

REDUCE

Packaging sustainability is a critical topic in the industry right now, with many companies moving towards more sustainable packaging to meet consumer demand and environmental goals.

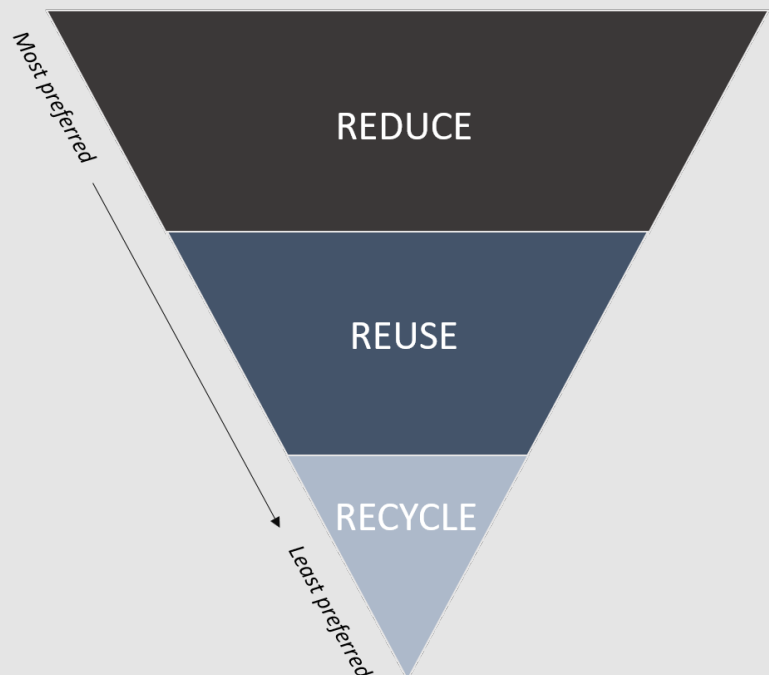
*In advance of the American Packaging Summit, we heard from **VOID Technologies** about how companies can meet their environmental goals through reducing the amount of packaging they use.*

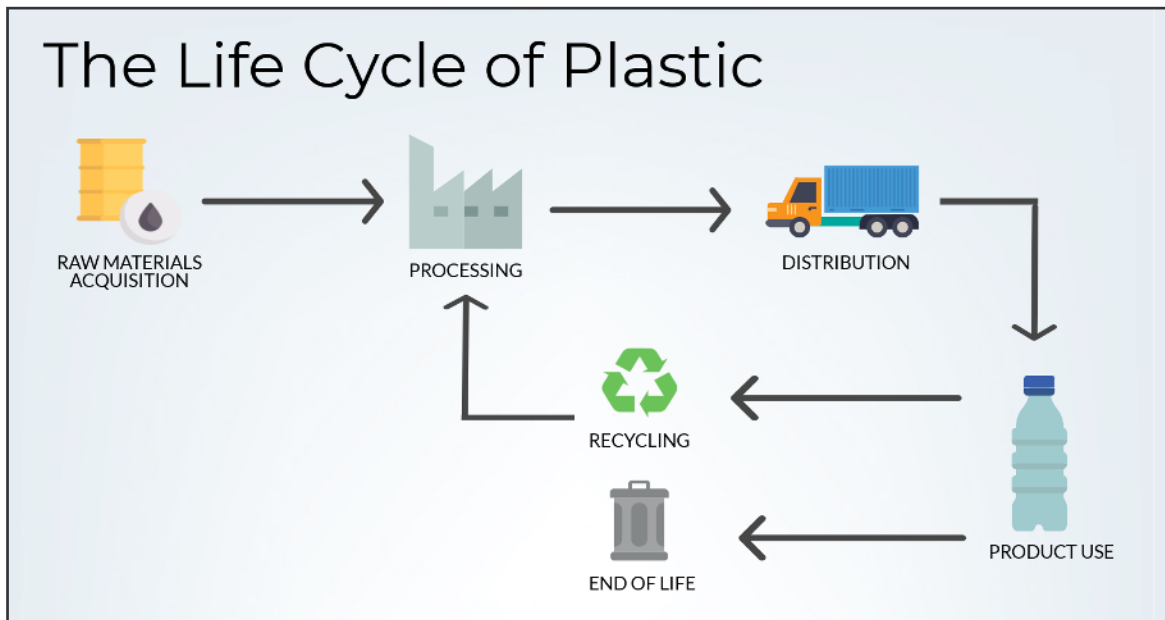
What is VOID's view on how companies can improve the environmental impact of their packaging?

Companies today are facing a complex set of choices around how to tackle sustainability, but it is possible to use a simple guiding framework as the foundation to building an approach. In this regard, people frequently talk about the 3 R's of Sustainability: Reduce, Reuse, and Recycle. What is often overlooked, however, is that this is a hierarchy.

The framework encourages us to first and foremost reduce consumption, as this is the most impactful approach to sustainability. This can be achieved by reducing the number of products we use, but also by reducing the amount of material used in each product. The "Reduce" approach affects the whole supply chain in the most impactful way, and it is the most direct way to cope with the increasing demand for packaged products and the pressure on the supply chain.

The Sustainability Hierarchy





What is VOID's "VO+ Technology"? Why is it unique?

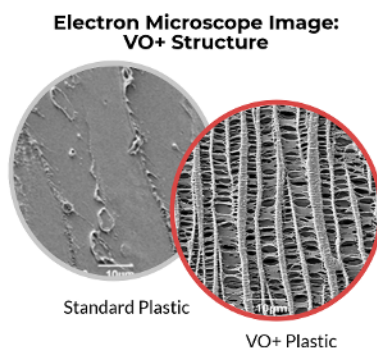
VO+ is a revolutionary material reduction technology that engineers nano- and micro-scale voids into commodity and bioplastics to create lighter, stronger, and more sustainable products.

The technology uses a proprietary polymeric additive system and is entirely compatible with conventional film and sheet extrusion processes. After extrusion, the material is stretched (MDO or biaxial orientation) to activate the voided structure.

While cavitated polymer films have been used in the industry for some time, VO+ voided polymers are unique due to the combination of void size, polymeric composition (e.g., no mineral), and compatibility with conventional equipment.

How does VO+ technology reduce the amount of material needed in packaging?

VO+ technology creates hollow cavities (or "voids") within the polymer structure – similar to a honeycomb structure –



which reduce the amount of material consumed for a given volume of product.

Despite consuming less plastic, the product is superior in performance to conventional products due to its engineered structure. By creating these voids, less plastic is required for each product without any compromise on the integrity of the product.

Overall, we see material reduction of up to 50%, with enhanced mechanical properties such as puncture strength, stiffness and tear, as well as unique optics, including 60-80% opacity in thin films without need for expensive TiO₂ fillers.

How do VO+ polymers improve on the sustainability of traditional polymers?

VO+ polymers reduce the amount of material consumed at the source and moving through the supply chain. By introducing less plastic per product, energy is saved at every stage in the plastic life cycle (as seen in the above diagram).

Commodity plastics are most commonly derived from natural gas or crude oil. Less plastic per product means less natural resource required per product, and that's just the start. There is also the indirect saving on energy required for the processing of the product, as it contains less material. This indirect energy saving subsequently benefits all stages of the supply chain, including transportation.

It is important to recognize, however, that reduction and recycling are complementary sustainability strategies. Our data indicates that VO+ polymers are as recyclable as conventional polymers.

We have strong laboratory results showing performance is maintained through multiple cycles, as well as industrial-scale demonstration.



What types of products are VO+ technology best suited to?

VOID is working with leading consumer goods companies and manufacturers to develop a range of packaging applications including bags, wraps, pouches, and thermoformed goods.

Beyond packaging, VO+ polymers are widely relevant to many applications including heavy duty industrial and agricultural uses, as well as specialty areas such as medical. The superior mechanical properties, such as puncture and tear strength, are key for these types of applications.

Typically, manufacturers need to incorporate more material to achieve these benefits, but VO+ enables an enhanced

performance profile with reduced material consumption.

With this broad set of compatible products, another big benefit of VO+ is that the environmentally-conscious consumer can enjoy a full range of today's products and make a significant reduction to their environmental impact at the same time.

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Connect with VOID Technologies on-site at the American Packaging Summit.

[View the Program](#)