

Avantium receives Critical Guidance Recognition for its bioplastic PEF from the US-based Association of Plastic Recyclers

AMSTERDAM, 27 June 2023, 07:00 hrs CEST – Avantium N.V., a leading technology provider in renewable chemistry, has been granted Critical Guidance Recognition from the Association of Plastic Recyclers (APR), a US-based international non-profit and the only North American organisation focused exclusively on improving recycling for plastics. The APR Critical Guidance Protocol is one of the most universally accepted measures for assessing recyclability in plastic packaging design. Avantium earned the recognition for the use of PEF, produced with Avantium’s YXY® Technology, in a multilayer PET bottle.

Avantium has developed its YXY® Technology to produce FDCA (furandicarboxylic acid), the key building block for the 100% plant-based and recyclable plastic material PEF (polyethylene furanoate). PEF has an attractive combination of sustainability and performance characteristics for a wide range of applications, including bottles, packaging and textiles. Avantium is currently constructing the world’s first commercial facility for FDCA in Delfzijl, the Netherlands, which is expected to be operational in 2024, enabling the commercial market launch of PEF.

PEF can be used in fully plant-based monolayer PEF bottles, but also has advantages in combination with PET. For example, PEF can be used in multilayer PET (polyethylene terephthalate) bottles as a barrier material, when the required shelf life cannot be guaranteed by a single layer of PET. Currently, many multilayer PET bottles include nylon as barrier, which is known to give issues when recycled along within the PET recycling stream. Due to its excellent barrier properties and its close resemblance to PET, a PEF layer is an excellent alternative, having a very limited influence on its recycling process.

For the APR Critical Guidance testing in the US, multilayer PET/PEF bottles containing 7 wt% and 10 wt% of PEF, were first evaluated by a third-party (Plastics Forming Enterprises LLC) and then reviewed by an independent committee, appointed per the APR Recognition Operating Procedures. Avantium demonstrated the compatibility with standard PET recycling practices, without impacting the physical properties of the recycled PET. It was concluded that both types of multilayer PET/PEF bottles meet or exceed the most challenging test conditions and strictest APR Critical Guidance criteria.

Bart Langius, commercial director Avantium Renewable Polymers, comments: “The inclusion of PEF in the prestigious APR Critical Guidance Protocol marks an important milestone in demonstrating the overall recyclability of PEF. This APR Critical Guidance recognition comes in addition to the already existing interim approval on multilayer PET/PEF and monolayer PEF bottles in Europe by the European PET Bottle Platform (EPBP). With this APR recognition, brand owners and converters can make a confident choice to use PEF as a barrier layer for their PET products. This underlines Avantium’s commitment to enable renewable high-performance solutions that address the beverage industry’s need for sustainability and recyclability and thus the transition to a circular economy.”

About Avantium

Avantium is a leading technology development company and a frontrunner in renewable chemistry. Avantium develops and commercialises innovative technologies for the production of materials based on sustainable carbon feedstocks, i.e. carbon from biomass or carbon from the air (CO₂). The most advanced technology is the YXY[®] Technology that catalytically converts plant-based sugars into FDCA (furandicarboxylic acid), the key building block for the sustainable plastic PEF (polyethylene furanoate). Avantium has successfully demonstrated the YXY[®] Technology at its pilot plant in Geleen, the Netherlands, and has started construction of the world's first commercial plant for FDCA in 2022, with planned large-scale production of PEF in 2024. The second technology is Ray Technology™ and catalytically converts industrial sugars to plant-based MEG (mono-ethylene glycol) and plant-based MPG (mono-propylene glycol): plantMEG™ and plantMPG™. Avantium is scaling up its Ray Technology™ and the demonstration plant in Delfzijl, the Netherlands opened in November 2019. Avantium's Volta Technology uses electrochemistry to convert CO₂ into high-value chemical building blocks and sustainable plastic materials, including PLGA (polylactic-co-glycolic acid). Avantium also provides R&D solutions in the field of sustainable chemistry and is the leading provider of advanced catalyst testing technology and services to accelerate catalyst R&D. Avantium works in partnership with like-minded companies around the globe to create revolutionary renewable chemistry solutions from invention to commercial scale.

Avantium's shares are listed on Euronext Amsterdam and Euronext Brussels (symbol: AVTX). Avantium is incorporated in the Euronext Amsterdam SmallCap Index (AScX). Its offices and headquarters are in Amsterdam, the Netherlands.

For more information:

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