



L'OCCITANE  
EN PROVENCE

## L'OCCITANE en Provence and CARBIOS present a PET bottle made from enzymatic recycling, the result of a European circular economy

- CARBIOS, L'OCCITANE en Provence and Pinard Beauty Pack join forces to establish an efficient European value chain for PET circularity
- The 100% biorecycled transparent bottle (from enzymatic recycling) will be on display at CARBIOS' booth D02 at "Edition Spéciale" by LuxePack, held 4-5 June at the Carreau du Temple in Paris
- A key step towards achieving L'OCCITANE en Provence's eco-design commitment of 100% retail bottles made from 100% post-consumer recycled PET by 2027



Figure 1 : L'OCCITANE en Provence's first bottle made from 100% enzymatically recycled PET using CARBIOS' technology

Clermont-Ferrand and Manosque (France), Thursday 30 May 2024 (6pm CEST). CARBIOS, (Euronext Growth Paris : ALCRB), a pioneer in the development and industrialization of biological technologies to reinvent the life cycle of plastic and textiles, and L'OCCITANE en Provence, an international cosmetics brand using natural and organic ingredients, a long-term partner of CARBIOS, present a bottle in transparent PET made entirely from enzymatic recycling for a shower oil from the *Amande* range. In collaboration with converter Pinard Beauty Pack, this bottle exemplifies a shared desire to build an efficient European recycling sector to accelerate the transition to a circular economy for plastic, and meet brands' commitments for more sustainable packaging solutions. The bottle will be on display at CARBIOS' Stand D02 at "Edition Spéciale" by LuxePack, the trade show dedicated to sustainable premium packaging, to be held on 4-5 June 2024 at the Carreau du Temple in Paris.

### A sustainable European recycling sector set in motion

The 100% recycled PET bottle from CARBIOS' enzymatic depolymerization process was made with a European value chain committed to responsible consumption of sustainable materials. The bottle's

production began with the local supply of PET waste (already collected, sorted and prepared) to the CARBIOS industrial demonstrator in Clermont-Ferrand, France. The waste used consisted of colored bottles, multilayer trays and mechanical recycling residues, none of which are currently recycled using conventional technologies. CARBIOS deconstructed the PET waste into its original monomers, PTA<sup>1</sup> and MEG<sup>2</sup>, using its biorecycling technology. The resulting monomers were then repolymerized into new, fully recycled PET resins within Europe. In Oyonnax, France, these resins were blow-molded by Pinard Beauty Pack to create bottles according to L'OCCITANE's specifications, and then filled with its shower oil at its Manosque plant.

This European approach optimizes the environmental benefits of the technology and the life cycle analysis (LCA) of each product, by reducing transport distances and integrating local collection and production processes. To meet the needs of international brands, similar chains will have to be established worldwide, drawing inspiration from this example.

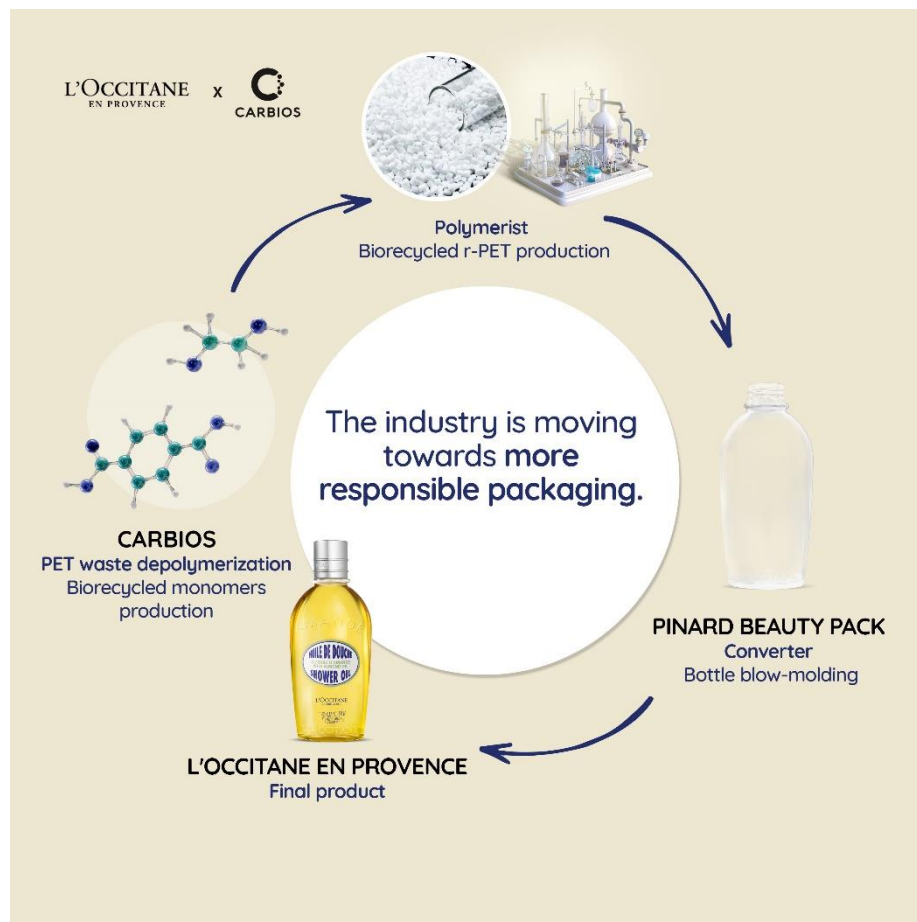


Figure 2: The industry is moving towards more responsible packaging (L'OCCITANE en Provence, CARBIOS, Pinard Beauty Pack)

**Emmanuel Ladent, CEO, CARBIOS :** « CARBIOS' innovation accelerates the transition to a circular economy by offering an alternative to petro-sourced PET and a circular PET recycling solution that reduces CO<sub>2</sub> emissions by 57%. But to create an efficient recycling sector, all players in the value chain have their part to play, and must work together. The long-term partnership between CARBIOS and

<sup>1</sup> Purified Terephthalic Acid

<sup>2</sup> Monoethylene Glycol

*L'OCCITANE is testament of this shared desire to promote more responsible consumption. The bottle produced with L'OCCITANE and its converter Pinard illustrates how the industry is moving forward. »*

**David Bayard, R&D Packaging Director, L'OCCITANE :** « At L'OCCITANE en Provence, we're Cultivators of Change, and we're proud to be part of this forward-looking industry. Today, just over 50% of our PET material is from recycled origin. Thanks in particular to CARBIOS and depolymerization technologies, we will be able to reach 100% by 2027 for all our retail bottles. We are very satisfied with the quality of the bottle produced in collaboration with CARBIOS and Pinard, which enables us to reduce our reliance on fossil-based plastic and offers a viable alternative with equivalent quality and transparency, which is important to showcase our products. »

**Paolo Coelho, Plant Director, Pinard Beauty Pack :** « At Pinard, we are delighted to have reached this new milestone and to be associated with the production of L'OCCITANE en Provence's first bottle using CARBIOS' revolutionary technology. This bottle was blow-molded under the same conditions and with the same parameters as virgin or mechanically recycled PET, a considerable advantage for the deployment of CARBIOS' technology. We're seeing strong demand for high-quality recycled PET which can be used to produce the same applications as with virgin PET. »

### **The environmental benefits of CARBIOS biorecycling technology**

Recent life-cycle analyses<sup>3</sup> show a 57% reduction in CO<sub>2</sub> emissions compared to virgin plastic production<sup>4</sup>, and for every tonne of recycled PET produced, 1.3 tonnes of oil are avoided. Compared with conventional recycling, enzymatic recycling is 5 times more circular (calculated according to the Ellen MacArthur Foundation's Material Circularity Indicator<sup>5</sup>). Thanks to its highly selective enzyme, optimized for efficient PET degradation, CARBIOS' depolymerization technology can handle all types of PET waste, including colored, multilayer or textile waste that cannot be recycled with current technologies. CARBIOS' technology therefore complements mechanical recycling technologies. Furthermore, the two monomers produced (PTA and MEG) make it possible to recreate recycled PET products suitable for food contact and of identical quality to those of petroleum origin.

### **An industrial reality**

On 25 April 2024, CARBIOS celebrated the ground-breaking ceremony for its Longlaville plant, the first in the world to use the revolutionary enzymatic depolymerization technology. The plant will have an annual capacity of 50,000 tons of prepared waste when operating at full capacity.

### **Technological innovation serving eco-design**

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<sup>3</sup> Database ecoinvent 3.8

<sup>4</sup> French scenario, taking into account the detour of 50% of PET waste from conventional end-of-life. Virgin PET: 2.53 kg CO<sub>2</sub>/kg (cradle to gate)

<sup>5</sup> The Material Circularity Indicator (MCI) is a methodology developed by the Ellen MacArthur Foundation to measure how restorative the material flows are. The MCI gives a value between 0 and 1 where higher values indicate a higher circularity. The MCI value for CARBIOS' enzymatic recycling is 0.8.

By taking into consideration the life cycle of materials and integrating recycling constraints right from the packaging design stage, manufacturers and brands can greatly optimize product circularity. To find out more, attend the “Case Study” conference at “Edition Spéciale” by LuxePack:

- **“CARBIOS and L'OCCITANE en Provence: technological innovation serving eco-design”**
- Wednesday 5 June 2024 from 3pm to 3.45pm in the auditorium (Carreau du Temple, Paris)
- Speakers:
  - Benedicte GARBIL - Senior VP Corporate Affairs & Sustainability - CARBIOS
  - Martin BLONDEL - R&D Packaging Leader - L'OCCITANE en Provence



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**About CARBIOS:**

CARBIOS is a biotech company developing and industrializing biological solutions to reinvent the life cycle of plastic and textiles. Inspired by nature, CARBIOS develops enzyme-based processes to break down plastic with a mission to avoid plastic and textile pollution, and accelerate the transition to a circular economy. Its two disruptive technologies for the biorecycling of PET and the biodegradation of PLA are reaching industrial and commercial scale. Its biorecycling demonstration plant has been operational since 2021 and a first industrial plant, in partnership with Indorama Ventures, is currently under construction. CARBIOS, founded in 2011 by Truffle Capital, has received scientific recognition, notably with the cover of Nature, and is supported by prestigious brands in the cosmetics, Food & Beverage and apparel industries to enhance their products’ recyclability and circularity. Nestlé Waters, PepsiCo and Suntory Beverage & Food Europe are members of a packaging consortium founded by CARBIOS and L’Oréal. On, Patagonia, PUMA, PVH Corp. and Salomon collaborate with CARBIOS in a textile consortium.

Visit [www.carbios.com/en](http://www.carbios.com/en) to find out more about biotechnology powering plastic and textile circularity.

For latest news and media assets, visit our newsroom: [www.carbios.com/newsroom/en/](http://www.carbios.com/newsroom/en/)

LinkedIn: [CARBIOS](#) / Instagram: [insidecarbios](#)

**Information on CARBIOS shares:**

ISIN Code:	FR0011648716
Ticker Code:	Euronext Growth: ALCRB
LEI:	969500M2RCIWO4N05F08

*This press release and the information contained herein do not constitute an offer to sell or a solicitation of an offer to buy or subscribe to shares in CARBIOS in any country.*

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



**About L’OCCITANE en Provence**

L'OCCITANE en Provence is dedicated to sharing the wonders that nature has to offer. We've been doing just that since 1976, designing and marketing beauty, skincare and well-being products made in France all over the world. We believe that beauty goes beyond what the eye can see. From seed to skin, from respect for the environment to the well-being of our consumers, our approach is holistic. At L'OCCITANE

en Provence, we have always been Cultivators of Change. We do our best to create positive change in the world, and we always try to inspire those around us to do the same.

**For additional information, please contact:**

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