CARBIOS
Enzymes powering the Circular Economy

- PRESS RELEASE –

Carbios takes textile circularity a step further with its enzymatic recycling technology

- **Carbios has succeeded in producing a 100% enzymatically recycled white PET[1] fiber from colored textile waste**
- **At the same time, the company has produced the first 100% recycled PET bottles from the same textile waste[2]. These bottles have successfully passed the food contact validation tests**
- **Carbios received €827,200 for the validation of this final technical stage of the project co-funded by ADEME[3]**

Clermont-Ferrand, March 10, 2022 (6 : 45 am CET) - Carbios (Euronext Growth Paris: ALCRB), a pioneer in the development of enzymatic solutions dedicated to the end-of-life of plastic and textile polymers, announced today the validation of the 3rd and final technical step of the CE-PET research project, co-funded by ADEME[3] (France's Environment and Energy Management Agency), for which Carbios is the lead partner alongside its academic partner TWB[4]. This achievement confirms, once again, the full potential and breadth of Carbios' enzymatic recycling process, C-ZYME™. This breakthrough innovation makes it possible to produce a wide variety of products of equivalent quality to those of petro-sourced origin from any PET waste, including textiles.

The first white PET fiber recycled enzymatically from colored textile waste

Worldwide, around 90 million tons of PET are produced each year, more than 2/3 of which are used to manufacture fibers[5]. However, only 13% of textile waste is currently recycled[6], mainly for downcycling, i.e. for lower quality applications (such as padding, insulators or rags). By successfully manufacturing at pilot scale a white PET fiber that is 100% enzymatically recycled from colored textile waste, Carbios is paving the way for the circular economy in the textile industry. C-ZYME™ is now on the doorstep of industrialization and will soon enable the biggest brands to move closer to their sustainability goals.

Emmanuel Ladent, Chief Executive Officer of Carbios: *« Thanks to our breakthrough process, it will soon be possible to manufacture, on a large scale, t-shirts or bottles using polyester textile waste as raw material. This is a major breakthrough that gives value to waste that currently has little or no value. It is a concrete solution that opens up a global market of 60 million tons per year of potential raw materials and will help to reduce the use of fossil resources. »*

Textile waste that can also be used to manufacture food contact packaging

In November 2020, Carbios had already produced the first transparent bottles from textile waste. These 100% recycled PET bottles have now passed the food contact validation tests. This is an important step that paves the way for the use of a new waste source for the production of biorecycled PET food packaging.

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[1] Polyethylene terephthalate
[2] *Cf.* Press release 19 november 2022
[3] Project carried out under the Programme d'investissement d'Avenir (PIA n°1882C0098) operated by ADEME
[4] Toulouse White Biotechnology
[5] Sources: IHS Markit in 2021
[6] Sources: Ellen MacArthur Foundation in 2017 & Carbios estimates

Separate collection of textile waste soon to be mandatory in Europe

From 1 January 2025 the separate collection of textile waste, which is already in place in some countries, will be mandatory for all EU Member States (European Directive 2018/851 on waste). Carbios' process will be one of the solutions that will enable this waste to be sustainably recovered and included in a true circular economy model.

These technological validations were carried out as part of the CE-PET research project, co-funded by ADEME[3]. In particular, the project aimed to develop Carbios' enzymatic PET recycling process on textile waste. The C-ZYME™ technology is complementary to thermomechanical recycling and will make it possible to process plastic and textile waste deposits that are currently not or poorly recovered. For the validation of this stage of the project, Carbios received €827,200 (€206,800 in grants and €620,400 in repayable advances).

About Carbios: Carbios, a green chemistry company, develops biological and innovative processes representing a major innovation in the end of life of plastics and textiles. Through its unique approach of combining enzymes and plastics, Carbios aims to address new consumer expectations and the challenges of a broader ecological transition by taking up a major challenge of our time: plastic and textile pollution.

Established in 2011 by Truffle Capital, the mission of Carbios is to provide an industrial solution to the recycling of PET plastics and textiles (the dominant polymer in bottles, trays, and textiles made of polyester). The enzymatic recycling technology developed by Carbios deconstructs any type of PET plastic waste into its basic components, which can then be reused to produce new PET plastics of a quality equivalent to virgin ones. This PET innovation, the first of its kind in the world, was recently recognized in a scientific paper published in the prestigious journal Nature. Additionally, Carbios is working hand in hand with multinational brands — like L'Oréal, Nestlé Waters, PepsiCo and Suntory Beverage & Food Europe — to implement its technology, and to lead the transition toward a truly circular economy.

The Company has also developed an enzymatic biodegradation technology for PLA (a bio sourced polymer) based single use plastics. This technology can create a new generation of plastics that are 100% compostable in domestic conditions, integrating enzymes at the heart of the plastic product. This disruptive innovation has been licensed to Carbiolice, a joint venture created in 2016, which is now Carbios' subsidiary.

For more information, please visit www.carbios.com/en
Twitter: Carbios LinkedIn: Carbios Instagram : carbioshq

ALCRB EURONEXT GROWTH — ELIGIBLE PEA PME

Carbios (ISIN FR0011648716/ALCRB) 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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