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Plastic Packaging

The Facts

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Plastic waste has fast become a priority point for government, companies and consumers alike as the damage caused to the environment by the use of single use plastics is being constantly highlighted in the news and, most recently, in documentary shows such as Frozen Planet II.

But with so many terms, variances and factors to consider - from biodegradable to compostable, bioplastic to conventional - understanding plastics can be a minefield.

This simple factsheet aims to cut through the jargon and support you in understanding plastics, allowing you to make a more informed - and hopefully, greener - decision when it comes to disposal of plastic.

Understanding Plastics

Non-Biodegradable

Features: Durable, long-lasting, high strength

Recyclable: Can be recycled - as long as it's collected and sorted into separate material reprocessing streams.

Issues: It is imperative that the route for recycling or disposal does not compromise other recycling routes. This is because if non- biodegradable plastics enter the composting process, the final product can be contaminated.

Biodegradable

Features: Breaks down over time, can now be made with similar properties to non-biodegradable plastics.

Recyclable: Can be recycled but must be separated from non-biodegradable plastics and dealt with separately.

Issues: Must not compromise other recycling routes, packaging needs to be clearly labelled as biodegradable so it can be correctly disposed of. However, the fact that a plastic is described as biodegradable doesn't mean that it should be freely released into the environment in an uncontrolled manner.

Compostable

Features: Decomposes / biodegrades in the appropriate conditions, can now be made with similar properties to non- biodegradable plastics.

Recyclable: Can be composted at industrial scale composting facilities or, in some cases, may be suitable for home composting.

Issues: It is vital that only compostable plastics are sent to these routes as non-compostable plastics can contaminate the final compost produced.

UK treatment and disposal routes

	Non-Biodegradable	Biodegradable	Compostable
Recycling	✓	✗	✗
Energy from waste	✓	✓	✓
Landfill	✓	✓	✓
Anaerobic digestion (AD)	✗	✗	✗
Composting	✗	✗	✓

Glossary

Biodegradable
A product that can be broken down by microorganisms into water, naturally occurring gases like carbon dioxide, and biomass. Biodegradability depends strongly on the environmental conditions.

Compostable
Materials that break down at composting conditions. Industrial composting conditions require elevated temperature with a high relative humidity and the presence of oxygen.

Home composting
Creates conditions with much lower and less stable temperatures than industrial composting.

PBAT and PBS
Polybutylene adipate terephthalate and Polybutylene succinate - two biodegradable polyesters.

Recycling
The reprocessing of a used product into a new product. Plastic which after use can be collected, sorted and reprocessed into new products is called mechanical recycling. Another option is chemical recycling where materials are broken down to monomers which can be used again for the production of polymer.

PE
Polyethylene - a type of resin, a polyolefin and one of the the world's most widely produced synthetic plastics.

PHA
Polyhydroxyalkanoate - a naturally occurring biodegradable polyester.

PLA
Polylactic acid - a biodegradable polyester.

PP
Polypropylene - a recyclable polyolefin commonly used for food containers.

PET
Polyethylene terephthalate - a type of resin and polyester commonly labelled with the code on or near the bottom of bottles and containers.

PA
Polyamides (Nylon) are the largest family of engineering plastics with a wide range of applications. Resistant to wear and abrasion, have good mechanical properties, high strength, high impact resistance and good flow.

Starch blends
The majority of bio- based plastics are currently manufactured using starch as a feedstock. The current major sources of this starch are maize, potatoes and cassava,

PLC
Polycaprolactone is a biodegradable polymer that's most suitable for applications requiring years of stability.