

Start-up Carbiolice launches Evanesto[®], the first additive that allows plastics with a high PLA content to achieve certification "OK compost HOME" by TÜV AUSTRIA Group

The Auvergne-based start-up Carbiolice has developed Evanesto[®], an enzymated additive that, when added to the manufacture of plant-based plastic packaging made from PLA*, makes it 100% compostable even in domestic conditions. The introduction of this additive will allow films containing 33% PLA to be certified "OK compost HOME" by the TÜV AUSTRIA Group, a worldwide certification reference.

A solution that allows plastic of vegetable origin to be compostable, even from home, in a maximum of 180 days.

After 4 years of research and development and thanks to the exclusive license granted by Carbios, Carbiolice has developed an additive called Evanesto[®], which, when added to the vegetable plastic (PLA*), makes it compostable **even in domestic conditions**. Previously compostable only under industrial conditions, Carbiolice's innovation increases the possibilities of recycling PLA plastic waste.

Thanks to the introduction of Evanesto[®] at the time of manufacturing of PLA-based plastic products, packaging films, lids, and soon yoghurt cups, trays, ... which are today difficult to recycle, will be able to biodegrade completely in industrial or domestic composts.

After a series of tests on product lines and studies with certified organizations, **Carbiolice is currently launching on the market its revolutionary solution that solves the problem of the end-of-life of PLA-based plastics.**

The first additive allowing PLA-rich films to be certified "OK compost HOME".

TÜV AUSTRIA, world leader in the certification of bioplastics, offers environmental marks of product conformity in the form of a certification label adapted to different biodegradation environments. The OK compost HOME certification **guarantees complete biodegradation under the particular conditions of home composting**. Constraints such as a lower and less constant temperature of the compost bin in a garden make **home composting more difficult and slower than in an industrial composting center**.

This is therefore the first time that a solution has been provided to enable plastics with a high PLA content to achieve this certification: until now, only products containing less than 10% PLA could potentially meet the requirements of the OK compost HOME certification program. By accelerating the biodegradation process, Evanesto[®] now allows products richer in polylactic acid to obtain this certification.

Precisely, **the finished product containing Evanesto[®] can be certified** if it is integrated at a **minimum concentration of 5%** into a film containing **33% PLA** and a **maximum thickness of 60 µm for monolayer films and 30 µm for multilayer films**.

The close collaboration between TÜV AUSTRIA and Carbiolice will allow industrials and manufacturers of finished products **to facilitate their own OK compost HOME certification process when their products (packaging films, salad bags, lids...) contain Evanesto®**.

This collaboration has also enabled the implementation of a method that meets TÜV AUSTRIA's need to control the conformity of products on the market. Thus, **it will be possible to quickly validate samples by performing depolymerization tests in an accelerated way**. This method, developed for 4 years by Carbiolice, has just been **implemented in a French laboratory, accredited by the COFRAC** (French Accreditation Committee) - Laboratories section - on its Chemistry, Metallurgy and Environment departments. This method consists in dissolving a sample of finished product under controlled conditions (pH, temperature...) to simulate the degradation of the material in a domestic composting environment by measuring the depolymerization of PLA into lactic acid by HPLC. **Only 5 to 20 days will be necessary to validate the conformity of the finished products.**

Household composting: soon an obligation

Following the French law on energy transition and green growth (LTECV) of 2015, and the European Directive n°2018/851 of May 30, 2018: **every household will have to sort its bio-waste by December 31, 2023 at the latest**. Local authorities will therefore have to provide a specific sorting solution: the production of compost that can be used to fertilize green spaces or sold to businesses and individuals.

According to ADEME**, there are 254 kg/year of residual household waste per inhabitant in France, including 83 kg of fermentable waste and 37 kg of plastics. **By recovering its bio-waste and domestically compostable plastics, it will therefore be possible to reduce by half the current volume of our grey garbage cans**. The challenge now lies in the implementation of a simple labeling, which will allow the consumer to identify which products can be introduced with the bio-waste.

Verbatim from Nadia Auclair, President of Carbiolice

"This certification fulfills the Evanesto® promise: for the first time, it is now possible to consider a responsible end-of-life for non-recyclable plastics, even from home. Because Carbiolice's ambition is to reach zero plastic waste, we are also launching a certification process with TÜV AUSTRIA Group for products with a thickness of 450 µm, to certify that Evanesto® is part of an even wider field of applications (allowing for example yoghurt pots, trays, cups to be composted in the middle of our other organic waste...)"

*PLA: polylactic acid, a plastic made from corn or sugar cane.

** Source: ADEME figure: Waste Key figures : The essentials 2019



About Carbiolice

Carbiolice is an innovative French company that was created in 2016 to develop a new sector of bioplastics 100% compostable and 100% biodegradable.

Based in Riom, in the heart of Auvergne, and headed by Nadia Auclair, a polymerist by training, the start-up Carbiolice, in close collaboration with the world leader in the production of enzymes, Novozymes, has developed an enzyme additive which, added to the manufacture of plastic packaging of plant origin (PLA), makes it possible to make them 100% compostable under domestic conditions in 200 days. Carbiolice holds an exclusive license for the enzyme technology developed and patented by Carbios.

The start-up is supported by two shareholders: Carbios, a green chemistry company that designs and develops innovative enzymatic processes, and the SPI investment fund operated by Bpifrance. The two shareholders have just renewed their confidence in Carbiolice with a new contribution of €7.3 million, bringing the company's capital to €29.5 million.

Carbiolice now has 25 employees and was awarded the 2019 Prize for the most innovative biotech company in Europe (awarded by the Europa Bio association).

To know more: www.carbiolice.com

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About TÜV AUSTRIA Group

TÜV AUSTRIA Group is the largest independent testing, inspection and certification company in Austria. Founded in 1872, the company stands for quality and transparency. All of the group's worldwide revenues are invested in supporting innovation and training in the interests of quality, safety and environmental protection.

Whether industrial companies, plant operators, the commercial or service sector, start-ups, company founders or the municipal sector, safety plays an important role in all cases. TÜV AUSTRIA Group's competence in the areas of technology, safety, environment, quality and sustainability guarantees technical safety for companies and consumers, conserves resources and contributes to the improvement of products and services. TÜV AUSTRIA Group, an international company with branches in more than 40 countries, employs more than 2,000 staff and generates a turnover of 200 million euros.

On December 1, 2017, TÜV AUSTRIA Group took over the OK compost & OK biobased labels from the Belgian testing institute Vinçotte and integrated the corresponding experts and certification activities into TÜV AUSTRIA Belgium.

With its extensive portfolio of product certifications, OK compost is clearly in the number one position in Europe. In addition, with its network of partners outside Europe, it is active in more than 40 countries.