BANDIT®

Sustainable
Packaging Guide

Version 1.0

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Welcome, friend!

You've found our super handy **sustainable packaging resource**, where we delve into the world of packaging materials and their impact on the environment. In today's era of heightened environmental awareness, it is crucial to consider the sustainability of our **packaging choices**. From the materials used to the disposal methods, every decision we make can significantly influence **the well-being of our planet**.

This resource aims to provide you with a solid understanding of various packaging materials and their environmental implications. We explore a wide range of options, from traditional materials to innovative alternatives, highlighting the pros and cons of each.

Armed with this knowledge, we can make significant progress by opting for options that have lower environmental footprints and promote circularity in the packaging industry. Together we can minimise waste, reduce our reliance on non-renewable resources, and contribute to a healthier planet.

[Paper] Plastic Glass Aluminium Pulp Ink

Corrugated Board
Paperboard
Chipboard
Gummed Paper Tape
Seaweed
Translucent Barrier Paper

Corrugated Board, commonly referred to as cardboard, is a durable, multiple layer material used for packaging. Corrugated Board is comprised of wavy, corrugated sheeting glued between sheets of paper, giving it its sturdiness while remaining relatively light-weight. It is commonly used for shipping packaging.

Corrugated Board can be produced as either kraft or bleached, with uncoated or coated finishes available. Uncoated Kraft has the highest recycled content. Bleached is produced using new or 'virgin' materials and additional chemicals and processes, increasing material and energy consumption but is often employed to improve print performance, to achieve vivid colours.

[✓] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [×] WATER RESISTANT [×] FOOD SAFE

[Paper] Plastic Glass Aluminium Pulp Ink

Corrugated Board
Paperboard
Chipboard
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Translucent Barrier Paper

Paperboard is a broad category of single layer heavy duty paper based materials, also commonly referred to as cardboard. It is easily folded, formed and cut, creating a sturdy structure while remaining light-weight. It can be used for dry food products, as well as wet food products when coated with suitable materials in the interior. When referring to paperboard used for cartons and rigid boxes, the term Boxboard may be used.

Paperboard can be produced as either kraft, bleached or unbleached , with uncoated or coated finishes available. Uncoated unbleached Kraft has the highest recycled content. Bleached is produced using virgin materials, increasing overall consumption and decreasing recyclability, but is often employed to improve print performance, to achieve vivid colours.

[✓] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

[Paper] Plastic Glass Aluminium Pulp Ink

Corrugated Board
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Chipboard, sometimes known as Uncoated Recycled Board is a low-cost subset of Paperboard known as a heavy duty recycled stock. It is commonly used for packaging requiring stronger structural integrity, such as telescope tubes or rigid mailers. It is primarily made from recycled fibre. Due to its high recycled content Chipboard is not suitable for direct print, unless otherwise wrapped with an additional layer of material on the exterior.

[✓] RECYCLABLE [✓] BIODEGRADABLE [–] CERTIFIABLE [×] WATER RESISTANT [×] FOOD SAFE

[Paper] Plastic Glass Aluminium Pulp Ink

Corrugated Board
Paperboard
Chipboard
Gummed Paper Tape
Seaweed
Translucent Barrier Paper

Gummed Paper Tape, also know as Water-Activated Tape is a plastic free alternative to traditional Polypropylene or PVC packaging tape. It is manufactured from post-consumer paper pulp content, and when paired with sustainable inks, is biodegradable and/or recyclable in the yellow bin. The adhesive used in Gummed Tape is a water activated adhesive that bonds well with other raw paper materials, such as Corrugated boxes.

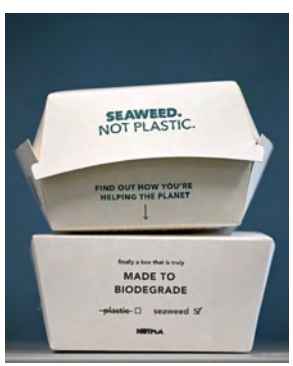
[✓] RECYCLABLE [✓] BIODEGRADABLE [−] CERTIFIABLE [×] WATER RESISTANT [×] FOOD SAFE

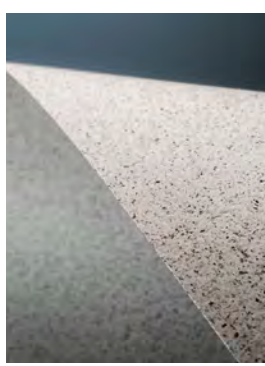
[Paper] Plastic Glass Aluminium Pulp Ink

Corrugated Board
Paperboard
Chipboard
Gummed Paper Tape
Seaweed
Translucent Barrier Paper

Seaweed products are an upcoming renewable packaging material derived from the fibrous biomass of seaweed. Seaweed is a fast growing, non-destructive crop, requiring no fertilisation, and is known to actively sequester carbon dioxide from the atmosphere.

These new materials are being developed for production as paper and paperboard, as films to replace petroleum based plastic films, and as a coating substance for water and heat proofing food packaging. Seaweed products are free of any synthetic additives, and are fully recyclable and biodegradable in large scale and home composts.



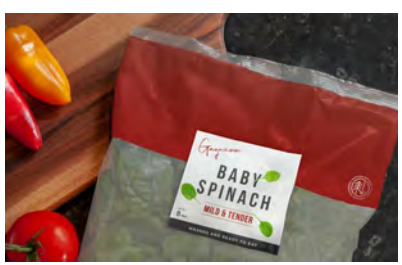


[✓] RECYCLABLE [✓] BIODEGRADABLE [−] CERTIFIABLE [×] WATER RESISTANT [✓] FOOD SAFE

[Paper] Plastic Glass Aluminium Pulp Ink

Corrugated Board
Paperboard
Chipboard
Gummed Paper Tape
Seaweed
Translucent Barrier Paper

Translucent Barrier Papers are light weight, virgin pulp papers that are food safe. This new application is being developed to replace petroleum based plastics that act as windows, wraps, sealed packs and food stickers, allowing consumers to view products while preserving the integrity of the food. Similar to traditional paper, this material is recyclable, repulpable, and biodegradable.



[✓] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [×] WATER RESISTANT [✓] FOOD SAFE

Paper [Plastic] Glass Aluminium Pulp Ink

Low Density Polyethylene Film
High Density Polyethylene Film
Polyvinyl Chloride
Polylactic Acid Polylactide
Polypropylene
Polyhydroxyalkanoate
Sugarcane Plastic

Low Density Polyethylene (LDPE) is a petroleum-based soft, flexible and light weight thermoplastic that is water and tear resistant and is food safe. It is commonly used as a film for shopping bags, plastic covers and shipping mailers. When heated to high temperature it can be used to create rigid plastics through injection moulding processes for packaging such as bottles, jars and tubes. It can be produced as transparent or opaque in appearance, and is easy to print on and is relatively low cost.

LDPE is the most abundant source of micro plastic pollution in the environment. In Australia, LDPE cannot be recycled in the yellow bin. It can be recycled through programs such as Redcycle, which is not currently operating in Australia as of 2023.

AVOID AVOID AVOID

[×] RECYCLABLE [×] BIODEGRADABLE [×] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper [Plastic] Glass Aluminium Pulp Ink

Low Density Polyethylene Film
High Density Polyethylene Film
Polyvinyl Chloride
Polylactic Acid Polylactide
Polypropylene
Polyhydroxyalkanoate
Sugarcane Plastic

Pre and Post-Consumer High Density Polyethylene (HDPE) is a petroleum-based soft, flexible and strong thermoplastic that is water and tear resistant and is food safe. Due to its stiff nature, it is commonly used for packaging requiring injection moulding, such as milk bottles and other hollow tubing. This plastic has a broader use in society due to its long-lasting quantities and weather and chemical resistance, being produced as fibres, furniture, play equipment, medical and construction materials and is a common component of global infrastructure.

Although HDPE is not biodegradable it is easily recycled in the yellow bin, and can be recycled several times over before quality degradation requires the introduction of virgin materials. Producing primarily virgin or Pre-Consumer HPDE is costly and requires petrochemicals to produce this new plastic.

AVOID AVOID AVOID

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Paper [Plastic] Glass Aluminium Pulp Ink

Low Density Polyethylene Film
High Density Polyethylene Film
Polyvinyl Chloride
Polylactic Acid Polylactide
Polypropylene
Polyhydroxyalkanoate
Sugarcane Plastic

Polyvinyl Chloride (PVC) is a light-weight, hard and durable thermoplastic. Its flexibility, water and tear resistance make it an appealing option for packaging. This plastic can withstand extreme cold and heat, and can also be stitched. It is commonly used for packaging requiring injection moulding, such as blister packs or clamshell containers. This material is susceptible to UV degradation after prolonged exposure. It also has a slight coloured tint.

PVC contains chemicals that are detrimental to human health and the global atmosphere, such as phthalates and chlorine. These chemicals leach into the environment during manufacturing, as well as after disposal into landfill, if not recycled correctly.

AVOID AVOID AVOID

[✓] RECYCLABLE [×] BIODEGRADABLE [×] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper [Plastic] Glass Aluminium Pulp Ink

Low Density Polyethylene Film
High Density Polyethylene Film
Polyvinyl Chloride
Polylactic Acid Polylactide
Polypropylene
Polyhydroxyalkanoate
Sugarcane Plastic

Polylactic Acid Polylactide (PLA) is a transparent, rigid, compostable thermoplastic derived from bio-based materials, such as corn. PLA is commonly used in film form to create eco-mailers and is a preferred option to LDPE. It can be used for injection moulding, blow moulding and blistering processes – although it is brittle, not impact resistant, and lacks flexibility.

PLA on its own cannot be composted in consumers homes. It has to be combined with Polybutylene Adipate Terephthalate (PBAT), a partly petrochemical derived binding agent during production to enable compostability in a reasonable timeframe and achievable conditions for consumers. Ensuring clear messaging for proper disposal is key to ensuring PLA/PBAT doesn't end up in recycling bins or landfill, which is unsuitable for composting this material.

AVOID AVOID AVOID

[×] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper [Plastic] Glass Aluminium Pulp Ink

Low Density Polyethylene Film
High Density Polyethylene Film
Polyvinyl Chloride
Polylactic Acid Polylactide
Polypropylene
Polyhydroxyalkanoate
Sugarcane Plastic

Polypropylene (PP) is a highly clear, light-weight and durable thermoplastic. It is resistant to moisture, chemicals, tearing and cracking, making it a popular option in packaging for stickers, tape and lables. It can be used for injection moulding to create bottles, caps, pumps, droppers, and tubes. This material is susceptible to UV degradation after prolonged exposure, and is also flammable. Due to its clarity this plastic can be produced in a range of vivid colours.

Polypropylene cannot be recycled in the yellow bin and takes several decades to breakdown in landfill. PP may contain additives such as cadmium and lead, which will inevitable leach into the environment during breakdown, disrupting bio-systems. If PP is burned at the landfill, it discharges harmful chemicals into the global atmosphere, negatively impacting human health.

AVOID AVOID AVOID

[×] RECYCLABLE [×] BIODEGRADABLE [×] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper [Plastic] Glass Aluminium Pulp Ink

Low Density Polyethylene Film
High Density Polyethylene Film
Polyvinyl Chloride
Polylactic Acid Polylactide
Polypropylene
Polyhydroxyalkanoate
Sugarcane Plastic

Polyhydroxyalkanoate (PHA) is a new compostable, water-soluble bio-plastic that, unlike PLA/PBAT, contains no petrochemical derived additives. PHA is a fully bio-based materials, being derived from bacterial fermentation. It is used for single-use food packaging as well as single-use consumer goods packaging. PHA will degrade in a range of environments, such as home composts, or in water-systems, leaving no trace micro-plastics in the environment.

[×] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [×] WATER RESISTANT [✓] FOOD SAFE

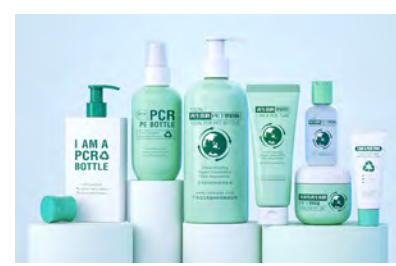
Paper [Plastic] Glass Aluminium Pulp Ink

Low Density Polyethylene Film
High Density Polyethylene Film
Polyvinyl Chloride
Polylactic Acid Polylactide
Polypropylene
Polyhydroxyalkanoate
Sugarcane Plastic

Sugarcane plastic is made from sugarcane derived bio ethanol, a plant based alcohol. Similar to how we've incorporated ethanol as a substitute to petrol, this bio ethanol acts as a substitute to traditional petrochemical based plastics.

Sugarcane is a fast growing, non-disruptive crop that captures C02 from the atmosphere as it grows. Sugarcane waste is known as Bagasse, which can be used to generate electricity to power the ethanol production process, or used as a packaging pulp in its own right.

Consumers are often confused about how to dispose of bioplastics. In order to improve material performance, bio plastics often include petrochemical based additives, increasing the difficulty of clear and appropriate disposal. Similar to traditional HDPE, Sugarcane plastic cannot be composted but can be recycled in the yellow bin in Australia.



USE THIS USE THIS

[✓] RECYCLABLE [×] BIODEGRADABLE [✓] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper Plastic [Glass] Aluminium Pulp Ink

Glass

Glass is an infinitely recyclable resource made from sand, limestone, soda ash and recycled glass. It is non-toxic, hygienic, chemical and heat resistant, and does not degrade over time.

USE THIS USE THIS

[✓] RECYCLABLE [×] BIODEGRADABLE [−] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper Plastic Glass [Aluminium] Pulp Ink

Aluminium Foil and Sheeting

Aluminium is a light-weight, soft and flexible metal. It is the most abundant metallic element in Earth's crust. It has been widely used in packaging due to its ability to be formed into any shape and its resistance to extreme temperatures, oil, water and rust. It is also hygienic, non-toxic and is a light barrier, making it a common choice for food packaging. By far its most attractive quality is its recyclability.

Unlike paper and certain plastics, Aluminium can be recycled an infinite number of times. No virgin, or new Aluminium is needed to maintain the quality of the material, as is the case with some plastics, such as HDPE, due to quality degradation over time. The process of recycling Aluminium is fast and energy efficient, with consumers being well educated on how to clean and dispose of this packaging.

[✓] RECYCLABLE [×] BIODEGRADABLE [−] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper Plastic Glass Aluminium [Pulp] Ink

Bagasse
Paper Pulp
Cornstarch Foam
Mycelium Foam

Bagasse is the byproduct of the production of Sugarcane left over after the juice of the plant has been harvest. It is a dry, fibrous material that when mixed in a slurry of hot water, forms a mouldable pulp. It is often combined with bamboo pulp to create a smoother finish on packaging products.

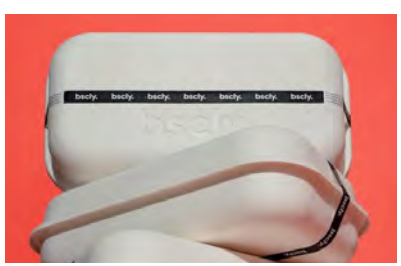
As Bagasse requires less chemical processing, additives and energy consumption than other tree-based papers, it is an prefer alternative to paper, plastic or polystyrene where appropriate. It is a strong, microwavable, food safe and compostable material that is a key player in the future of the packaging circular economy.

[✓] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper Plastic Glass Aluminium [Pulp] Ink

Bagasse
Paper Pulp
Cornstarch Foam
Mycelium Foam

Similar to Bagasse, Paper Pulp is made from post-consumer paper or boxes, that when mixed in a slurry of hot water, forms a mouldable pulp. Paper Pulp is a strong, microwavable, food safe and compostable material. It can also be recycled in the yellow bin in Australia.



USE THIS USE THIS

[✓] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [✓] WATER RESISTANT [✓] FOOD SAFE

Paper Plastic Glass Aluminium [Pulp] Ink

Bagasse
Paper Pulp
Cornstarch Foam
Mycelium Foam

Cornstarch Foam is a compostable and water-soluble alternative to styrofoam as void fill, made from cornstarch and soy oil. It provides cushioning and insulation in packaging on par to traditional synthetic foams. This material required less chemical processing, additives and energy consumption to manufacture and is a zero-waste solution to combat synthetic foams.

Styrofoam can take a minimum of 500 years to fully decompose in landfill, dependant on the conditions, leaching chemicals into the environment and ozone into the global atmosphere. Cornstarch Foam can be dissolved easily is water by consumers, with no negative effects on water systems or bio-systems.




[−] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [×] WATER RESISTANT [✓] FOOD SAFE

Paper Plastic Glass Aluminium [Pulp] Ink

Bagasse
Paper Pulp
Cornstarch Foam
Mycelium Foam

Mycelium Foam, also know as Mushroom Foam is a fungus root based foam, harvested from the agriculture waste of hemp, flax, straw and rice husks. Mycelium Foam is a renewable, biodegradable and compostable alternative to using traditional styrofoam as void fill. It is easy to grow and needs little water or sunlight to produce at a commercial scale. The resulting packaging is light-weight, strong, flame retardant and can be moulded into different shapes.

Mycelium Foam can be composted easily by consumers in around 40 days with minimum intervention. Manufacturers often work with companies to embed seeds into their Mycelium Foam to further increase the bio-contributing appeal of this material.

[−] RECYCLABLE [✓] BIODEGRADABLE [✓] CERTIFIABLE [×] WATER RESISTANT [✓] FOOD SAFE

Paper Plastic Glass Aluminium Pulp[Ink]

Vegetable and Soy Inks

Vegetable and Soy based Inks are eco-conscious alternatives to traditional petroleum based inks used in commercial printing processes. Traditional inks emit volatile organic compounds (VOCs) during the printing process due to a petroleum binding agent they contain. VOCs contribute to air pollution, and can negatively impact human health. Vegetable Inks use Soy, Linseed, Castor, Canola and Safflower oil as their alternative binding agent.

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The **Brand Experience** Studio