



- Press release -

## **CARBIOS depolymerizes 90% of PLA material in 48 hours with its innovative enzymatic process**

**Clermont-Ferrand, France, November 20th, 2014** – Carbios (NYSE Alternext in Paris: ALCRB), an innovative green chemistry company specializing in breakthrough technologies dedicated to the recovery of plastic waste and the production of bio-polymers, announces that it successfully managed to depolymerize 90% of polylactic acid (PLA) material – a thermoplastic aliphatic polyester derived from renewable resources – in only 48 hours, using its cutting-edge enzymatic process.

These exceptional results were obtained by the team from the French National Institute for Agricultural Research (INRA) in Toulouse, France (Toulouse White Biotechnology (TWB) and the Systems Biology and Process Engineering Laboratory (LISBP)) both of which are Carbios' partners on the Thanaplast™ project. They have prompted Carbios to continue successfully developing its depolymerization process of polyesters, including PLA plastic wastes.

The enzyme patented by Carbios induces the catalytic depolymerization of PLA waste at a rate that comes close to industrial performances. Such catalytic activity was tested on consumer goods made of PLA, including cups, trays, plastic films and flatware, whose semi-crystalline properties make it difficult for the enzyme to operate. This exceptional performance marks the beginning of the production scale-up of Carbios' bio-recycling process. It allows the company to contemplate a faster manufacturing process than had been initially scheduled.

PLA is the fastest-growing market in the plastic industry, credited with a 10% to 30% increase depending on the sources (European Bioplastics, Nova Institute, etc.). With a relatively low yearly production of 200 000 tons, this bio-based plastic polymer also has a significant growth potential due to its extraordinary physical and chemical properties, which make it the main alternative to polyethylene terephthalate (PET), the primary plastic polymer used for plastic bottles and other packaging products. Compared to PET, PLA has two significant advantages: its biocompatibility (it is a material of choice for medical transplants and implants); and its perfect fit for 3D printing techniques.

The results obtained by Carbios with PLA will enable the company to expand its technology to other plastic polymers, including PET and PTT, the latter of which is the main component of carpets.

*“These unprecedented results validate Carbios' strategy and the company's ambition to manufacture its patented environmentally friendly PLA depolymerization method. By breathing new life into the plastic waste industry, they confirm Carbios' position as a major player in the circular economy,”* concluded Jean-Claude Lumaret, CEO of Carbios.

## **About Carbios**

Carbios is a young, innovative green chemistry company, whose mission is to find biological solutions to the environmental and sustainable development issues faced by industrial businesses today. Carbios acquired the rights to research that was conducted over a number of years by various public and private sector laboratories. By leveraging the unique properties of biological catalysts (enzymes), it has used this research as the foundation for developing innovative industrial bioprocesses that optimize the technical, economic and environmental performance of polymers (thermoplastic materials and synthetic or food-based fibers). The company has focused its efforts on a strategic application sector: plastics. Carbios' growth strategy is based on a clear business model of industrial value creation that targets attractive markets, develops innovative and competitive bioprocesses and licenses them to major industrial stakeholders for commercialization. Carbios benefits from the financial support of the leading European venture capital firm Truffle Capital. Carbios was founded in 2011 and, since its inception, has been managed via the *Holding Incubatrice Chimie Verte* fund. Carbios was granted the label "Young Innovative Company" by BPI France (former OSEO) and is eligible for investments by private equity mutual funds (FCPIs).

For more information, please visit: [www.carbios.fr](http://www.carbios.fr)

Carbios is eligible for the PEA-PME, a government program allowing French residents investing in SMEs to benefit from income tax rebates.



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