

What bag ???

The Overview of Plastic Bags and the Alternatives

Here is your guide to understand the main problems and environmental impacts of plastic bags and the pros and cons of different alternative packaging systems used in Australia, including calico bags, polypropylene 'green bags', paper bags and biodegradable plastic bags.

There are two main types of plastic bags used in Australia in the retail sector, the 'singlet' style bags made of High Density Polyethylene (HDPE) and the 'boutique' style bags made of Low Density Polyethylene (LDPE).

The 'singlet' HDPE bags are the shopping bags you find at supermarkets and take-away food shops, usually they are not branded bag. The main problem with these bags is the use of non-renewable resources (oil and natural gas) in manufacturing, and they are a potential hazard to wildlife. They are responsible for killing tens of thousands of marine and terrestrial animals. In addition, they block drains, contribute to visual pollution and take between 20 and 1000 years to decompose. While HDPE bags can be recycled and there are recycling collection bins in major supermarkets, currently only 3% of plastic bags are recycled in Australia.



The 'boutique' LDPE bags are generally branded bags commonly used in department and fashion stores. LDPE bags are made from non-renewable resources, are non-biodegradable and no recycling program currently exists for this type of bags in Australia.

Kraft paper bags are an alternative to single use plastic bags. While paper is made from trees, kraft paper often contains recycled material. One other benefit of using this type of bags is that they are biodegradable. In addition, paper recycling systems are now well established in Australia. On the other hand, the pulping and bleaching processes involved in paper manufacture produce higher air emission and waterborne wastes than plastics manufacture.





Degradable plastic bags are another single use bag alternative to regular plastic bags. These bags can be broken by chemical or biological processes, which mean that unlike regular plastic bags they can decompose. The main disadvantage of degradable bags is that they could potentially contaminate plastic recycling programs and reduce the quality of the recycled resin plastic.

Degradable plastic bags can be classified:

1. According to the way they degrade (e.g. photo-degradable or they require actions of microorganisms, heat, water in order to break down)
2. According to the materials they are made of (e.g. natural - such as starch, synthetic polymers or conventional polymers with an additive to facilitate degradation).



The main types of degradable plastic bags used include:

- **Biodegradable starch based bags**, which are manufactured from renewable resources such as corn, wheat or potato. They are usually imported. The main problem with these bags is that they can be manufactured as a result of intensive agriculture activities which consume large amounts of water, chemicals and energy.
- **Photodegradable Polyethylene (PE) bags**, which contain UV sensitive additives are manufactured from non-renewable resources. They break down through the action of ultraviolet (UV) light which degrades the chemical structure of the plastic.



Non-woven Polypropylene (PP) 'green bags' are manufactured from non-renewable resources (oil and natural gas) and usually have a removable base that is made of a range on materials such as cardboard, nylon, polyethylene or PVC. The advantage of using these bags is their durability and long lifespan.





Woven HDPE bags are made from non-renewable resources such as oil and natural gas. They are not very common and they are usually imported to Australia. The environmental impacts are similar to those of plastic bags but being stronger, they have a longer lifespan than regular plastic bags.

Polypropylene (PP) 'Smart Boxes' are solid and they can carry a large number of items. They are made from non-renewable resources (oil and natural gas) and are potentially recyclable at end of life but collections and recycling system would need to be established in Australia.



Calico bags are made from woven cotton and are usually imported to Australia from Asia. Calico bags are strong, durable and flexible. The main problem with this type of bags is the use of synthetic fertilisers and pesticides in the cotton cultivation and manufacturing process. Additionally, cotton industry consumes large amounts of water. On the other hand, calico bags can be frequently reused and therefore have a longer lifespan than plastic bags.

Jute bags are made of naturally biodegradable and compostable fibre obtained from the jute plant. These bags are imported to Australia from Bangladesh and India. The main advantage of using jute bags compared with cotton bags is that the cultivation of jute requires far less water and chemicals.



Hemp bags are made from natural hemp fibre and no pesticides, fungicides or herbicides are required in the production. Similarly to jute, hemp also requires little in the production process. Hemp bags are reusable and biodegradable and they are stronger and more durable than cotton bags. Currently, most hemp bags are imported to Australia.

Tips to remember!

- Plastic bags are made from non renewable resources, they kill marine animals, block drains, contribute to visual pollution and take between 20 and 1000 years to decompose
 - Reusable bags have lower environmental impact than single use bags
 - The more durable the bag, the longer its lifespan
 - Reusable bags made of natural fibres, such as jute and hemp are biodegradable and require little water and chemicals in the production process
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