

# LET'S SORT IT



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Degradable, biodegradable or compostable? Selecting the best option is a challenge many consumers face every day. Uncertainty about these three definitions can make it difficult to correctly dispose of our plastic waste products.

Plastic consumption has increasingly become a major issue for our environment. Every year, about 8 million tons of plastic waste escapes into the oceans from coastal nations. That's the equivalent of setting five garbage bags full of trash on every foot of coastline around the world (sources: The world's plastic pollution crisis explained, <https://www.nationalgeographic.com/environment/habitats/plastic-pollution/>).

The more we can do to reduce plastic consumption, the greater chance our planet has to remain a liveable place.

The terminology is often not clear or even incorrect and can lead people to believe a product won't negatively impact the environment. This is not always accurate and can create more problems than we, as consumers, try to solve.

Fully biodegradable or compostable products are better for the environment because they are made from plant materials which don't harm the environment when breaking down. However, fully biodegradable products as well as compostable products need the right environment to break down properly.

In this paper we have collated a clear overview of the three options so that you can make an informed decision next time you decide to use a plastic product.

## DEGRADABLE, BIODEGRADABLE & COMPOSTABLE

Degradable, biodegradable and compostable products are made from different materials and deteriorate under varying circumstances. The conditions that affect how quickly these types of materials break down vary depending on what they are made from. The more natural the conditions that are required to break down the product, the better for the environment the product will be.

Degradable plastics can help reduce the amount of plastic litter that we see but the plastic is still there, just in smaller pieces. And these smaller pieces of plastic litter are hazardous to ecosystems. Fish, crustaceans and corals are known to eat small pieces of plastic, mistaking them for food. These smaller animals are then eaten by larger ones and so the plastic accumulates up the food chain, affecting more and more species as it goes.

If a plastic material is biodegradable, living fungi or bacteria can break it down. However, biodegradable is often used without certification and brands label their bags as 'Biodegradable' without any proof. Those bags leave the same micro plastics in our environment as degradable plastics do.

The worst types of plastic are single-use plastic bags. They have an average usage of 12 minutes and are then discarded. Worldwide we are using 2 million of these every sixty seconds. Polyethylene bags are made from a non-renewable resource, and are incredibly harmful to the environment as they never biodegrade. They will simply break into smaller and smaller pieces over hundreds of years, inflicting untold amounts of damage to natural ecosystems.

Ideally avoiding single use plastics is the best way to help our planet. Zero waste is one way people are getting involved in cutting plastic materials from their day to day life.



## ZERO WASTE

'Zero waste' goes beyond the recycling processes and considers the entire life cycle of a product. The philosophy aims at reducing as much waste as possible that ends up in landfill. It is about sustainable natural cycles where all discarded materials are used for other purposes, resulting in no trash going to landfills or incinerators. The goal of zero waste is not to send products to recycling plants and compost heaps instead of landfills, but instead to use the entire product so no waste is generated entirely. Many communities are working towards this goal and it can encompass a range of different areas in our lives.

There are many ways of avoiding waste at home such as opting out of using plastic utensils, using reusable containers, shopping bags, etc.

Zero waste is continuing to grow but it is not always an option, so let's look at the three most widely used descriptions for plastic materials in more detail.

## DEGRADABLE

Degradable is when the plastic product will break down through chemical processes but not completely. Degradable plastic leaves small pieces of plastic behind. Chemical additives are added to help break the plastic down quicker than a standard plastic product would. However, the plastic is still there, only we can't see it. It is referred to as 'micro-plastic' which is spreading through our eco systems causing significant issues.

*'The world's plastic pollution crisis explained'* written by Laura Parker, a National Geographic writer (<https://www.nationalgeographic.com/contributors/p/laura-parker/>), summarises the issues around micro-plastics that are breaking down further into smaller and smaller pieces. Not only is this harming animals but plastic microfibers have been found in municipal drinking water systems and drifting through the air which is harming humans.

The term 'Degradable' plastic is misleading because consumers may think that the plastic breaks down and is not harming the environment. This is not the case and degradable plastics should be avoided if possible.



## RECYCLING OPTIONS

You should only dispose of degradable bags in the general waste bin. Degradable bags are then taken away with all other general rubbish to landfill. These bags will cause damage to the environment if disposed in any other manner.

## BIODEGRADABLE

Biodegradable is often the term that confuses people the most. Biodegradable means living things like fungi or bacteria help to break it down into a natural substance. Biodegradable products are made from plant-based materials such as corn or wheat starch which won't release chemicals into the environment when breaking down.

However, this term is sometimes used on 'bio-plastic' or 'oxo-degradable' items which are still made from plastic – making it hard for consumers to distinguish between actual biodegradable classification and other terminology. In Australia we allow companies to use the term 'bio' without proof whereas in Europe and the US for example a product can only be labelled 'bio' if it actually breaks down with the help of micro-organisms.

The seedling logo is an international certification that identifies certified compostable plastics. It can only be used once the products have undergone tests and be certified to the Australian standard AS4736-2006. Use of the seedling logo will guide the consumer, retailers and customers to recognise compostable packaging and dispose of it correctly. Importantly, the seedling logo proves that the product has undergone testing and been certified as a compostable degradable product.



## RECYCLING OPTIONS

You should only place biodegradable bags in the general waste bin unless you are 100% sure that they can break down in a compostable environment. 100% biodegradable products will break down in a composting environment but they cannot be recycled as they are not suitable for the recycling process.

## COMPOSTABLE

Compostable is the most ideal option out of three. Compostable products are made from a plant material that return to base organic components when processed in the correct way. Compostable products have no plastic in them, so they won't leave any harmful toxins in the environment once they break down.

The challenge with disposing of compostable products is that they need a controlled environment to break down properly. If you have a composting system at home you can put your compostable products in that. There are also some industrial composting systems available which can properly process the products. Unfortunately, those composting facilities are not easily accessible for all areas of Australia; there are approximately 150 across the country at the moment.

The other problem is that if a compostable product is put into anything other than a composting facility, the product will not break down and will end up in landfill as the rest of our general waste does. Compostable products are also unable to break down in water if they are left in a natural environment. Waterways and other marine environments do not have the ability to provide the correct conditions for compostable products to break down properly. This means the product may have been an environmentally friendly option but if it is not disposed of correctly it will not be as environmentally friendly as expected.



### RECYCLING OPTIONS

Compostable products can be only be placed into the food and garden organics (green) bin at home. They will not break down if they are put into general waste with other landfill items and they cannot be recycled.



See below for an overview of the 3 categories of discussion to see how each breaks down. Utilise this table to see how the products you use affect the environment.

	Plastic	Oxo-Degradable	Compostable
Fragment into polyethylene remnants (micro-plastic)	<b>Y</b>	<b>Y</b>	<b>N</b>
Leave toxic residues	<b>Y</b>	<b>Y</b>	<b>N</b>
Are recyclable	<b>N</b>	<b>N</b>	<b>N</b>
Break down into organic matter	<b>N</b>	<b>N</b>	<b>Y</b>
Break down within a specified time frame	<b>N</b>	<b>Y</b>	<b>Y</b>
Dissolved by microorganisms on land and in water	<b>N</b>	<b>N</b>	<b>Y</b>
Can go into green bins with food and garden organics - *check with your local council	<b>N</b>	<b>N</b>	<b>Y</b>



## ARBORGREEN INITIATIVES



Arborgreen is running tests with some of our tree guards to test how quickly they degrade. We are constantly looking at ways to provide products that are environmentally friendly as well as providing the option to recycle them if possible.

In South Australia, YCA Recycling offer recycling of Corflute guards (hyperlink to <https://www.ycarecycling.com/>). This type of plastic (pp polypropylene) is crushed into granules ready for moulding again into products such as milk crates, truck guards, bumper bars, etc.

Arborgreen is working with YCA to collect and recycle Corflute guards when you no longer need them. You can either drop them in to our Mount Barker trade warehouse or we can arrange to have them picked up for you.

Corflute guards are made of plastic, but they can be reused and recycled once no longer needed. One key feature of Corflute guards is that they are rigid enough to be able to withstand multiple seasons of usage. The other alternative to disposing of Corflute guards is to pass them onto someone else who can use them. There are hundreds of Landcare groups and other planting groups that would gladly accept the Corflute guards provided that they are still in a good condition to work with. You can check out some of your local Landcare groups here: <https://landcareaustralia.org.au/landcare-get-involved/findagroup>

## TAKE AWAY

There is an increasing number of products that claim to be 'degradable', 'biodegradable' or 'compostable' when they do not meet relevant industry standards. This is misleading consumers and can lead to plastics being disposed or recycled in the incorrect way. Understanding the differences between each of the definitions is a right step towards making an educated decision about the consumption and disposal of plastic products.



## REFERENCES

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## ABOUT ARBORGREEN

Arborgreen offers a quality range of products to the landscape, horticultural & arborist sectors. We supply tree planting products, fertilisers and supplies for any size project. We're here to help your projects grow, flourish & thrive; our customers include:

- councils & government departments
- landcare groups & revegetation contractors
- landscape architects & managers
- project planners & estimators
- arborists & horticulturists

We aim to deliver a high standard of service, within budget, promptly delivered to anywhere in Australia within your project time frame.

At Arborgreen we encourage your feedback and questions. If you have any enquires about any aspect of Arborgreen or Arborgreen's products and services please be free to get in touch.

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