

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



CARBICLANCE

Biodegradability is the future



“Reconciling human activity and respect for the environment – is this impossible?”

Depletion of non-renewable resources, increased regulatory requirements, consumer pressure.

Contemporary environmental issues question our behavior and incite us to reinvent our production methods.

Firmly convinced that plastic can serve the interests of humanity while respecting the planet, Carbiolice develops green, innovative solutions, that offer an effective alternative to oil-based materials.

Designed for integration into the processes of our industrial customers without disrupting them, these new generations of fully biodegradable products meet the most demanding standards.”



Nadia AUCLAIR,
Chief Executive
Officer
of Carbiolice

The environmental impact of single-use plastic – is this really unavoidable?



Preservation, sturdiness, cleanliness – disposable plastic has several irreplaceable benefits. Our solutions now mean that this material can retain its many advantages while guaranteeing total

elimination through biodegradation at the end of its use. Food packaging, coffee capsules, bin bags, supermarket fruit and vegetable bags, Christmas tree bags, agricultural

mulching films, films for seaweed and mud therapy, but also disposable cutlery and plates, cotton buds, diapers, toys and even pens... As many applications possible thanks to our solutions!

OUR BUSINESS



Carbiolice is a French company with expertise in the development and the production of bioplastics.

Committed to sustainable development and the circular economy, we produce today's biopolymers, and tomorrow we will produce masterbatches that redefine the lifecycle of plastics, achieving zero waste!

OUR MISSION

Creating integrated, innovative and economic biodegradation solutions to ensure plastics end their lives truly respectful of the environment.

OUR STRENGTHS

- ☉ Expertise in bio-based materials obtained from the know-how of Limagrain, the 4th largest world seed company.
- ☉ An exclusive license from CARBIOS enzymatic biodegradation technologies.
- ☉ A direct link from our research center to our industrial site means we can certify the production launch of our solutions.
- ☉ An applications laboratory serving our experts, enabling us to validate our solutions in new products development.

A startup at the heart of industrial know-how

15 years of industrial experience in the bioplastics business, including five years of research,

gave birth to Carbiolice, an agile startup endowed with know-how and industrial organization. Ensuring that the requisite resources are available to achieve its ambitions, Carbiolice is now positioned as a provider of innovative solutions in the use of enzymes to biodegrade single-use plastics on a worldwide scale.

Certified ISO 9001, Carbiolice has thus become a creator of opportunities in an increasingly restrictive legal and economic environment.

ORIGINS IN AGRICULTURAL MULCH FILMS.

Precursor of mulching in France since 1965, the agricultural cooperative Limagrain began working on the development of biodegradable mulch films. This success drove to the birth of Biolice® products, **the first French compostable and biodegradable plastic raw material.**

1996

CONQUEST OF PLASTIC BAGS AND INTERNATIONAL MARKETS.

Biolice® biopolymers **were launched for plastic bags applications.** **Hi (humanity & inclusion)** exploited our expertise to develop a **100% biodegradable Christmas tree bag.** **Gamm Vert proposed** 100% compostable plastic checkout bags using our polymers. At the same time, business expanded beyond our national frontiers with success in the United Kingdom, India and China.

2006

FOUR KEY DATES

THANAPLAST™, R&D PROGRAM FOR A DISRUPTIVE TECHNOLOGY

CARBIOS, the inventor and owner of the enzymatic biodegradation of plastics launched **Thanaplast™, the collaborative research project** with different academic and industrial partners such as Limagrain Céréales Ingrédients. The success of this project gave birth to Carbiolice a few years later...

2012

CREATION OF CARBIOLICE.

Carbiolice is the fruit of the shared, complementary ambitions of **Limagrain Céréales Ingrédients**, a global seed company, **CARBIOS**, a green chemistry company developing enzymatic technologies, and the investment fund **SPI**, managed by **BPIFRANCE.**

2016



BIOLICE

Compostable Compounds

A plasturgist in today's world

In a changing market, Carbiolice can offer a bio-based and biodegradable substitute solution to standard plastic on an industrial scale.

We produce and sell bio-based compounds under the brand name **Biolice®**. This range of products is the result of agricultural know-how, partially bio-based with a high added value. It complies with the European Directive 2015/720 on the reduction of plastic bags and the French law on Energy Transition for Green Growth (LTECV). **Biolice®** provides manufacturers with biopolymer compounds (made from flour rich in

starch) for the production of plastic films usable with conventional industrial tools for various food and non-food applications (bags, mulch films and technical films...). These biopolymers, often known as resins or compounds, are **100% compostable** and **100% biodegradable** according to standards EN 13432. Entirely manufactured in France, they are suitable for food contact and certified GMO-free thanks to our integrated chain.

BIOPLASTURGY SPECIALIST



OUR MEANS

- 1 high-tech industrial line
- 1 testing and quality control laboratory



A major player in tomorrow's biotech industry

Always seeking innovative and environmentally friendly technologies, we support industrial companies in the goal to achieve the complete biodegradability of single-use plastics.

For each application (disposable tableware, packaging, non-woven fabric, etc.) our objective is to provide industrial companies with alternative, biodegradable solutions that are easy to use and retain their technical properties.

We hold an exclusive license for enzymatic biodegradation technologies, and by 2020 we will be developing enzymated masterbatches.

Using these novel concentrates, biodegradation can be programmed according to the needs of each application and to relevant legislative provisions to reach zero waste.

Our masterbatches provide solutions at all phases of the value chain.

- Supplied as pellets, they can be used with conventional industrial equipment.
- They are concentrated and very economical.
- A range of products specialized to meet specific constraints of different final applications.

The products obtained with our technology, can biodegrade in the most challenging environments: in domestic composting conditions, in the marine environment...

OUR
MEANS

- 1 exclusive license for enzymatic biodegradation technologies (patents that cover the whole world)
- 1 research center, CARBIOS, providing technical assistance



A Research & Development department focus to innovation

OUR MEANS

- 2 pilot lines
- 1 application and characterization laboratory

This department, the company's true driving force, develops the innovative products of tomorrow, and works on new challenges and ambitions such as:

- responding to current and future market needs by developing simple solutions, involving few constraints, innovative and economic,
- facilitating use by manufacturers,
- obtaining certification whatever the environment (land and water),
- increasing the bio-based content to 100% to extend applications,
- focusing on new biopolymers to make them biodegradable for tomorrow,
- expanding the number of applications.





Food contact



Bio-based



100% compostable
100% biodegradable



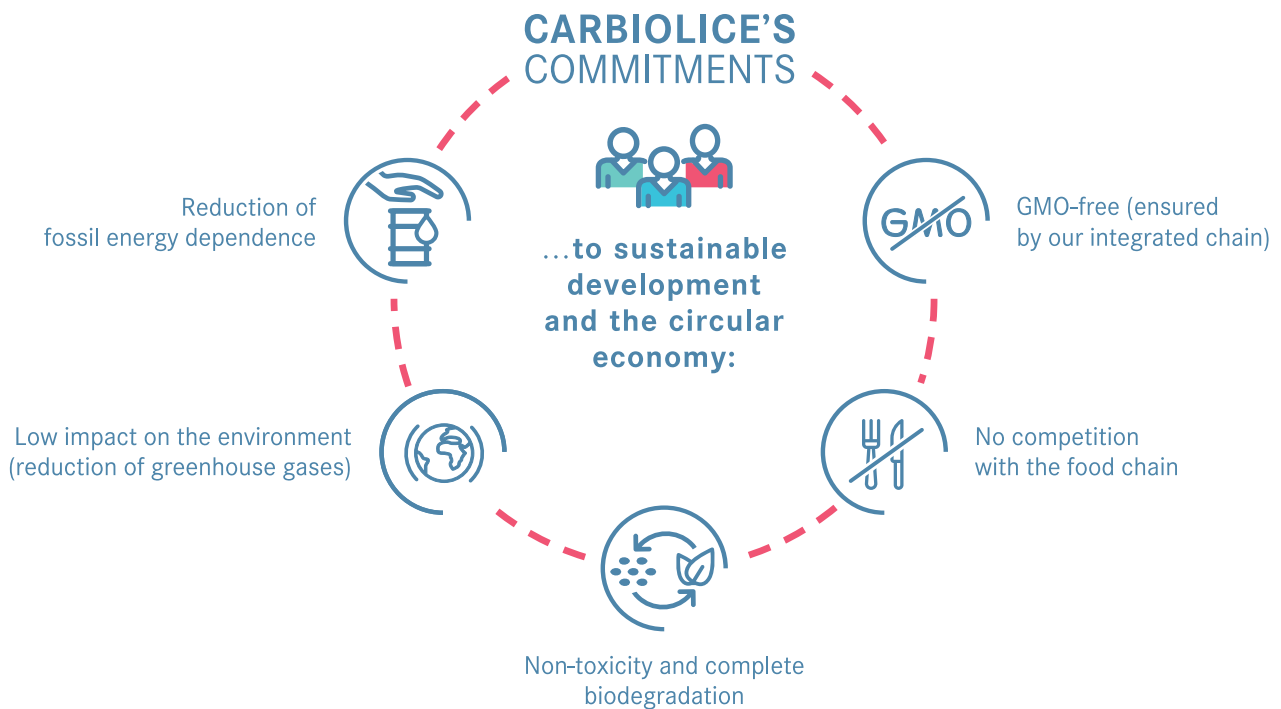
Made in France





BIO- -DEGRA- DABILITY IS THE FUTURE

This new base-line expresses a true promise. Plastic can serve people's interests while respecting our planet! This is the belief of Carbiolice, which is committed to providing industrial companies with efficient, integrated, innovative and economic biodegradation solutions to ensure plastics end their lives truly respectful of the environment.



Carbiolice has endorsed the statement made by the Ellen MacArthur Foundation which advocates the banning of oxo-degradable plastic packaging throughout the world.



For further information please contact our **Customer Technical Support Engineer**

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CARBIOLICE SAS with a capital of € 15 500 000 - SIREN Number 820 924 801
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