

Denua

## ADVANCED PET

# RECYCLE TECHNOLOGY

### rPET Equivalent in Performance to vPET

Currently – PET recycling requires mostly high-quality, clear plastic waste to create rPET. Denua™ removes that constraint by introducing a catalytic upcycling process giving producers the ability to use low-grade, post-consumer PET to create new, high-purity feedstocks to produce rPET products suitable for high-quality food-grade and all other polyester applications.

rPET created by Denua™ retains virgin-like performance, versatility, and clarity, no matter how many times it is recycled. This technology also gives PET plant operations the ability to optimize the feedstock between virgin hydrocarbons and recycled plastics to produce high-quality rPET with up to 100% recycled content.

### KEY BENEFITS

- Converts low-quality / low-cost post-consumer PET into high-purity BHET monomers with high conversion and yields
- Excellent color, clarity and mechanical performance of the PET produced
- Easily integrated into existing PET operations or built as a standalone unit for sales or distribution of BHET
- Approximately 50% carbon emissions reduction vs vPET

### KTS & Ioniqa Partnership

The commercial availability of Denua™ is a result of the strategic partnership between Koch Technology Solutions (KTS) and Ioniqa Technologies. Ioniqa's groundbreaking catalytic upcycling process, combined with KTS's extensive experience in PET licensing and product development has paved the way for the global commercialization of this innovative technology. Together, Ioniqa and KTS have filed multiple patents, conducted slipstream experiments to validate the technology's efficacy in real-world conditions, and successfully operated a commercial asset in Geleen, Netherlands, demonstrating the practical viability and scalability of Denua™.



Learn more at [DenuaTech.com](https://DenuaTech.com)

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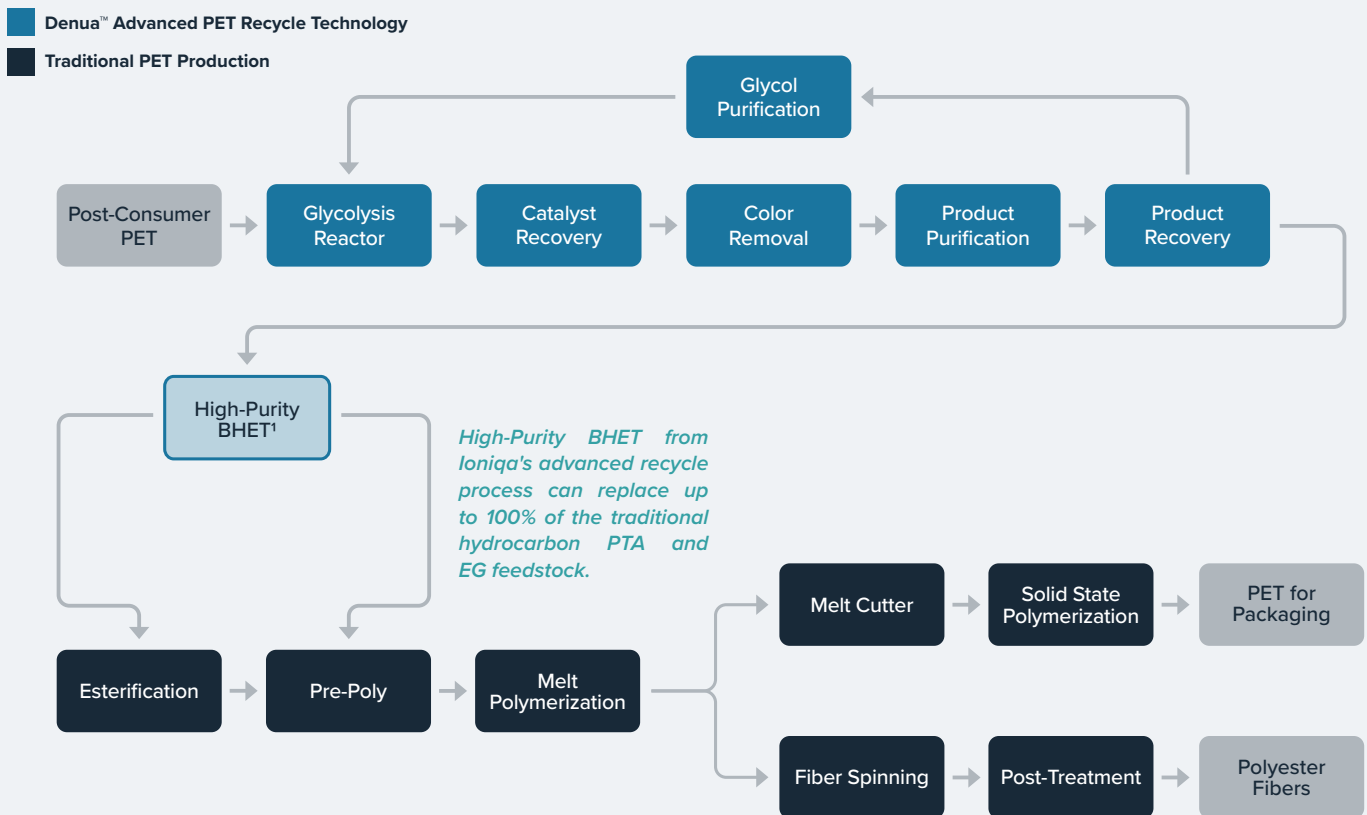
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# Easily Integrated Into Existing Operations

Denua™ technology can be easily integrated into an existing PET facility to take advantage of the infrastructure including utilities, logistics, and fundamental maintenance and operations capabilities. The High-Purity BHET produced can replace up to 100% of the virgin PTA and EG with optimal results.

Denua™ can recycle most post-consumer PET, including sorter rejects, fines, and colored flakes into high-purity BHET and subsequent PET as opposed to mechanical recycling that requires high-purity clear flake feedstock. Despite the feedstock being low-cost and low-quality, the recycled PET (rPET) produced is superior to mechanical rPET, offering excellent clarity, virgin-like color, and no degradation in mechanical properties.

## Our Process



<sup>1</sup>The Denua™ unit can be co-located at a PET Site or built as a standalone unit for the distribution of BHET to any end user.



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