

Con science

Clean clothes with a clean conscience

Around the world, doing laundry is not just a tedious chore, but a significant contributor to environmental challenges because of the amounts of water, energy, and chemicals used to perform the task. As consumers become increasingly conscious of their choices, the pressure is on for laundry detergents to not only clean effectively but also to protect fabrics and the planet. In fact, studies indicate that 75% of Western European consumers would switch from their main detergent to a more biodegradable and environmentally friendly alternative if it could perform equally well.¹

At Novonesis, we're addressing these challenges with innovative enzyme technologies, aligning with the growing demand for sustainable practices in everyday life in a cost-competitive, highly effective manner. Yet it's not just about minimizing the environmental impact of the washing process itself; the prolonged use of garments is critical, too. When fabrics are protected from damage, they remain in use longer, reducing the need for frequent replacements and thereby cutting down on both the production demands of new textiles and the pollution associated with them.²

How enzymes work in detergents

Every week, half of the world's population clean their clothes with the help of our enzymes.³ Enzymes are proteins found everywhere in nature. They act as biological catalysts that accelerate biochemical reactions and play a crucial role in modern detergents contributing to:

- **Fabric care, body grime and stain removal**

Different enzymes work their magic for stains of different origin, such as body grime, blood, butter or chocolate, but also maintain fabric and color newness.

- **Washing at lower temperatures**

One of the most significant advantages of using enzymes in detergents is their ability to catalyze biological reactions at lower temperatures. This allows consumers to wash clothes at lower temperatures. When washing at 40°C, up to 60% of the entire carbon footprint of doing laundry is in the use phase for heating the water.⁴ If everyone in Europe washed at 30°C instead of 40°C, we could save up to 3.5 million tons of CO₂ per year – the equivalent of taking roughly 2 million cars off the road.⁴

- **Reducing the chemical load of washing**

While laundry detergents are still largely made of fossil-derived chemical ingredients, it's essential to enable less use of the major chemical cleaning agents (surfactants), and we can reduce this by up to 30% in a standard detergent with a blend of enzymes and still achieve a great washing performance and color and fabric care.⁵ This helps reduce the carbon footprint of the detergent, but also enables compaction (concentration of formula).

- **Biodegradability**

As naturally occurring proteins, enzymes are readily biodegradable, meaning they can be broken down quickly and completely by natural biological processes. Many of the detergent ingredients used today, for instance some polymers and optical brighteners, are not readily biodegradable, so enzymes offer a good alternative when designing formulations with an improved sustainability profile.

Pioneering the laundry industry

At Novonesis, we take pride in having pioneered the laundry industry for over 60 years, still bringing cutting-edge innovations to the table that distinguish us in the market and make a real difference for the people who use our products – and the planet that they live on.

Biosolutions like Carezyme Elite® deliver notable fabric care on fiber level, color care that keeps clothes vibrant and softness that 83% of consumers found significantly better⁶, whereas Luminous®, a biological alternative to petroleum-based technologies, prevents clothes from turning gray and dull, so consumers can use them for longer. What they have in common is preserving the garment so that we can postpone or even refrain from buying new clothes so frequently. And their unique properties are particularly well-suited for pre-loved clothes, which has become a massive trend in recent years.



Pre-loved hoodie after 10 washes, washed with (right) and without Carezyme Elite®

By leveraging advanced biotechnological methods and harnessing the natural power of enzymes, we can create tailored solutions to enhance the effectiveness of detergents while reducing energy and resource consumption. We remain dedicated to innovating and expanding our portfolio in close interaction with customers, aligning with market demands and pursuing a more sustainable future.

“By leveraging the unique properties of enzymes, we are transforming the laundry experience – delivering superior results while reducing the climate impact.⁷ Together, we can make a meaningful difference, one wash at a time.”

Tina Sejersgård Fanø,
EVP of Planetary Health Biosolutions

¹ Novozymes/Conjointly consumer survey 2021 with 1772 consumers surveyed

² The Apparel Industry's Environmental Impact in 6 Graphics, WRI

³ <https://www.novozymes.com/en/solutions/laundry>

⁴ Leading detergent brands to European consumers: Wash cold – POLITICO

⁵ Our Climate Journey, Novozymes, p 17, p 16

⁶ Third party institute: Eurofins Scientific, untrained consumer panel, n= 63, 2022

⁷ <https://www.novozymes.com/en/sustainability/impact/accelerate/bio-based-detergent>

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