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A SUSTAINABLE END OF LIFE CYCLE FOR NYLON

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INTRODUCING NERIDE® BIO

FACING SUSTAINABILITY CHALLENGES

- Globally the fashion industry is responsible for 10% of all greenhouse gas emissions.
- The textile industry is the second polluting industry on the planet, contributing to 20% of global wastewater.
- Fast-fashion leads to huge amounts of clothing thrown away every year causing a significant impact on the environment.

MIXED MATERIALS TEXTILE WASTE

Sorting, collecting and recycling of used or unsold clothing is a very complicated task due to the many blends of man-made and natural fibres used in modern garments. Today, there is no technology to solve this problem, and most of textile waste ends up in landfills.

WHAT NERIDE® BIO IS?

- NUREL proposes a solution for nylon textiles that end their lifespan in landfills.
- NERIDE BIO is a nylon 6 yarn that biodegrades at the end of its life-cycle and is transformed into methane which, if properly captured, can be used as green energy.
- NERIDE BIO can biodegrade in aerobic and anaerobic environments*.
- NERIDE BIO is not decomposed by oxygen or UV rays, it is not oxodegradable.
- It **maintains the properties of PA6**. No loss of physical properties or shelf life. It only degrades when it comes into contact with an active biological environment.
- It can be processed following standard **PA6 production methods**.

NERIDE BIO CLAIMS

- This product has been designed for landfill gas-to-recovery.
- If properly discarded in landfills, this product can be **valorized to green energy**.
- **Anaerobic biodegradation*** in landfill following: ASTM D5511.
- **Aerobic biodegradation*** in soil according to ISO 17556: 2012.



NERIDE BIO CARBON FOOTPRINT IMPACT

- The final disposal/waste system has an important role in the carbon footprint of any material.
- Carbon footprint impact should be analysed according to each disposal scenarios.
- The primary carbon impact of NERIDE BIO is related to landfill disposal where resulting methane is managed and converted to energy, providing approximately a **15% carbon reduction**.

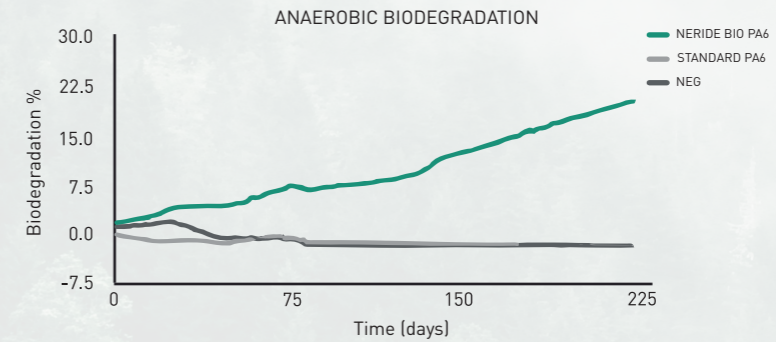
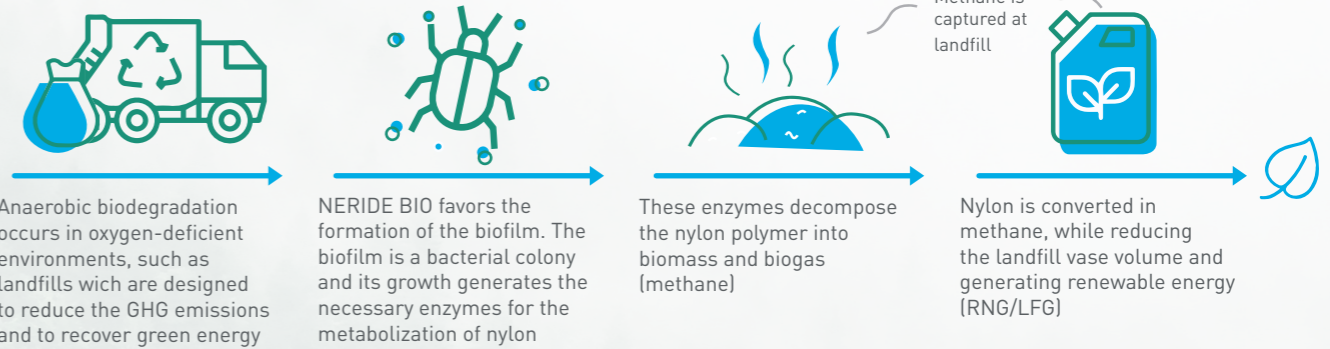


* As per 2022 "biodegradable" claim is not accepted in some territories. Please address to the latest regulations for each territory.

HOW DOES IT WORK?

ANAEROBIC BIODEGRADATION*: NYLON FABRIC IS LANDFILLED & VALORIZED TO GREEN GAS

- **Anaerobic Biodegradability** according to ASTM D551. After 211 days: 20% biodegradation.



AEROBIC BIODEGRADATION*: IN CASE OF INAPPROPRIATE LITTERING IN SOIL

- NUREL does not support littering of any kind, but, in case of an inappropriate disposal of the textile waste, NERIDE BIO will also biodegrade in soil.
- Aerobic biodegradation is the degradation of organic matter by microorganisms in environments with oxygen such as soil.
- **Aerobic Certification for NERIDE BIO**, according to ISO 17556:2012, states a biodegradation of 76% after 90 days in active soil similar to cellulose fibers.
- Under the same conditions NERIDE BIO biodegrades at same speed as cellulose.

