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## Plastics

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# New British standard for biodegradable plastic introduced

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Products will have to prove they break down into harmless wax containing no microplastics



▲ Scientists say the new standard will cut through confusing classifications. Photograph: Jeff Morgan/Alamy

A new British standard for biodegradable plastic is being published which scientists say will cut through a jungle of classifications that leave consumers confused.

Plastic claiming to be biodegradable will have to pass a test to prove it breaks down into a harmless wax which contains no microplastics or nanoplastics in order to make the grade, published by the British Standards Institution.

The benchmark for the new standard was reached by a British company called Polymateria, which has created a formula to transform plastic items such as bottles, cups and film into a sludge at a specific moment in the product's life.

Once the breakdown of the product begins, most items will have decomposed down to carbon dioxide, water and sludge within two years,

triggered by sunlight, air and water.

The products that can be transformed include the most common litter items, such as food cartons, food films and bottles.

The biodegradable products created contain a clear recycle-by date, to show consumers that they have a timeframe to dispose of them responsibly in the recycling system before they start breaking down. The bio-transformation chemicals created by Polymateria are added to plastic in the manufacturing stage of an item, with a bespoke element in the formula for each type of plastic item being produced.

Niall Dunne, chief executive of Polymateria, said in tests using the biotransformation formula, polyethylene film fully broke down in 226 days and plastic cups in 336 days.

Currently many plastic products in litter [persist in the environment for hundreds of years](#).

“We have designed this around the consumer,” said Dunne.

“We wanted to cut through this eco-classification jungle and take a more optimistic view around inspiring and motivating the consumer to do the right thing.

“We now have a base to substantiate any claims that are being made and to create a new area of credibility around the whole biodegradable space.”

To meet the standard, the polymer has to pass tests which show it will biodegrade to a harmless state in real-world situations.

Scott Steedman, director of standards at BSI, said: “Tackling the global challenge of plastic waste requires imagination and innovation. New ideas need agreed, publicly available, independent standards to enable the delivery of trusted solutions by industry.

“PAS 9017 is the first stakeholder consensus on how to measure the biodegradability of polyolefins that will accelerate the verification of technologies for plastic biodegradation.”

The new standard was sponsored by Polymateria, based at Imperial College, London and agreed after independent review and discussions with stakeholders in the industry, the waste and recycling group Wrap, the Department for Environment, Food and Rural Affairs and the Department for Business, Energy and Industrial Strategy.

Chris Wallis, vice-president of innovation at Polymateria, said the formula was designed to complement a range of scenarios for responsibly disposing of plastic waste, including recycling and reusing in a circular economy.

“If any of these systems fails, if there are leaks into the environment because of unmanaged waste, we finally have a solution,” said Wallis.

“We want to be complementary and part of multiple solutions that will reduce the problem of plastic pollution on the planet.

“If plastic waste is not disposed of correctly or if waste management system ends up leaking the plastic into the natural environment, this technology is designed to kick in to chemically operate and turn the material into harmless

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