycled plastic or bio-materials. HDPE and PET are widely recyclable, with almost 90% of households having access to recycle these materials, according to the Sustainable Packaging Coalition's 2021-2022 [Centralized Study on the Availability of Recycling](#). PET and HDPE bottles can be made with up to 100% recycled content, depending on the product and subject to testing and FDA guidelines. Plastic packaging can be made from bio-materials, like sugarcane HDPE, which contributes to a circular plastic economy by reducing the amount of virgin plastic consumed.

What you Need to Know about Converting to Plastic



Now that you've decided to make the move to plastics, what do you need to consider? There are two main areas - product integrity and line compatibility.

Product integrity: First you need to make sure that your product is compatible with plastic. This involves a series of organoleptic and compatibility tests, so it's important to consider the time requirements for these processes when mapping out a timeline. If you find out that a special barrier or coating between the bottle and

the product is required, Berry's technical experts can identify the variables that must be tested and develop a thorough plan for execution.

Line compatibility: Will the plastic package run on your current filling line? In some cases, you may be able to drop in the plastic package with no, or minimal, adjustments. But, for many situations you will need to consider major filling equipment changes or even switch to a new filler. And don't forget your packing equipment--be sure that the new plastic package can flow seamlessly from the filler to the case packer. We have the global resources and in-house technical experts that will work with your OEM to help identify the necessary changes for converting from glass to plastic.

Conclusion

Compared to glass, plastic packaging offers enhanced performance, design, and sustainability benefits for a variety of food, beverage, personal care, and home care products. These benefits range from shatter resistance, customizability, and easy-to-seal lids, to the ability to produce a lower carbon footprint and contribute to the circular economy.

With more than 265 global locations and 46,000 employees, Berry has the resources, expertise, and investments to deliver innovative solutions that can help you transition to a better package with plastic.

McKinsey & Company. (2022, July 6). Climate Impact of Plastics.
<https://www.mckinsey.com/industries/chemicals/our-insights/climate-impact-of-plastics>

Sustainable Packaging Coalition. (2020-2021). Centralized Study on Availability of Recycling.
<https://sustainablepackaging.org/wp-content/uploads/2022/03/UPDATED-2020-21-Centralized-Study-on-Availability-of-Recycling-SPC-3-2022.pdf>