

**BIO-
-DEGRA-
DABILITY
IS THE
FUTURE**

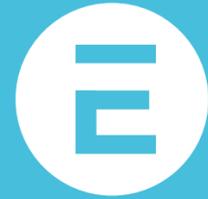


CARBOLICE

Biodegradability is the future

Carbiolice is a french joint-venture established in 2016, based on the shared ambitions of CARBIOS, of the SPI investment fund oprated by Bpifrance and Limagrain Ingredients.

Its aim is to design, produce and commercialize **patented solutions that speed up compostability of biobased products** for single-use plastics and packaging, to achieve zero waste and provide an answer to sustainable development issues.



EVANESTO

Zero Impact PLAstic

CARBOLICE INNOVATION
to make PLA materials **fully compostable**



Unique and patented enzymated concentrate



Environment-friendly end-of-life, free from any toxic by-product



Plastics' properties conservation
Shelflife, barrier properties, mechanical resistance...
Processability improvement

All Contents - photo credits: randerpeople.com, Shutterstock



EVANESTO



“ At CARBIOLICE, we see compostable packaging as a legitimate complement to recycling and a reasoned consumption mode. All initiatives must be considered in the fight against this plastic scourge! ”

Nadia AUCLAIR, CEO of CARBIOLICE

**ZERO
IMPACT
PLASTIC**

Do not throw on the public highway



ZAC de La Gravière - 4 Rue André Messager - 63200 Riom - France

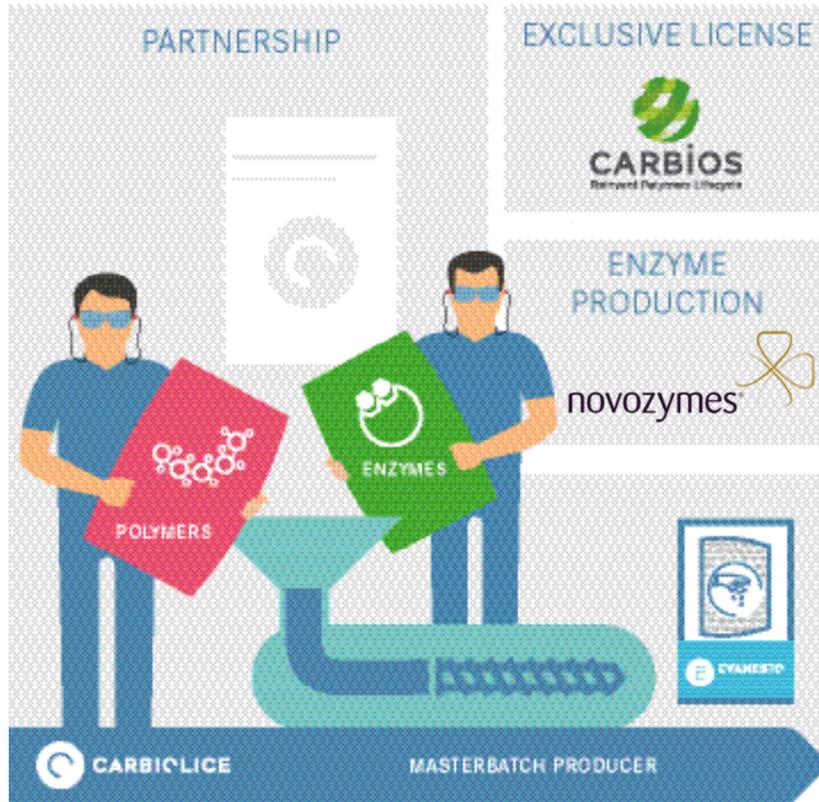
Tél. : +33 (0)4 73 33 03 00

www.carbiolice.com



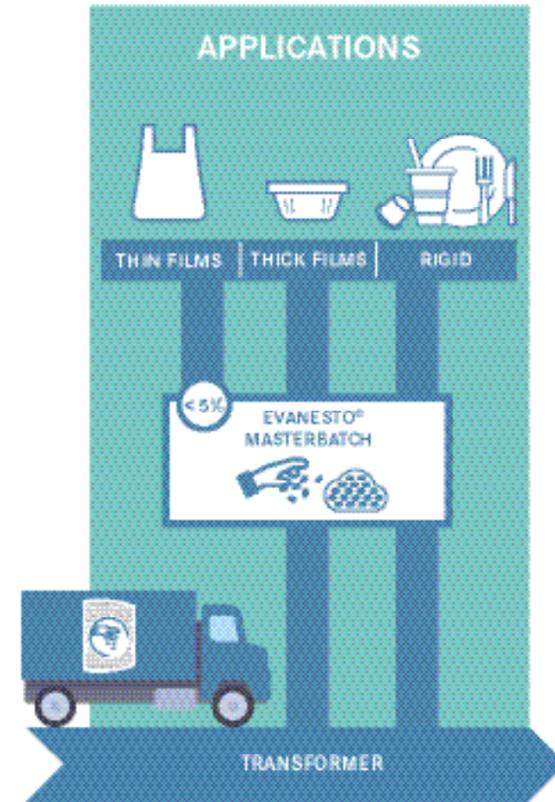
EVANESTO[®], an enzymated concentrate to make PLA materials fully compostable in domestic conditions

Evanesto[®] Production



CARBOLICE formulates the enzyme produced by its partner Novozymes so that the enzyme activity is protected at high temperatures. The enzyme takes the form of an additive named EVANESTO[®].

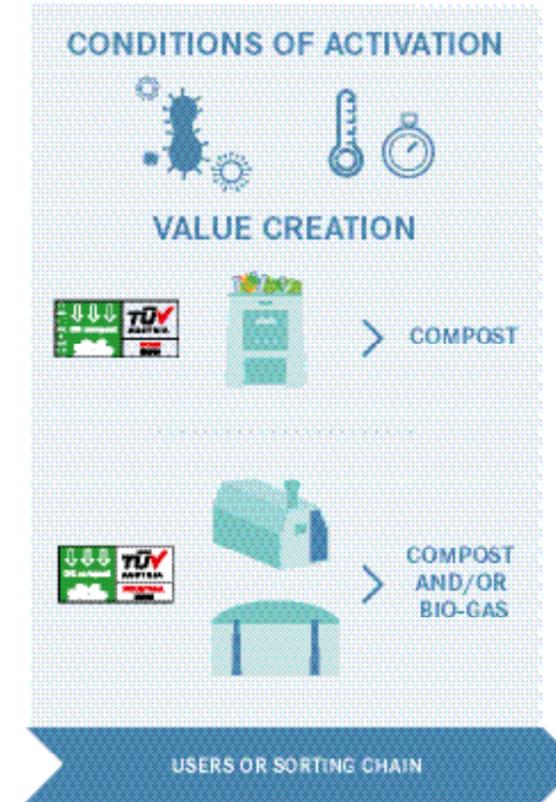
Evanesto[®] Inside



EVANESTO[®] is added to a compound with a high content of PLA during conventional converting processes like film extrusion, thermoforming, injection molding.

The enzyme is inactive during the entire period of the product use.

Evanesto[®] Activation



A combination of conditions is necessary to activate the enzyme. With EVANESTO[®], PLA becomes compostable in home composting conditions (NF T51-800). It facilitates and accelerates industrial composting and generates bio-gas in methanization.



EVANESTO
Zero Impact PLAsTic

CARBOLICE has successfully created an innovative, unique and universal sustainable solution for PLA based plastics. By combining its expertise in compounding, formulation and process development with the enzyme technology developed by Carbios, its main shareholder, CARBIOLICE makes PLA fully compostable in domestic conditions (NF T51-800).

EVANESTO[®] INSIDE

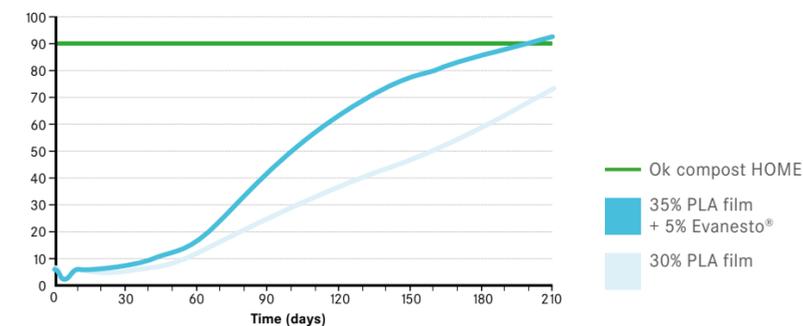


35% PLA content in 15 μm thin blown films results, in home composting conditions.

Tests carried out by the independent laboratory OWS in home composting conditions, on thin films with a 35% PLA content and a 5% EVANESTO[®] rate, the rest being other biodegradable polyesters, such as PBAT, TPS...



Relative biodegradation (%)



EVANESTO[®] will be commercialized at the beginning of 2020 for films before a wider commercialization for rigid packaging.