Biogone

LANDFILL-BIODEGRADABLE
EVERYDAY PLASTIC PRODUCTS

The logical choice for your everyday plastic products

We believe if single-use plastics must be used then they should be made to be recyclable or to biodegrade where they will be disposed of - in a landfill, commercial or home compost facility.

BIODEGRADABLE IN LANDFILL

NO SPECIAL FACILITIES/ TREATMENT NEEDED

NO MICROPLASTICS
- DOES NOT FRAGMENT

NO SUNLIGHT OR OXYGEN NEEDED

MICRO ORGANISMS BREAKDOWN PLASTIC

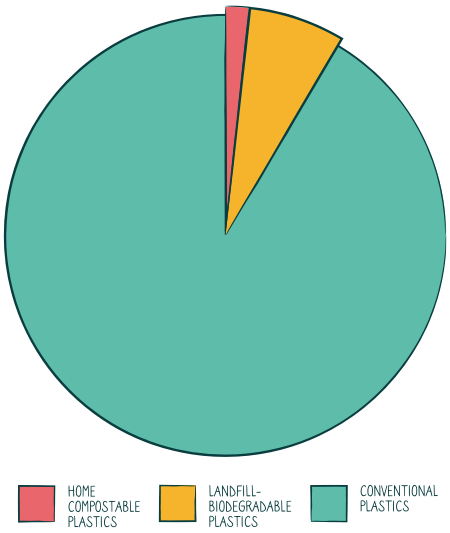
PRODUCING ORGANIC MATTER ... A NATURAL FERTILISER

DEPARTMENT OF AGRICULTURE, WATER, AND THE ENVIRONMENT ACKNOWLEDGE AUSTRALIA HAS A PLASTIC PROBLEM:

- Australians used **3.5 million tonnes** of plastics between 2018 to 2019.
- Our use of plastic is increasing and across the world will **double by 2040**.
- In Australia **84% of plastic used is sent to landfill** and only 13% is recycled.* This is problematic for conventional plastic which can take hundreds of years to decompose.

Biogone offers the logical solution and developed a range of landfill-biodegradable everyday plastic products. When disposed to landfill, our plastic products will biodegrade approx. 20 times faster than conventional plastics.

BIODEGRADATION TIME



A LITTLE BIT ABOUT LANDFILL-BIODEGRADABLE TECHNOLOGY

Landfill-biodegradable products are made by combining traditional plastic with an organic additive. The biodegradation only begins when the plastic is exposed to a microbe-rich environment, such as a landfill.

The additive attracts microbes to the plastic and they start to digest it. As they do this, the enzymes (the microbes secrete) break the carbon bonds in the plastic molecule allowing the microbes to digest them for their energy. As more enzymes are secreted, more atoms are removed from the plastic molecule (called depolymerisation) which the microbes can digest.

As this process continues, the plastic molecule is broken down and digested away, producing a humus-like material (organic matter) which is a natural plant fertiliser and a biogas. Producing no microplastics.

- WE DO NOT USE OR SUPPORT DEGRADABLE / FRAGMENTABLE ADDITIVES

*National Plastic Plan 2021, Department of Agriculture, Water, and the Environment, Commonwealth of Australia 2021.

WASTE TO ENERGY

The methane produced from accelerated landfill-biodegradable plastics, can be captured within the time frame the landfill is actively managed, rather than being released into the atmosphere over hundreds of years after the landfill has closed and stopped being managed.

This captured methane can be used for fuel and energy production.

FAQS

Q. What is landfill-biodegradable plastic, I've never heard of it before?

Landfill-biodegradable plastic utilises a proprietary organic additive added to conventional plastic material. This additive draws microbes to the plastic. In eating it, the enzymes break down the plastic molecules to the point where they too can be digested. The additive only comes into play when the plastic product is disposed of in a microbe-rich environment, such as a landfill.

Q. What is the additive?

Biogone uses a patented organic additive, which is:

- An organic food source.
- Approved by USFDA for food contact.
- Mixed in a small ratio to not affect the parent plastic material properties.

Q. Do you have ASTM test results to verify biodegradability?

The biodegradability of plastic can be confirmed by comparing biodegradation results from an independent laboratory using either ASTM D5511, ASTM D5526 or Bio-Methane Potential (BMP) tests. Yes. We have ASTM tests, which are recognised internationally as being the benchmark of verifications, for the patented organic additive. The ASTM D5511 is a test performed by an independent laboratory to verify claims of biodegradability in anaerobic conditions, intending to replicate conditions found in a typical landfill.

Q. What is BMP testing?

The BMP (Biochemical-Methane Potential) lab test data is used internationally by governments, universities, and commercial operators to determine the true biochemical methane potential and dynamic degradation profile of a material in anaerobic conditions. The test validates our landfill-biodegradable plastic can be digested by microorganisms within an environment with no/limited oxygen and limited light.

Q. Will landfill-biodegradable plastic biodegrade in commercial and home composts?

Yes, but not within the required timeframe for composting standards in Australia. It is best to be disposed of in the general waste bin (landfill).

Q. Are there any toxic residues or microplastics left after biodegradation?

No. There is no toxic residue when the biodegradable plastic decomposes. Plastics such as polyethylene break down to methane (CH4), carbon dioxide (C02), and organic matter (humus). Our landfill-biodegradable products do not feature any degradable additives and will not fragment to form microplastics. We do not use or support degradable/fragmentable additives.

Q. Is biodegradation the same as degradation?

No. They are very different processes. As its name infers biodegradation is a biological process and is the breakdown of plastic material caused by naturally occurring microorganisms such as those occurring in a landfill. Degradable plastic is a plastic with a metallic additive that sets off a slow chemical reaction and over 12-24 months will cause the plastic to fragment into little pieces. This has nothing to do with biodegradation and microorganisms. Our landfill-biodegradable products do not feature any degradable additives and do not fragment down to microplastics. We do not use or support oxo-degradable / fragmentable additives.

Q. How long will landfill-biodegradable plastics take to biodegrade?

The biodegradation time of a product depends on a variety of factors. The landfill-biodegradable additives will make plastic biodegrade approximately 20 times faster than conventional plastics - keeping in mind many conventional plastics will take hundreds of years to biodegrade. It all depends on the following variables:

- Landfill conditions are different across the country. Some are in cooler or warmer conditions. If the plastic is put into a dry landfill it will degrade slower than a more actively managed water moistened landfill.
- The difference in plastic thickness. Our landfill-biodegradable plastics vary in thickness. The thicker the plastic section, the longer it will take to biodegrade. Membrane films are expected to biodegrade quickly. Thicker sections may take several years.

The main point is whether it takes a few months or multiple years doesn't really matter. What does matter is that after some limited time, the product will completely biodegrade into biogas and biomass, a natural fertiliser - we are no longer leaving our plastic waste for future generations to deal with, and the biogas can be captured and utilised by the landfill within the timeframe that it is actively managed.

OUR RANGE

WITH A HUGE RANGE OF LOGICAL ALTERNATIVES, BIOGONE HAS A PLASTIC SMART SOLUTION FOR ALL YOUR PACKAGING NEEDS.

Our range currently includes:

- Stretch Wrap
- Packing Tape
- Bubble Wrap
- Mailing Satchels
- Pallet Strapping
- Resealable Bags
- Bin Liners
- Dog Poop Bags
- Cling Wrap
- Produce Bags
- Gloves
- Dry Cleaning Bags
- Aprons
- Shipment Envelopes

SHOP THE RANGE TODAY AT:
WWW.BIOGONE.COM.AU