

Introducing:

Luminy®

PLA as future proof cosmetics packaging material

Biobased · Recyclable · Compostable · Innovative

Circulaire Cosmetica & Personal Care

Verpakkingen

20 February 2025

Seda Cantekin

Global Market Segment Leader



Me as a consumer

Caring about myself, my family and the planet that I call home...



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Are glass or aluminum being recycled sufficiently?

Am I happy with the existing cosmetics and personal care products for myself and for my kids? Are they safe?

How about the ingredients? Microplastics?

Do I contribute to the planet where I call home sufficiently while I still care about my personal well-being?

Do I need to disassemble the packaging to make sure it will be recycled eventually?



What do brand-owners want?

Are these in-line with consumers' needs?



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50% reduction in fossil-based virgin plastic in our packaging by 2025 (vs. 2019 base year)



By the end of calendar year 2030, we will reduce the amount of virgin petroleum content in our plastic packaging to 50% or less.

In fiscal 2022, our plastic packaging contained 87% virgin petroleum content.



-25%

By 2030, we will innovate to enable our consumers to reduce the CO₂ emissions resulting from the use of our products by 25% compared to 2016, on average and per finished product.



By 2030 cut 75% of our own CO₂ emissions, and 50% of our supply chain

Do the existing solutions answer consumers' needs?

Main challenges and opportunities



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Safety and regulatory

No compromise on safety...

- Finding solutions without compromising on the health and safety of consumers

Material solutions

*ABS, PP, PE, PET, PC, PMMA,
Glass, aluminum*

- Are these the only options?
- Are there other alternatives?

Design solutions

Multi-component/multi-material

- Does the design have to be complex?
- Are there other alternatives?

End-of-life solutions

What happens to a tube after its life come to an end?

- Yes, cosmetics packaging lasts longer than a food packaging.
- Mostly multi-layer structures, metalized, multi materials solutions.
- Requires a customized end-of-life option

How can we help you to tackle challenges and meet your sustainability targets?

Luminy® PLA: a cradle-to-cradle polymer



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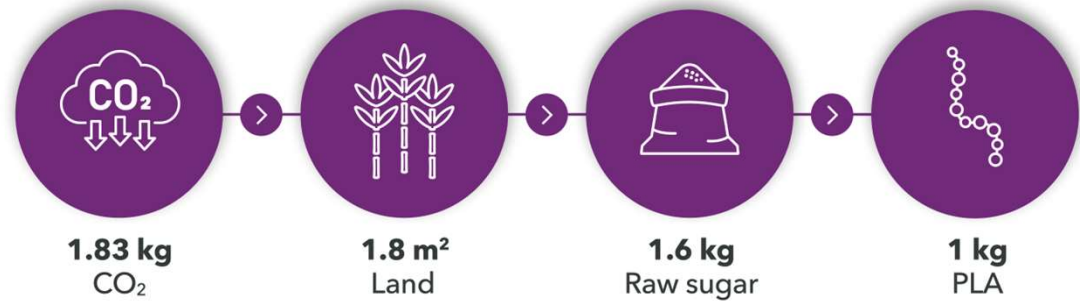


What is PLA?

Poly lactic acid



Made from plants



TotalEnergies Corbion converts the lactic acid into PLA, a biopolymer used in multiple applications from packaging to 3D printing to electronics.

100% biobased

What is Luminy® PLA?

Polylactic Acid

PLA is a biobased, recyclable, and biodegradable polymer made from annually renewable resources, offering a reduced carbon footprint versus traditional plastics.



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100% Biobased

Made from annually harvested renewable sugarcane plants



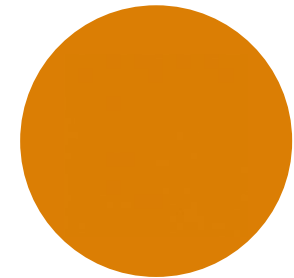
Compostable

Industrially composts faster than banana peels



Recyclable

Mechanically and chemically



Versatile

Used anywhere conventional plastics are used

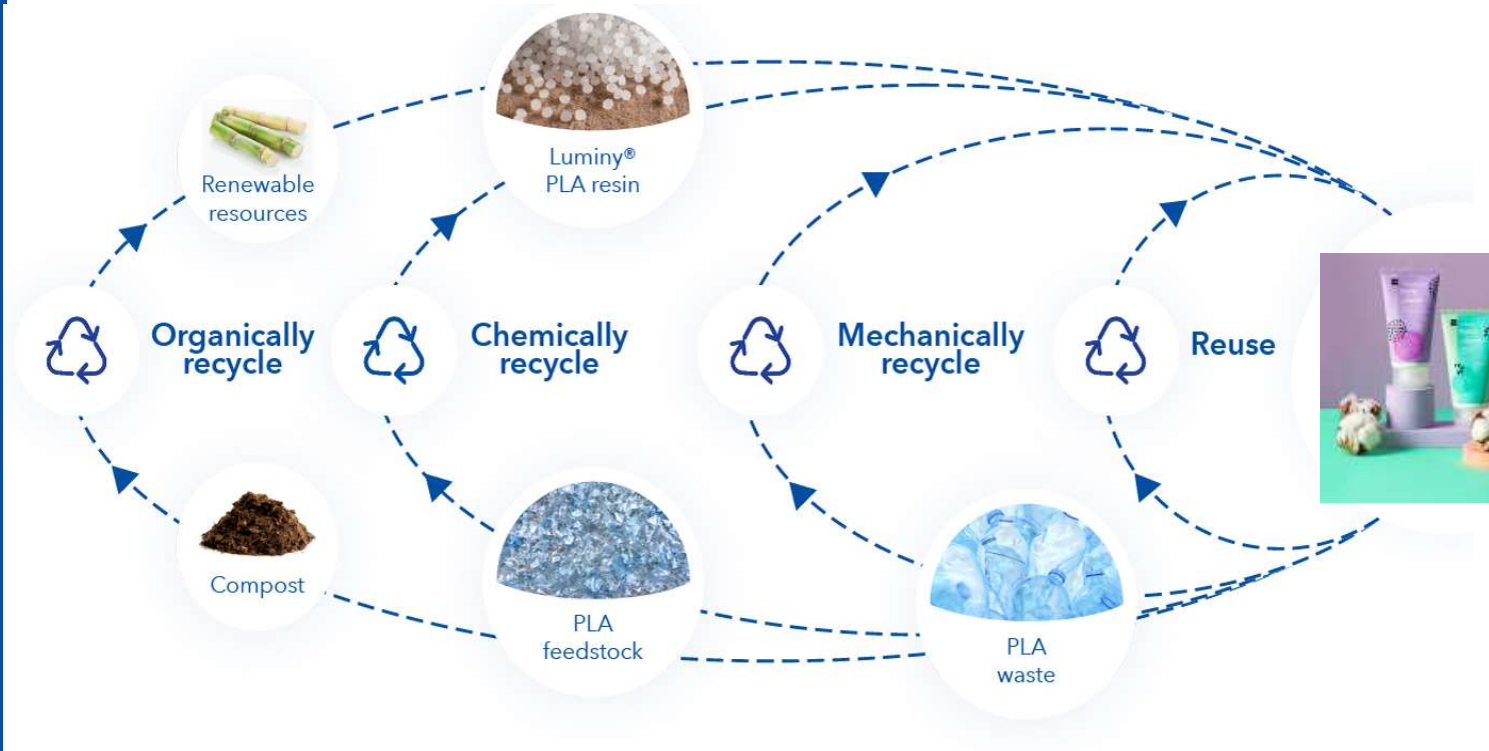


What about the end-of-life?

Keep the bio-based carbon in the loop again and again



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Reduced carbon footprint with PLA



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From a cradle-to-gate the Global Warming Potential (GWP) of PLA is 0.5kg CO₂/kg of PLA

Carbon footprint in kg CO₂ /kg of polymer**



**~ 75%
carbon footprint
reduction with
Luminy® PLA !**

Recycling of PLA

SAFETY FIRST

Most suitable for personal care products-



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- Relatively simple process
- Already commercial
- Food-approved
- Drop-in solution
- Infinitely recyclable

We are ready to explore take-back programs with value chain partners in toy industry!



Please contact us to learn more about our recycled PLA (rPLA) grades (30-100%)

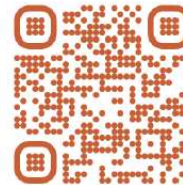
Tomra collaboration trial



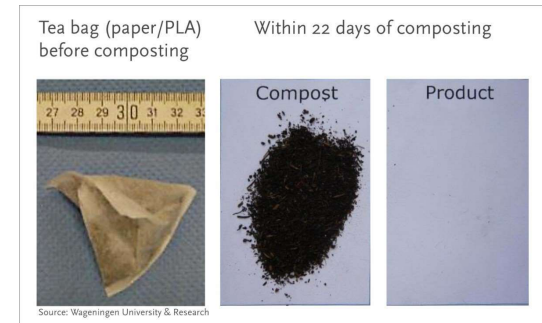
Tomra's Near Infra-Red (NIR) sorting tech successfully separates PLA from mixed plastic waste, making the process fast and easy



Please see our video on YouTube with the results of these sorting trials.



Back to earth



Composting organic waste and PLA produces high quality compost...



Free from persistent microplastics pollution



Reducing the use of chemical fertilizers



Bringing back carbon to the soil and providing soil nutrients

Material and design solutions

Commercial examples

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Innovative and eco-responsible cosmetic packaging. The caps & closures are made from PLA, bottles & containers are made from glass.

Benefits:

- Biobased
- Quality feel
- Good processing economics
- Replacing thermoset materials
- Reduced environmental impact
- Color MB replaces additional coating process

Materials

- Compound based on Luminy L105 and other biobased additives
- The biobased additives are by-products of industrial side-streams combined with camellia seed shells

Partnership with Sulapac

**Bio-based,
biodegradable
recycled
content** meeting
the stringent
demands of
leading
cosmetic
brands



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- Luxurious appearance
- Smooth finish
- Compatible with cosmetic formulations
- Effortless switch from current materials
- Low CO₂ footprint, no microplastics





We can only do this together... Join the movement!

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www.totalenergies-corbion.com

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Luminy[®] PLA bioplastics



@LuminyPLA



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APPENDIX

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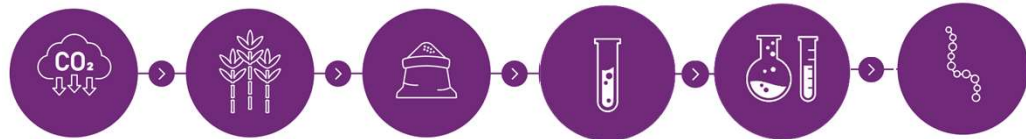
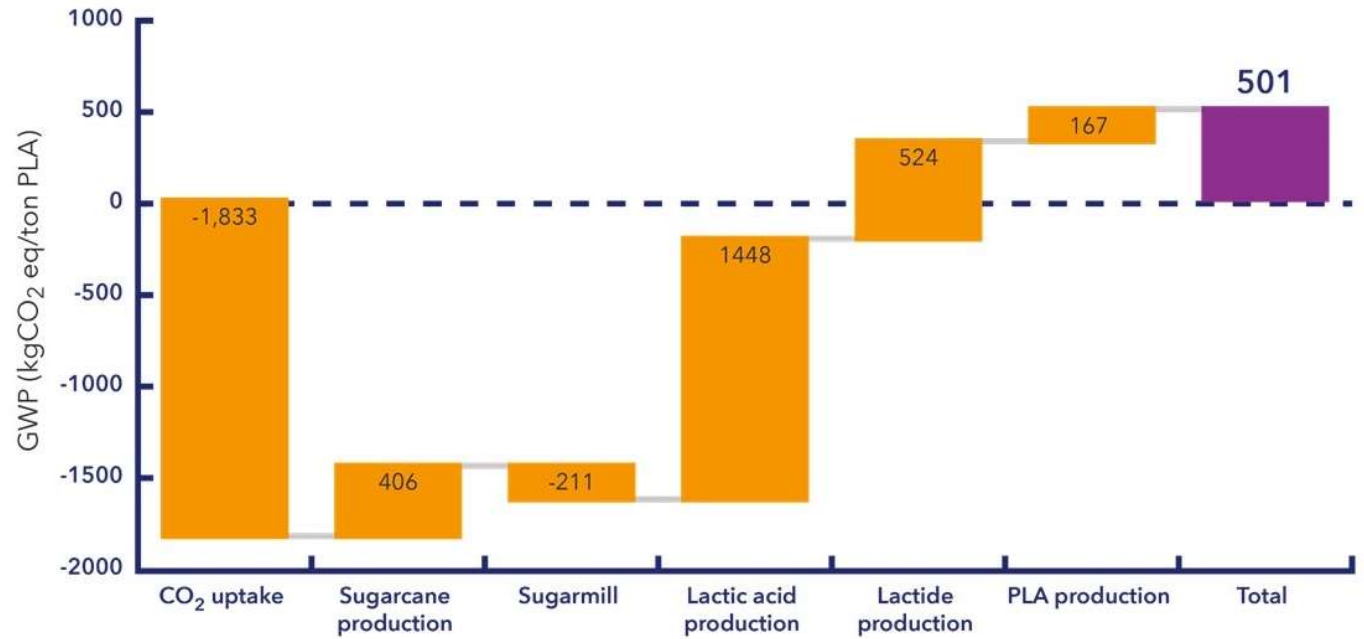


Global Warming Potential

501 kgs CO₂/ton of PLA



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Luminy® PLA LCA

How Luminy[®] compares

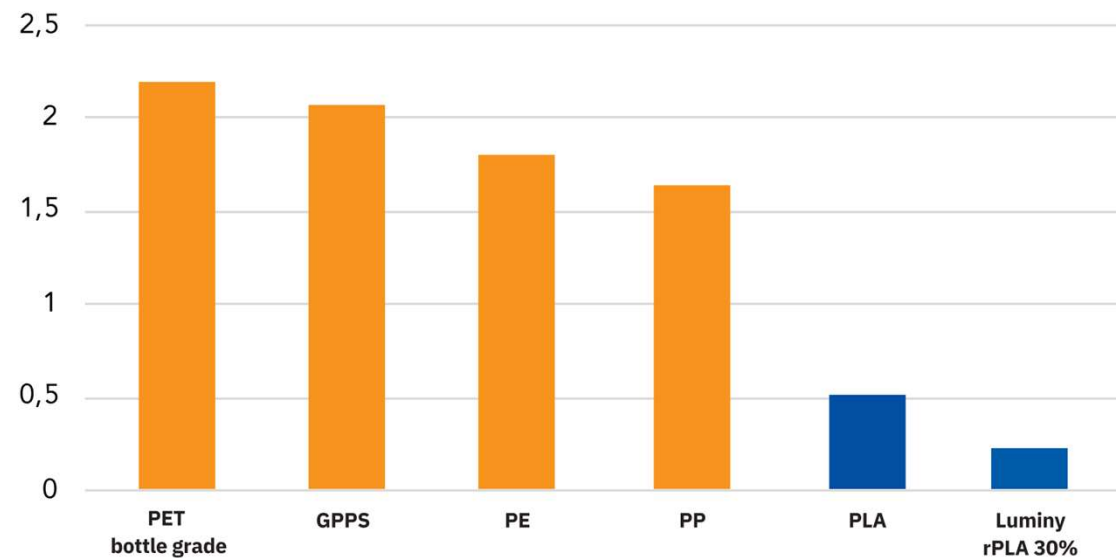
Low GWP compared to fossil-based plastics



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Global Warming Potential, Cradle to Gate for various polymers
(CO₂ kg equiv./kg polymer, including biogenic carbon)



Plastics Europe Ecoprofiles (2023); LCA of PLA, Journal of Polymers and the Environment, (2019) and internal sources.



Your Name

Job title

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PLA bioplastics

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