

Plastic definition guidance

This document is to help suppliers to determine whether a material is a plastic.

Introduction

The *Plastic Reduction and Circular Economy Act 2021* (PRCE Act) prohibits certain unnecessary or problematic plastic items, making it an offence to supply these items to another person while carrying on a business. This includes an activity for commerce, charity, sport, education or community purposes.

Why some plastic items are banned

Banning the supply of problematic plastic items reduces plastic litter and waste, empowers consumers to use resources more sustainably and helps NSW to become a circular economy.

On 1 June 2022, the supply of lightweight plastic bags with handles – other than a barrier bag – that are 35 microns or less was banned.

From 1 November 2022, the second stage of prohibitions start on the supply of single-use plastic:

- a. straws
- b. stirrers
- c. cutlery (including sporks and chopsticks)
- d. cotton buds
- e. bowls (not including bowls designed or intended to have a spill-proof lid whether separate or attached)
- f. plates.

The supply of all expanded polystyrene food service items, and certain rinse-off personal care products containing plastic microbeads, is also banned from 1 November 2022.

Other plastic items will be reviewed for future phase outs, such as bowls with lids, plastic cups (including lids), all oxo-degradable plastics, fruit stickers (non-compostable), heavyweight plastic shopping bags and barrier/produce bags. This review will commence in 2023. The EPA will provide further information closer to this time.

Please visit our website for more information about banned items.

Scope

This document is to help suppliers determine whether a material is a plastic. The guidance applies to all single-use plastic items in the PRCE Act – it does not apply to reusable items and items that meet certain standards as identified in plastics guidance and where a specific exemption applies. Exemptions include, for example, the supply of plastic straws for people with a disability or medical need. Further information on exemptions is available on the EPA website.

If uncertain, suppliers are encouraged to adopt a precautionary approach to achieving compliance with the Act when ordering and supplying items. This might include switching to non-plastic alternatives.

What is plastic?

Under the PRCE Act, 'plastic' means the following, but does not include material excluded by the regulations:

- a. material made from or comprising organic polymers from plant extracts or fossil fuels, whether the material is processed, reprocessed, re-used, recycled or recovered,
- b. material prescribed by the regulations.

This definition is intentionally broad to capture innovations in material science. To guide its enforcement efforts, the EPA is focused on plastics as synthetic and semi-synthetic organic polymers, generally characterised by their ability to be moulded and shaped at moderate temperatures and pressures. Most plastics are thermoplastic, meaning they can be continually softened and reshaped by heat without significantly altering their properties. A smaller number of plastics are thermosets, made by the irreversible curing of a monomer solution into a plastic polymer, and do not have the property of thermoplasticity.

A polymer is a chemical comprised of many repeating chemical units called monomers, covalently bonded together. Polymers typically have vastly different mechanical, chemical and biological properties from their monomer constituents. Small chemical alterations to the monomers within a natural polymer, or the polymerisation of naturally occurring but not naturally polymeric monomers, may have significant impacts on the properties of the materials.

Natural polymers tend to readily biodegrade and, in the quantities already found in nature, their degradation products are important components of the ecosystems in which they occur. For this reason, natural polymers generally don't create the same environmental harms that synthetic and semi-synthetic polymers do. In most cases, the EPA would not consider unmodified naturally sourced polymers to be plastics.

To be considered 'natural', the polymerisation process must occur in nature, independent of any extraction or production process, or any other human intervention.¹ To be considered 'unmodified', there must be no systematic chemical modification to the monomer or its linkage to adjacent repeat units, nor any covalent linkages to other polymer chains that are not present in the natural polymer prior to extraction.

While natural polymers, such as plant material, can be used as inputs to the production of 'bioplastics', the polymer resulting from such a process is a plastic. It did not occur in nature and the natural polymer used as an input was modified to create it. The EPA as regulator has the discretion to determine whether a polymer is

natural or unmodified, and whether a natural, unmodified polymer is a plastic.

Suppliers should take note that common terms used in plastic marketing like 'bioplastic', 'oxo-degradable', 'green' or 'compostable' do not affect whether a material is a plastic under the PRCE Act. The EPA considers materials meeting the definition of plastic are plastic regardless of whether they are processed, reprocessed, re-used, recycled or recovered. The ability of a material to biodegrade, or to be recycled, or composted either in home or industrial composting facilities does not affect whether the EPA considers it a plastic.

The table on the next page gives some examples of common materials that are or are not considered plastic by the EPA.

What is a plastic item?

If an item contains any amount of plastic, it is a plastic item. If an item contains an organic polymer that is not on the list of what is not considered plastic, take a precautionary approach and assume that the material is plastic and that the item is a plastic item.

In a very limited number of cases, it may not be possible to create a safe product without a negligible amount of plastic (for example, plastic adhesive to safely affix cotton to a wholly non-plastic cotton bud stem). If your product falls into this category **for health and safety reasons only**, and **the product cannot be re-designed to eliminate the use of plastic**, it is the EPA's position that you may continue to supply it. No other factors, including cost, convenience or aesthetics, are acceptable reasons for the inclusion of plastic in an otherwise prohibited item. This consideration is limited to the smallest possible amount of plastic that is needed to minimise risks to human health and the environment. It remains the obligation of suppliers to ensure they supply only lawful products.

Questions to ask your supplier

If you are unsure whether an item contains plastic, check with your supplier. Ask questions like:

- Can you confirm in writing that the items do not contain any form of organic polymer (except an unmodified natural polymer)?²

¹ For the avoidance of doubt, fossil fuel resources are not considered natural for this purpose.

² For the avoidance of doubt, fossil fuel resources are not considered natural for this purpose.

- Can you provide an ingredient list with chemical structures and any additives included?

Check with the EPA

It is your responsibility as a supplier to ensure you do not supply banned plastic items. The EPA may be able to assist if you aren't able to determine whether a polymer is a plastic. You will need to provide the following information:

- a detailed description of why you believe your product is not a plastic
- Standard Technical Specifications including ALL ingredients (inclusive of any 'incidental' ingredients) to support your determination
- the function served by the polymer
- the chemical structure of the polymer
- information (including reference material) on where the initial source material is produced
- information (including reference material) on where a natural polymer may be found in nature.

 Is not plastic and is allowed	 Is plastic and banned
<ul style="list-style-type: none"> ✓ Cardboard ✓ Paper ✓ Wood ✓ Bamboo ✓ Vegetable fibre including bagasse ✓ Natural latex and rubber (with no plastic additives) 	<ul style="list-style-type: none"> X Polypropylene X High and low-density polyethylene X Polyethylene terephthalate (PET) X Polystyrene X Polyvinyl chloride (PVC) X Polyvinyl acetate (PVA) X Polyvinyl alcohol (PVOH) X Polylactic acid (PLA) X Polybutylene succinate (PBS) X Polyhydroxyalkanoates (PHAs) X Thermoplastic starch (TPS) X Melamine X Epoxies X Acrylate polymers X Synthetic latex and rubbers X "Aqueous" dispersions containing synthetic or semi-synthetic organic polymers <p>(This list is not exhaustive and is subject to review)</p>

The PRCE Act details which items are prohibited plastic items, noting that many reusable plastic items and all non-plastic products are allowed. The EPA has provided guidance on how to identify whether food service ware items are single-use on our website.

The EPA as part of its continuous review process will monitor new technology, research and evidence to inform its position on what constitutes a plastic, and as a result may update this guidance in the future.

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This document is provided for information and guidance only. It is not definitive and is not legal or regulatory advice. The EPA reserves the right to use its discretion to determine whether an item is plastic and to take regulatory action. You may wish to obtain your own advice if you are unsure whether your item is prohibited.