




SISTERS



How to say Farewell to Plastic Pollution Using Enzymes

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The problem

You may have heard about **PLA**, a promising biodegradable plastic. **But did you know that it's not as eco-friendly as it seems?** PLA only biodegrades at high temperatures, making it unsuitable for home composting and posing challenges even in industrial composting facilities, especially for thick packaging.

The solution

Meet Carbios Active, an enzymatic solution that changes the game entirely. By simply adding Carbios Active during the packaging production process, **PLA biodegradation is accelerated and guaranteed**, even at room temperature. This means that regardless of the conditions, whether in your backyard compost or in industrial composting facilities, **PLA can now be fully composted**, reducing plastic pollution significantly.

Benefits



Compostability Assurance: Thick packaging, up to 2mm, can now be confidently composted without worrying about incomplete breakdown.



Easy Integration: Carbios Active is conveniently available as a masterbatch, requiring no modifications in the packaging production process.



Preserved Quality: Despite the enzymatic treatment, there's no compromise on the mechanical properties or shelf life of the packaging.

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PRACTICAL RECOMMENDATIONS

Recommendations for manufacturers using Carbios Active:

- **Choose the Right Materials:** for packaging thicker than 0.5mm, opt for PLA compounds with a 20% mineral filler to enhance biodegradability.
- **Add at the Right Time:** incorporate Carbios Active during the final stages of production, either during extrusion or injection molding.
- **Monitor Conditions:** keep an eye on temperature and residence time during processing to maintain the enzyme's activity.



About SISTERS and this Practice Abstract

This practice abstract was elaborated in the framework of the SISTERS project, based on the EIP AGRI practice abstract format. © 2023

Project dates: from November 2021 to April 2026.

Goal: to systemically reduce food loss and waste in the main stages of the food value chain in Europe through innovations targeted to each stage of the chain.