



## **Polymateria**<sup>TM</sup> - Time-controlled polymer additives for supporting and enhancing biodegradability in plastics

*Introducing Biotransformation – a new standard in **biodegradable** plastics to help nature deal with plastic pollution.*

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*Dstrupol, your supply partner for Polymateria<sup>TM</sup> Materials. Contact us today to find out more!*



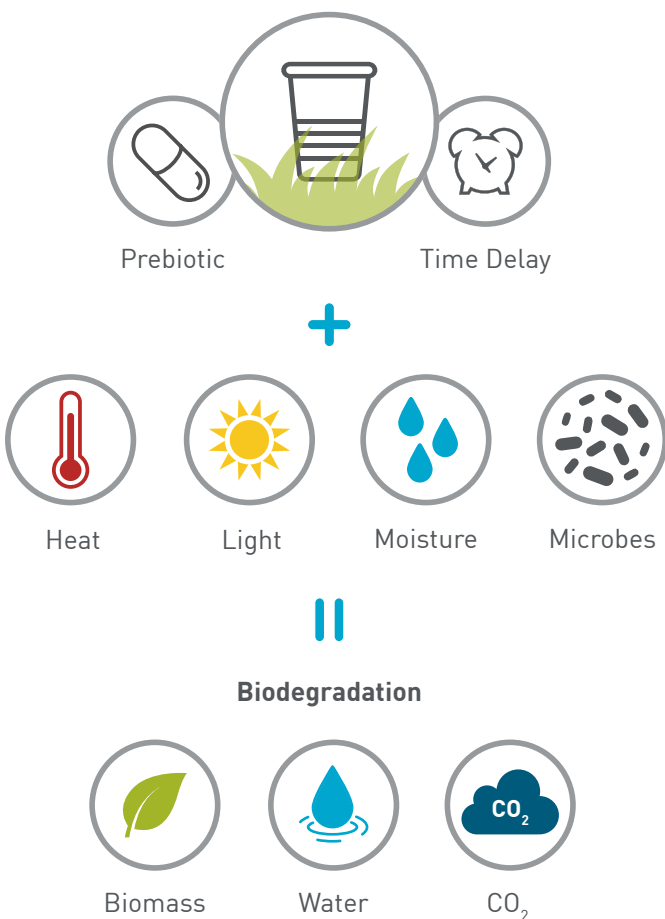
## Background

Degradation is the process by which a chemical substance is broken down into smaller molecules by Abiotic means (hydrolysis, photolysis or oxidisation). Biodegradation is the process by which organic substances are broken down by living organisms such as bacteria and fungi.









Additives from Polymateria revolutionise the biodegradability of plastic. With patented technology and proprietary formulations, this new standard of biodegradability – or biotransformation – provides a natural solution to the irresponsible disposal of plastic products (i.e. littering).

Unlike previous technologies that have been promoted for the biodegradation of plastics in the open environment, Polymateria's technology does not rely simply on oxygen to fragment the polymer.

Biotransformation does much more than just oxidation. It involves radical reactions linked to chain scission, hydrolysis, higher level of analysis of chemical transformation, prebiotics to attract microbes in the environment and new methods of analysing resin / additives within specific applications.



## How it works

-   During the shelf-life of the product, the additives lie dormant.
-   In line with agreed timing, the formulation gets to work by triggering a catalytic process that starts to engage with all the relevant natural agents of decay (UV, air, moisture)
-   The catalytic process chemically transforms the polymer chains, reducing their length, and re-enabling its natural ability to decay within the natural environment.
-   Naturally occurring fungi and microbes consume the oxidised plastic fragments, leaving behind CO<sub>2</sub>, water and biomass.

## Product range

**DegrAid** - Short service life (<6 months) - designed specifically for end of life situations where recycling is not an option, e.g. sealant films.

**Cycle+** - Long service life (6 months - 3 years) - advanced biodegradation technology to different types of plastic, without affecting its recyclability within the product's use life.

## Benefits & Advantages

- ✓ Suitable for land-based plastic litter/fugitive plastic
- ✓ Complies with PAS 9017:2020 Plastics - Biodegradation of polyolefins in an open-air terrestrial environment
- ✓ Food safe - FDA approved/GRAS statement
- ✓ Recyclable - within the product's useful life
- ✓ Stringently tested - ASTM6954, ASTM5988 & OECD 202, 207, 222
- ✓ Migration certification
- ✓ No change to manufacturing process - 'drop-in' masterbatch
- ✓ No impact on existing CO<sub>2</sub> and H<sub>2</sub>O footprint
- ✓ Simple and cost effective

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