PE ECO

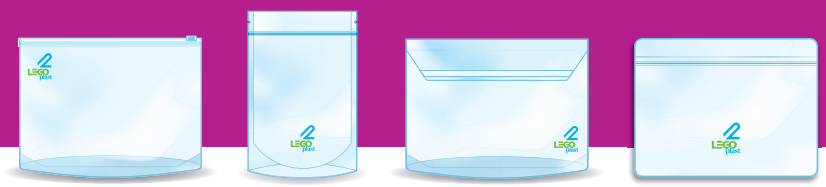
Degradable polyethylene

Degradable polyethylene (PE-ECO) is an additive material that degrades more rapidly than traditional plastic. Thanks to its mechanical and durability performances, which are comparable to traditional plastic, PE-ECO can be used for any packaging type. In addition, the material and packaging itself are completely recyclable and reusable allowing final consumers to reuse the bags multiple times.

How does the degradation process work?

The degradation process occurs thanks to organic additives that attract microorganisms capable of feeding on plastic. These microorganisms colonize the material and they produce acids that break the polymer chain, by using the carbon as an energy source. This process leads to the initial fragmentation of the polymers into monomers, which are then converted into fatty acids by microbes.

Fatty acids are further transformed into acetic acids, carbon dioxide, and hydrogen. In the degradation final stage, acetates are transformed into methane and carbon dioxide; hydrogen is consumed until it remains only humus. Humus acts as a nutrient that further stimulates microbial activity and it completes the degradation and decomposition process. All these stages are only possible in favourable microbial environments like landfills.



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