

Kuraray develops bio-based, high-barrier, recyclable granulate for paper coating

Extrusion-coated PLANTIC™ EP paper-based pouches receive prestigious recycling certification from Western Michigan University

Hattersheim, April 11th, 2023. Kuraray, the global speciality chemicals company headquartered in Japan, has launched a new grade of its sustainable, high-performance barrier material PLANTIC™. As a plant-based granulate developed specifically for extrusion coating, PLANTIC™ EP is suitable for the development of sustainable gas and aroma-barrier solutions for paper, cardboard and traditional film substrates. A recent certificate awarded by Western Michigan University (WMU) confirms that this new material is repulpable and recyclable. It can therefore be used as the basis for sustainable barrier pouch and carton formats for brand owners and converters. PLANTIC™ EP gives the market a high-barrier material that is fully recoverable and recyclable in the US paper stream.

“Companies have recognised the importance of packaging that maintains product integrity and shelf life, while consumers don’t want to buy products that add to landfills,” says Tom Black of Kuraray’s PLANTIC™ unit. “We noticed a gap in the market and the need for a sustainable material that could be used to produce pouches and cartons with high barrier properties. It was clear that PLANTIC™ EP could be a game-changer. As well as complementing customers’ and retailers’ dynamic product ranges, PLANTIC™ EP helps them achieve their sustainability goals – thanks to certification from Western Michigan University that it is both repulpable and recyclable, enabling us all to leave behind a better world for our children.”

PLANTIC™ is produced from starch and is one of the world’s most progressive bio-based plastics. It can be used in both recyclable and compostable formats, is made from renewable, plant-based materials and provides an excellent gas barrier that prolongs the shelf-life of the packaged products. Moreover, it can significantly reduce the environmental impact compared with conventional packaging and enables re-use of materials that could not previously be recycled.

To develop a recyclable, high-barrier pouch, Kuraray applied PLANTIC™ EP to kraft paper using the extrusion coating process with a bonding/heat-sealing layer of polyethylene from Westlake. Flexible pouches and cartons with high barrier properties

can be produced using PLANTIC™ EP in combination with multi-layer films. The additional structural layers can be separated, re-used and, where appropriate, recycled or composted.

“In this collaboration with Kuraray, we used all our application development resources to create a really unique offering,” says Amy Moore, Vice President of Westlake. “We see the benefits of Kuraray’s technology and look forward to working together on further developments as Kuraray commercialises the technology across the bandwidth of market segments and categories.”

Speciality chemicals expert Kuraray recognised brand owners’ the need for sustainability-certified packaging. Therefore, it asked WMU to assess the repulpability and recyclability of the PLANTIC™ EP/Westlake pouch made from coated paper. Since PLANTIC™ EP can be completely washed out in the recycling process, WMU certified the recyclability of the PLANTIC™ EP/Westlake pouch in October 2022.

“WMU certification as confirmation of recyclability is an important first step in securing a [How2Recycle](#) label,” says Black. “When developing packaging formats for brand owners, producers want to see that the materials they are using have been vetted by WMU. Certification enables them to apply to How2Recycle for a pre-validation letter, which speeds up the introduction of PLANTIC™ EP-based high-barrier solutions.”

PLANTIC™ EIP is currently available for testing and is already being used commercially by several brands around the world. Specific application scenarios include the production of pouches and cartons for products such as coffee, pet food, dry goods, and so on.

Kuraray is currently assessing the recyclability of this product in European recycling streams. Initial internal test results are now available and are promising. For further information please contact: Stefan.corbus@kuraray.com.

About PLANTIC™

PLANTIC™ contains more than 80 percent corn starch, a renewable and fully biodegradable raw material. Thanks to its high gas barrier properties, this high-performance film enables the development of sustainable multi-layer packaging that effectively keeps out oxygen and optimally preserves aromas. Therefore, PLANTIC™ can also be used in modified atmosphere packaging (MAP) for food with a longer shelf life, for example, for odour-free packaging of dry foods. In bags, trays, tubes and pouches, combined with paper or plastics, PLANTIC™ is versatile and can be applied by extrusion coating, lamination or extrusion lamination.

Through its combination of an effective gas barrier and solubility in water, PLANTIC™ is a step towards a circular economy. Since the PLANTIC™ layer simply dissolves in water, additional inner sealing layers can be separated cleanly from paper in the repulping process. That increases the yield of paper fibres, resulting in pulp without

specks and impurities. The PLANTIC™ layer also dissolves during high-temperature washing in conventional PET recycling streams and decomposes into biomass, CO₂ and water without any residues. PLANTIC™ biopolymer is certified for industrial and home composting. It does is produced without plasticisers and genetically modified raw materials and allows energy savings of up to 40 percent compared with conventional polymers.

About Kuraray

Established in 1991, Kuraray Europe GmbH is based in Hattersheim, near Frankfurt am Main, Germany. In 2021 the company generated annual sales of EUR 1.1 billion. It has more than 820 employees in Germany at its sites in Hattersheim, Frankfurt and Troisdorf. Kuraray is a global speciality chemicals company and one of the largest suppliers of industrial polymers and synthetic microfibres for many sectors of industry. Examples are Kuraray Poval™, Mowital®, Trosifol® and Clearfil™. Kuraray Europe also has around 215 employees at six other European sites. They are also working on the development and application of innovative high-performance materials for a wide range of sectors, including the automotive, paper, glass and packaging industries, as well as for architects and dentists.

Kuraray Europe is a wholly owned subsidiary of the publicly listed Kuraray Co., Ltd., which is based in Tokyo, Japan, and has more than 11,330 employees worldwide and sales of EUR 4.8 billion.

This press information including images is available at:
<https://www.packaging.kuraray.eu/>

About Westlake

Westlake is a global manufacturer and supplier of materials and innovative products that enhance life every day. Headquartered in Houston, Texas, USA, with operations in Asia, Europe and North America, it provides the building blocks for vital solutions – from housing and construction through packaging and healthcare to the automotive and consumer goods industries.

Press contacts:

Dr. Bettina Plaumann
Head of KEG Communications & Marketing
Kuraray Europe GmbH

Philipp-Reis-Straße 4
65795 Hattersheim am Main, Germany
Phone: +49 69 305 85797
Email: Bettina.Plaumann@kuraray.com
Internet: www.kuraray.eu

Anne Vogel
Senior Consultant
Möller Horcher Kommunikation GmbH

Berliner Str. 300b
63065 Offenbach am Main, Germany
+49 69 809096 42
anne.vogel@moeller-horcher.de
www.moeller-horcher.de