AUSTRALIAN PACKAGING COVENANT ORGANISATION

Action Plan to Phase Out PFAS in Fibre-Based Food Contact Packaging

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Contents

This is an interactive document. The top toolbar and contents buttons allow you to navigate through the different sections of the guide.

Acknowledgments
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Executive summary

Per- and polyfluoroalkyl substances (PFAS) are a group of several thousand fluorinated compounds, characterised by strong chemical bonds that make PFAS chemicals useful for a range of applications, including within some food contact packaging. PFAS are, however, very resistant to degradation in the environment, which makes them potential environmental pollutants.

This action plan is designed to support businesses to voluntarily phase out intentionally added PFAS in fibre-based food contact packaging by 31 December 2023, with provision for a stock run-out period within a reasonable timeframe (approximately 6 to 8 months).

The action plan follows a framework to drive action, providing businesses with a supported pathway to meet the phase out. This includes:

- a guide on how to test for total organic fluorine (TOF) which is indicative of PFAS,
- how to report on the PFAS present in fibre-based food contact packaging, and
- considerations for selecting alternatives.

To use this interactive document, please navigate to Decision Tree 1 (**Section 4.2**) to get started. This will support businesses in determining what needs to be tested, how to test and how to report based on supply chain position and context. The Decision Tree will guide businesses to the relevant sections in the action plan to provide additional details and support actions.

1. Introduction

1.1. Purpose

This action plan sets out a voluntary, industry-led approach to phase out per- and polyfluoroalkyl substances (PFAS) in fibre-based food contact packaging in Australia.

This action plan responds to a 2021 study, led by the Australian Packaging Covenant Organisation (APCO) and supported by the Planet Ark Environmental Foundation (Planet Ark), to identify PFAS in fibre-based food contact packaging, and supports the implementation of:

- the National PFAS Position Statement agreed to by all Australian governments in 2018, and
- the 2025 National Packaging Targets (2025 Targets).

1.2. Structure of phase out

While this action plan focuses on a phase out PFAS in fibre-based food contact packaging, **the National PFAS Position Statement sets out an expectation that industry will be developing a strategy to transition away from using PFAS in all packaging and products.** This includes taking steps to prepare for testing for PFAS in other non-food contact fibre-based packaging.

Identifying and phasing out PFAS in plastic packaging is another future area of focus, and businesses should, where possible, investigate options for testing or engaging with the supply chain to gain transparency on potential PFAS inputs, for example, in processing equipment.

APCO will work to support industry as the scope for the PFAS phase out expands in future, with a particular focus on researching the current levels of PFAS in plastic packaging, non-food contact fibre-based packaging and recycled fibre content. This action plan can also be used to support industry structure future phase outs of PFAS in additional packaging items.

1.3. Regulatory and policy framework

This action plan outlines a national, industry-led approach to manage the elimination of intentionally added PFAS in fibre-based food contact packaging in Australia through phase out actions. This will support brand owners and packaging manufacturers/suppliers/importers to work towards an agreed and clear set of objectives.

This action plan does not impose regulatory measures or mechanisms for controlling PFAS use, but instead looks to industry to lead and manage the removal of PFAS by identifying and adopting alternative packaging materials and treatments to minimise environmental harm.

1.4. Background

1.4.1. PFAS Position Statement

In February 2018, the Commonwealth and state and territory governments established the **Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination** (the Intergovernmental Agreement), which supports collaboration and cooperation between jurisdictions to respond consistently and effectively to PFAS contamination.[1] This was revised in February 2020.

The Intergovernmental Agreement establishes that a precautionary approach should be taken to PFAS exposure, stating that:

> *"While it is clear that PFAS can persist in humans, animals and the environment, understanding of the human health effects of long-term PFAS exposure is still developing. As a precaution, governments in Australia recommend that exposure be reduced wherever possible while research into any potential health effects continues".*

Governments have also agreed to, and included as Appendix D to the Intergovernmental Agreement, the National per- and polyfluoroalkyl substances (PFAS) Position Statement. The purpose of the National PFAS Position Statement is set out as:

> ***"All Australian governments agree that further release of PFAS into the environment from ongoing use should be prevented where practicable, and that actions to reduce or phase out the use of PFAS should be nationally consistent.***
>
> *The purpose of this Position Statement is to outline a nationally unified vision for reducing future PFAS use in Australia, so that governments and PFAS users (whether industry, businesses, manufacturers, regulators, or policymakers) can work towards an agreed and clear set of objectives.*
>
> *This Position Statement seeks to encourage discussion with industry and other stakeholders about how PFAS should be managed, including under the National Standard for Environmental Risk Management of Industrial Chemicals (National Standard). It does not, in itself, impose regulatory measures, timeframes or create mechanisms for controlling PFAS use."*

The Position Statement establishes that transitioning away from PFAS should be the ultimate goal in Australia, and states that:

> *"Importers, sellers and users of chemicals should inform themselves about the presence of PFAS in products and articles, due to their potential negative environmental, health and socioeconomic impacts.*
>
> *Entities that currently sell or use long- or short-chain PFAS are encouraged to develop a strategy that outlines their current uses, and how and when they will transition away from these chemicals."*

1.4.2. 2021 PFAS in Fibre-Based Packaging report

The 2021, an APCO-led study, in partnership with Planet Ark, piloted a scientifically rigorous methodology to identify the presence of PFAS in a range of fibre-based food contact packaging.[2] The samples were divided into 8 categories for analytical purposes (Table 1).

***Table 1** Categories of packaging provided for testing*

	PACKAGING CATEGORY
1	Baked goods packaging (e.g., cake boxes), muffin cups, greaseproof paper, butter wrap
2	Bags, chips (crisps) and microwave popcorn packaging, cake mix bags
3	Paperboard food boxes, e.g., pizza boxes, takeaway boxes, salad boxes, hot chip boxes
4	Fast food wrappers, burgers, chip bags, sandwich wraps
5	Clamshell-style products not listed elsewhere
6	Pails, cups, and buckets for food and hot drinks
7	Bagasse packaging
8	Not easily classified

Testing was undertaken in two stages:

In the first phase, 74 samples were tested for total organic fluorine (TOF) which provides an indicator of whether a sample contains PFAS.

In the second phase, a subset of 35 samples underwent more detailed testing to determine whether certain specific types of PFAS could be identified.

TOF content is an indicator of the presence of PFAS. High TOF concentrations (>800ppm) indicate high concentrations of PFAS, and low TOF (<100ppm) indicates low/no PFAS.

This study showed that a significant proportion of fibre-based food contact packaging in Australia contains PFAS, with 28% of the 74 samples tested having high TOF concentrations and a further 8% having medium TOF concentrations.

High TOF concentrations are an indicator of intentionally added PFAS. At low levels it is more difficult to conclude that the concentrations are due primarily to intentionally added PFAS.

Except for Category 7 (Bagasse packaging), all categories of packaging had at least some samples with low or no detectable PFAS. **This suggests that alternatives to PFAS are available for most types of fibre-based packaging, particularly paper and paperboard in various applications.**

Category 3 (Paperboard food boxes, e.g., pizza boxes, takeaway boxes, salad boxes, hot chip boxes) has many applications that require heat, grease and moisture barriers, but none of the samples were identified with high or medium TOF concentrations.

The finding that all samples in Category 7 contained high TOF concentrations suggests a heavy dependence on PFAS for bagasse packaging. It also suggests that non-PFAS alternatives are less likely to be currently available nor as effective as PFAS, or at least are not as widely used for bagasse packaging on the Australian market. Bagasse packaging is often associated with claims of compostability and recyclability. Composting of packaging that contains PFAS contaminates compost. Therefore, it is important that compostability standards account for PFAS (see **Section 4.3.3** for more detail on Australian compostability standards and PFAS).

Microwave popcorn packaging is the 'poster child' for international studies of PFAS in packaging. The one popcorn packaging sample tested in the study contained high levels of PFAS, consistent with international observations.

Category 1 (Baked goods packaging (e.g., cake boxes), muffin cups, greaseproof paper and butter wrap), included samples with high, medium and low/undetectable TOF. This indicates that different products/brands within this category have different reliance on PFAS.

1.4.3. International agreements and policy

The **European Commission's Chemicals Strategy for Sustainability** (October 2020) includes actions to phase out the use of PFAS in the European Union (EU), unless their use is essential. As of July 2020, Denmark banned cardboard and paper food contact materials containing PFAS. This **ban** does not extend to fibre-based food packaging made from recycled paper only where an additional barrier is used to prevent the packaging from touching the food inside.

In the EU, Perfluorooctanoic acid (PFOA), its salts and precursors have been restricted under the **Registration, Evaluation, Authorisation and Restriction of Chemicals** (REACH) regulation. Germany, Sweden, the Netherlands, Norway and Denmark formally announced the intention to submit a restriction proposal for PFAS to the European Chemicals Agency (ECHA), with submission expected by January 2023.[3] A restriction proposal (including restriction on manufacturing, marketing authorisation and use of PFAS) is a first step towards a European ban on PFAS.

Two further groups of PFAS are currently under consideration for listing under the **2004 Stockholm Convention on Persistent Organic Pollutants**. As of June 2022, perfluorohexane sulfonic acid (PFHxS) will be added to the list of targeted substances for global elimination under Annex A of the treaty, as agreed during the 10th Conference of the Parties (COP10) to the Convention in Geneva, Switzerland in 2021.[4] Together, these listings would effectively capture all long-chain PFAS. Australia is one of 184 parties worldwide to have **ratified the Stockholm Convention**, but it is yet to have ratified the listings related to PFAS.

In April 2021, the United States Environment Protection Agency (EPA) announced the creation of an EPA Council on PFAS to explore the best way to mitigate and reduce PFAS pollution. As of August 2022, nine US states have enacted phase outs of PFAS in food contact packaging.[5] Several other states are introducing legislation to eliminate PFAS in food contact materials.

In May 2022, **Canada released** a proposed new *Prohibition of Certain Toxic Substances Regulation, 2022* which would replace the *2016 Toxic Substances Regulation* currently in effect, and eliminated the various exemptions allowing the use, sale, or import of PFAS substances in Canada under certain circumstances.

1.4.4. 2025 National Packaging Targets

This action plan will also support Australia's work towards the 2025 National Packaging Targets (the 2025 Targets), including:

100% of packaging to be reusable, recyclable or compostable by 2025.

Phasing out intentionally added PFAS will *reduce the risk of contamination of PFAS in recycled fibre and compost.*

Problematic and unnecessary single-use plastic packaging to be phased out by 2025.

Bans on certain single-use plastic packaging are likely to lead to an increase in the use of compostable and other fibre-based packaging. *Phasing out PFAS will reduce the risk of perverse outcomes from these bans.*

2. Why a phase out?

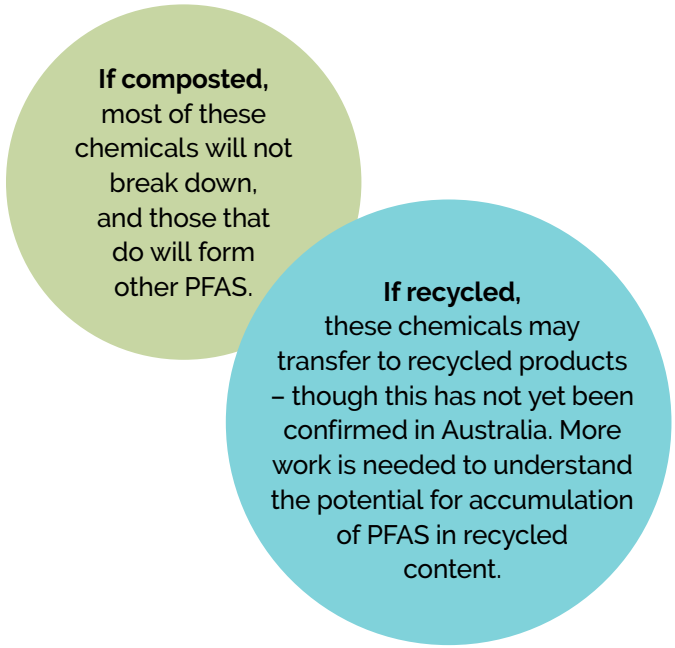
2.1. Characterisation of PFAS and its uses in packaging

PFAS are a group of several thousand synthetic organic compounds. The characteristic feature of all PFAS molecules is the carbon-fluorine bond, which is the strongest chemical bond in nature and makes these chemicals highly resistant to heat, stains, grease and water. These properties make PFAS chemicals useful for a range of applications, including some food contact packaging.

PFAS are very resistant to degradation in the environment, which makes them potential environmental pollutants. Some types of PFAS are known to be toxic and to bioaccumulate in organisms. Given that PFAS can bioaccumulate, research into the human health effects of PFAS exposure has been ongoing.

2.2. Challenges posed by PFAS in packaging

In the context of a circular economy, PFAS in fibre-based recyclable or compostable packaging have the potential to contaminate recovery system outputs over time.



PFAS in compostable packaging poses specific challenges to organic waste streams, including where these are disposed to landfill. After collection and processing in a composting facility (or similar organics recycling process) the end products will be applied to landfill, with potential impacts on the environment and food production. Researchers in the United States have found that fibre-based packaging can release PFAS into the environment if composted.[6] More work is needed to understand the potential for packaging to release PFAS into the environment if composted in Australia.

In 2019-20, approximately 3.5 million tonnes of fibre-based packaging was placed on the Australian market.[7] While most fibre-based packaging is potentially compostable, only 10,000 tonnes, or 0.3%, is certified to a composting standard and can be marketed as certified compostable (see **Section 4.3.3** for more detail on Australian compostability standards and PFAS).

Any natural fibre-based packaging should biodegrade, however many inks, polymer linings and additives can cause toxicity concerns. It is important that the composition and additives of fibre-based packaging be assessed.

There are two trends over the next 5-10 years that make the phase out of PFAS more important:

1. Increasing use of fibre-based packaging for food service applications as problematic and unnecessary single-use plastics are phased out.

2. Kerbside FOGO collections being rolled out to more households with many councils considering accepting compostable packaging.

The **National Waste Policy Action Plan 2019**, prepared by the Australian Government, state and territory governments and the Australian Local Government Association, includes a target to halve the amount of organic waste sent to landfill by 2030. The policy includes a commitment to deliver a food organics and garden organics (FOGO) collection to households and businesses by 2023. In April 2021, the Australian Government **estimated** that only 30% of Australians currently have access to a full FOGO collection service, while over 70% have access to a garden organics collection service.

The availability of household FOGO collection services will improve over time in response to government policy and support programs. The NSW Environment Protection Agency has, as of 25 July 2022, placed a ban on fibre-based food contact materials being added to FO and FOGO collections, with PFAS contamination as a key cause. However, collection services, particularly in South Australia, already allow households to include compostable packaging. This could become more common in the future as composting facilities adapt their processes to manage contamination. This action plan will help to ensure that the presence of PFAS does not become a barrier to realising the potential of compostable food contact packaging to support the greater recovery of food waste.

2.3. PFAS and recycled content

A possible source of non-intentionally added PFAS could be from recovered fibre (i.e., recycled paper and cardboard used in manufacturing the packaging). Recycled content is a very important source of raw material in Australia, with over 60% of fibre used in Australia sourced from recycled products.[8] **There are additional complexities in the sourcing of recycled content with no intentionally added PFAS, as some fibre-based non-food contact packaging (where a PFAS phase out is not in place) may be included in the feedstock, and there may also be possible contamination from water sources and processing aids.** This action plan acknowledges that this may lead to un-intentional levels of PFAS in fibre-based food contact packaging.

However, it is not currently possible to draw any conclusions about the presence or effect of recycled content in the APCO 2021 study, due to the absence of information on recycled content in the samples tested, and no other studies have been undertaken in an Australian context.

Following early confidential data from industry and international best practice, this action plan will apply the same threshold (100ppm) and timeframe for fibre-based packaging with recycled content as for virgin fibre-based packaging. **APCO is looking to explore opportunities to address the knowledge gaps in the research around recycled content and PFAS to understand where complexities and irregularities exist and will inform engagement with governments and industry on future actions.**

3. Overview and timings: framework to drive action

The below table provides an overview of the timings of the phase out, and aligns actions with APCO's framework to drive action model.

***Table 2** Framework to drive the phase out of PFAS*

	ACTION	ACTION PLAN SECTION	WHEN
Identify the problem	Determine if your packaging is in scope.	**4.1**	Ongoing
	Determine the process and conduct testing for PFAS in your packaging.	**4.2 Decision Tree 1** **4.3**	28 February 2023
Identify opportunities and analyse	Document all barriers and opportunities for alternatives using the alternatives criteria checklist.	**5.2.2**	Early 2023
	Assess the viability of alternatives: eliminate, redesign, replace or innovate.	**5.1 Decision Tree 2** **5.2**	Ongoing
Collaborate and innovate	Collaborate with supply chains, business and community partners or industry networks to find/implement a solution.	**5.3**	Ongoing
Phase out intentionally added PFAS in fibre-based food contact packaging.			Manufacturing and importing phase out by 31 Dec 2023*
Communicate and report	Report on the PFAS levels present in your fibre-based food contact packaging in February 2023 and December 2024. For any packaging with the total fluorine content above 100ppm, include a strategy and timing that will be undertaken to replace those packaging materials.	**4.4**	Testing 1: 28 February 2023 Testing 2: 31 December 2024
Expand	Continue reporting beyond 2024 to monitor successes.	Out of scope	Post-2023
	Potential for industry to lead a focus on PFAS in plastic packaging, PFAS in non-food contact fibre-based packaging and PFAS in recycled content.		

* With a provision for stock run-out period within a reasonable timeframe (around 6-8 months) post-31 December 2023.

4. What: Testing for PFAS

4.1. Product scope

This action plan's scope will be set out in three phases. The first phase includes direct food contact fibre-based packaging and falls within the December 2023 deadline, while the second and third phases will be ongoing until 2025. This is in line with the delivery of the 2025 Targets for 100% of packaging to be reusable, recyclable and compostable, and for the phase out of problematic and unnecessary single-use plastic packaging.

Phase out by 31 December 2023

Phase 1: December 2023

These phases ongoing until 2025

Phase 2: Extension of phase 1

Phase 3

Click on the green boxes above to be taken to more information about each phase.

This structure has come from a need to support industry to identify and move away from PFAS in all forms of packaging, as is consistent with the National PFAS Position Statement but recognises that the December 2023 deadline for such a variety of packaging items would put an unfair burden on industry.

This approach also recognises that testing to determine a baseline of PFAS levels and the requirement for a phase out in further packaging items including indirect food contact packaging, recycled fibre or plastic packaging has also not yet been conducted in Australia.

Phase 1: *Phase out by **31 December 2023***

4.1.1. Phase 1: Fibre-based direct food contact packaging to be phased out by December 2023

This action plan is focused on **fibre-based food contact packaging**. The international literature has identified that PFAS are often added to this type of packaging as a barrier to heat, grease and water.

Fibre-based packaging is defined as packaging primarily made from plant-based fibre, including wood, bamboo and bagasse.[9] Throughout this action plan the general term 'fibre-based packaging' is used to cover packaging material types such as boxboard, carton board, corrugated board, paper bags, bagasse and other fibre-based packaging.

This action plan will define food contact using the definition from the **Food Safety Systems Certification (FSSC) Scheme:**

> *"direct food contact surfaces or materials (i.e. physically touching the food or in contact with headspace) that will be in contact with the food during normal use of the food packaging"*

The product scope in the action plan includes both pre-packaged foods for human and animal consumption as well as food service packaging (tableware). **While indirect food contact fibre-based packaging should be tested** (see **Section 4.1.2**), **the direct food contact applications listed in Table 3 are a priority focus.**

***Table 3** Packaging applications of priority for Dec 2023 phase out of PFAS (non-exhaustive)*

SECTOR	PRODUCT EXAMPLES	PACKAGING EXAMPLES
Pre-packed foods	Baked goods – cakes, muffins, biscuits	Boxes, muffin cases, greaseproof paper
	Butter	Wrap
	Microwave popcorn, crisps, cake mix, sweets	Bags
Food service	Pizza, hot chips, hamburgers	Boxes, cups, clamshells, wrap
	Sandwiches, salads	Paperboard wedges, boxes, wrap
	Various hot and cold foods	Plates, bowls, boats, trays, cups

Phase 2: *Ongoing **until 2025***

4.1.2. Phase 2: Indirect fibre-based food contact packaging

The second phase includes a focus on all other fibre-based food contact packaging, including indirect food contact packaging. **While direct food contact packaging is included as priority focus for the December 2023 phase out, indirect food contact packaging is considered as a next priority area of focus.**

***Table 4** Packaging applications for focus in phase 2 of a phase out*

INCLUDES		EXCLUDES	
Indirect food contact packaging encasing soft plastic.[‡]	A fibre-based box that contains frozen goods.	Indirect food contact packaging encasing other packaging.	A fibre-based box encasing metal cans.
	Cereal boxes.		A fibre-based box encasing jars.
	Box of biscuits with a plastic/foil inner bag.	Non-food contact packaging.	
	A fibre-based sleeve on a microwave meal.	Packaging encasing an indirect food contact packaging.	

APCO would encourage businesses to undertake testing within this phase as soon as possible. This phase of testing may form part of phase 1, with businesses testing items in scope for the February 2023 reporting period. This may include scoping testing, where only a few items are tested for total fluorine to determine the need for more extensive testing.

APCO is eager to work with industry in this area, to build the evidence base and determine levels of PFAS in this area of packaging. Please **contact APCO** for further information on collaboration.

Phase 3: *Ongoing **until 2025***

4.1.3. Phase 3: All other fibre-based packaging and plastic packaging

Phasing out PFAS in plastic packaging is another future area of focus, and businesses should look where possible to begin investigating options for testing or engaging with the supply chain to gain transparency on potential PFAS inputs, for example, in processing equipment. Some initial **international research** has been done in this area, but testing needs to be done in an Australian context.

[‡] With soft plastics there is a possibility that the bag is not sealed properly, and the indirect fibre-based packaging may come into direct contact with food.

4.2. Decision Tree 1 – Testing and reporting

The Decision Tree (right) is designed to support businesses to determine what needs to be tested, how to test and how to report. It considers a business' supply chain position and packaging situation in determining the actions to be taken.

Click on the 'Yes', 'No' and/or category buttons on the right in this interactive document, to determine next steps.

Click on 'Yes', 'No' or category to create your decision

Do you use fibre-based food contact packaging?

YES **NO**

Brand owner

Packaging manufacturer/ supplier/importer

Click on 'Yes', 'No' or category to create your decision

4.3. Testing

This section sets out the key parameters for testing for fluorine levels in fibre-based food contact packaging. These parameters constitute the proof points required in reporting on the PFAS present within in-scope packaging.

4.3.1. Outcome of testing – fluorine threshold

To align with international approaches, intentionally added PFAS will be defined as

- **TF** a level of total fluorine (TF),
- **TOF** total organic fluorine (TOF), or
- **EOF** extractable organic fluorine (EOF)

– all indicative of PFAS - above 100ppm.

If a business receives a testing result over the 100ppm limit, the business should work to find alternatives.

As of March 2019, the Biodegradable Products Institute (BPI), the largest US certifier of compostable products, requires manufacturers who seek compostability certification to meet standard EN 13432, which sets a 100ppm limit for TOF. This allows for the presence of a low level of non-intentionally added PFAS, for example residual PFAS arising from the use of recycled fibre. As of January 2020, BPI also requires that manufacturers provide a statement of no intentionally added fluorine. The US Environment Protection Agency recognises the 100ppm limit set by the BPI in the EPA's Recommendations of Specifications, Standards and Ecolabels as helping purchasers identify and use private sector environmental performance standards and ecolabels within federal procurement to address PFAS.

The state of California in the US has banned intentionally added PFAS, commencing in January 2023, setting the threshold at 100ppm. Denmark has gone even further and set the accepted threshold at 20ppm.

In accordance with the requirements of AS4736 and AS5810, the Australasian Bioplastics Association (ABA) verification programme to the requirements of Australian Standards AS4736 and AS5810 includes a requirement of <100 ppm fluorine as noted in the **Standards,** and a declaration from manufacturers of no intentionally added fluorine. These requirements have been in place since 2006 in the case of fluorine content, and May 2021 in the case of intentionally added fluorine.

4.3.2. Testing responsibilities

Australian packaging manufacturers/suppliers/importers (and international packaging manufacturers/suppliers selling into Australia) have the responsibility for testing their products for PFAS.

In the absence of testing from their packaging manufacturers/suppliers/importers, brand owners should test for PFAS in their packaging. If brand owners are directly importing their packaging/packaged product, they will need to confirm with their overseas supplier that their packaging does not exceed the 100ppm fluorine threshold.

Brand owners purchasing packaging in scope from an Australian packaging manufacturer/supplier/importer will not need to test their packaging but can do so voluntarily or in collaboration with the packaging supplier. The brand owner will however need to submit a report or a Supplier Declaration to confirm that their supplier(s) has tested the relevant packaging for PFAS (see **Section 4.4** 'Reporting' for more details).

To determine testing responsibility and the necessary proof points, please use *Decision Tree 1 – Testing and reporting* in **Section 4.2**.

Regarding the groupings available for testing, organisations can follow the groupings within Table 5.

Table 5 Product groupings for testing

ITEM	DESCRIPTION
Final product	The complete packaging item, including all adhesives, labels, additives and coatings. A product that is ready for sale to the final consumer. If you are unable to gather a sample that contains all elements of the packaging item, a sample containing the fibre-based component of the packaging may be used.
Product families/ categories	Groups of final products that share the same characteristics, including the same labels, adhesives, additives and coatings. This may involve testing one item from the product family, or the raw materials that go into the product of the product family. If you are able to conduct testing for 95% of all inputs to the packaging, this can be used to count the TOF ppm.
Raw materials	The basic material from which the packaging (final product or product family) is made. These tests can then be used to conduct a weighted average measurement for the packaging items in scope. If you are able to conduct testing for 95% of all inputs to the packaging, this can be used to count the TOF ppm.

4.3.3. Certified compostable packaging

Businesses who have verified their packaging as compostable with the ABA in accordance with AS4736-2006 for commercial composting or AS5810-2010 for home composting after 20 May 2021, including new applications for verification and renewals of existing Certificates of Conformance **will not have to undergo additional testing as set out within this action plan for non-certified products.**

The Australian Standards for conformance require fluorine levels of <100ppm. The ABA uses an independent auditor who looks for this threshold when assessing pass or fail criteria on a finished article applying for an AS4736-2006 or AS5810-2010 compostable certification. This and all the testing required for conformance to the Standards is conducted by independently audited and accredited laboratories. The test reports are then submitted to an auditor who audits the reports on pass or fail criteria for conformance to the Standards. **Proof of test results and laboratory reports are mandatory for consideration of all properties included in the Standards.**[13]

There may be exceptions to ensure numerous products of the same variety do not need to be tested by an applicant (for example, if the products are all trays/bags in different dimensions). Normally, the thickest/most complicated structure would be tested, and other items below those outer limits would be deemed to pass. This is at the discretion of the auditor who will request details on all aspects of the application.

The auditor conducts an independent review of the test results and laboratory reports to determine if the requirements of the Standard have been met. Every application for a Certificate of Conformance requires testing of the products and a separate independent review of the results by the auditor. Retained samples of the original application provide a basis for random market testing. Certificates of Conformance are renewed annually.

Additionally, previously certified products had fluorine levels below 100ppm to have achieved a Certificate of Conformance. To maintain certification, since the requirement for no intentionally added PFAS was introduced, a number of products have been reformulated, resulting in even lower fluorine levels below 100 ppm.

Random auditing does occur and will increase in future if the volume of certified compostable packaging such as fibre-based food and multilayer films placed on the market increases and justifies the cost of additional random checks and subsequent testing/audits.

4.3.4. Testing methodologies

Three key testing methodologies/analytical approaches have been identified for quantifying total fluorine (TF), total organic fluorine (TOF) or extractable organic fluorine (EOF) regardless of chemical structure or molecular weight.

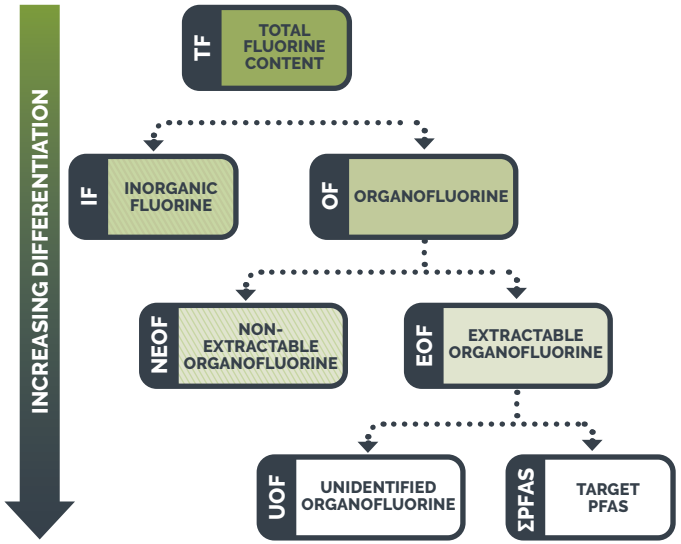


Figure 1: *Differentiation of different forms of fluorine*[14]

The three methodologies in Table 6 can be used for rapid screening of PFAS or in combination with targeted analyses (i.e., Liquid chromatography mass spectrometry LC–) to assess the fluorine mass balance in a sample. **These testing methodologies test products for their TOF content, which is considered the simplest way to assess a material's total PFAS content** as all PFAS contain organic fluorine, and there are few other sources of the compound.[15] The methodologies are outlined in Table 6.

Refer to **Section 4.3.6** for where to find approved labs in Australia.

Table 6 *Fluorine testing methodologies*[16]

METHODOLOGY	DESCRIPTION	PROS	CONS
Particle induced gamma ray emission - PIGE	This technology uses an ion beam to penetrate the first 100 to 200 micrometres of the fibre-based material and measures the reflected energy in the wavelengths associated with fluorine nucleus in the atom.[17]	Non-destructive. Good accuracy and precision. Detection limit 60ppm. In an Australian context, it is practical for batch testing, cost effective and has a quick turnaround (2-3 weeks after test conducted) at the Australian Nuclear Science and Technology Organisation (ANSTO).	Given it can only penetrate the first 100 to 200 micrometres, only the surface fluorine content is measured in thick samples.
Combustion ion chromatography - CIC	This technology involves combustion under oxygen or argon atmosphere; all gases are collected in water, with fluoride ions separated on an ion exchange column and measured by conductivity detection.	Is highly sensitive and can display the lowest detection levels. Most common method, first used for fluorine mass balance experiments in 2007.	Destructive. Slower screening process compared to PIGE and INAA as the samples are chemically treated.
Instrumental neutron activation analysis - INAA	This technology involves combustion with a known amount of buffer solution in a Schoniger Tube. The solution is analysed by a fluoride-specific electrode calibrated with external fluoride standards.	Quick screening applications.	Traditionally used in biological and environmental matrices.

4.3.5. Preparation of samples

Proper testing preparation is essential to prevent contamination, and ideally would be done in labs. Sample preparation is not technically difficult but does require cleanliness and attention to detail. Avoiding contamination by PFAS in dust, on clothing, and in the air is important. With those constraints it is simply a matter of cutting up a representative sample of the packaging, in duplicate or triplicate as required. The cut-up pieces may need to be a certain size or weight, depending on the analysis method.[18]

ANSTO offers to prepare samples (see **Case Study**), and if businesses wish to use other labs (following the lab requirements outlined in **Section 4.3.6**), care should be taken to ensure the samples are prepared correctly.

The number of samples required per item being tested will be dependent on sampling, the nature of the sample and the methodology.

4.3.6. Lab requirements

This section sets out the lab requirements needed for reliable fluorine testing. Testing can be done both in Australia and internationally to support testing up and down the supply chain and avoid the need for double testing. However, it is important to ensure that testing is done in accredited labs to ensure reliability and transparency. Labs must fit at least one of the following criteria:

Certified by the National Association of Technical Authorities (NATA) if the lab is based in Australia.

- NATA is Australia's peak accreditation organisation and provides assessment, accreditation and training services to laboratories and technical facilities across Australia.
- NATA offers a search function that can enable businesses to find a lab offering the above testing methodologies.

Or, accredited to an ISO Standard if the lab is based globally. At a minimum this includes ISO/IEC 17025.

- Accreditation to ISO/IEC 17025 plays an important role in supporting the validity and reliability of results from testing and calibration laboratories across many industry sectors.

Case Study:

ANSTO Testing 2022

At the time of publication of this document, the Australian Nuclear Science and Technology Organisation (ANSTO) offers two options for fluorine testing for businesses.

1. Organisations send packaging item/raw material to ANSTO, who prepare the sample and test. ANSTO would work with the organisations directly. $297 per sample ex. GST including all sample preparation.
2. Organisations prepare their own 2.5cm sample pieces and send them to ANSTO for testing. Care should be taken in ensuring proper test preparation as outlined in **Section 4.3.5**. $257 per sample ex. GST.

ANSTO require a batch of 15 samples as a minimum to run the machine per day. ANSTO do not mind how the businesses organise batches. Coordination between businesses who have less than 15 samples to test is needed to guarantee the 15 samples per day.

Another option for businesses who cannot meet the 15 samples a day minimum is available. ANSTO can coordinate fluorine testing with monthly pollution monitoring undertaken with the same machine. This testing would need to run to ANSTO's schedule.

ANSTO have indicated a 2-to-3-week turnaround is viable for the right number of batches. They have been streamlining the process and indicate they are prepared for a surge in demand.

If you wish to engage ANSTO to test your packaging for PFAS, please contact ANSTO via their dedicated **Total organic fluorine Analysis | ANSTO** website.

4.4. Monitoring and reporting

4.4.1. Reporting requirements

To track industry's progress in achieving the phase out of intentionally added PFAS in fibre-based food contact packaging by 31 December 2023, with provision for a stock run-out period within a reasonable timeframe (approximately 6-8 months), a reporting mechanism will be set up. Reporting will be collated by 28 February 2023 and 31 December 2024, to allow for monitoring of TOF in businesses' fibre-based food contact packaging before and after the end of the phase out.

All relevant organisations should submit a report to APCO (template available in **Supporting Documents**). The information required to submit your report will vary depending on your testing situation. You can determine your testing/reporting requirements using **Decision Tree 1 – Testing and reporting.**

For brand owners conducting testing and reporting, the items to be tested and reported on will be similar to APCO Annual Reporting, where brand owners consider own brand and imported product packaging (whether own brand or other brand), and branded suppliers are responsible for their branded products and imported products. Ideally all brand owners will be in contact with their packaging supplier, given the packaging supplier ideally would be testing to cover all brand owners they sell to.

Organisations will provide proof of testing in the reporting mechanism via three methods as detailed in Table 7.

***Table 7** PFAS reporting proof points*

METHOD	SITUATION	WHERE TO FIND
1. Submit testing results via the reporting mechanism.	Packaging manufacturer/supplier/importer testing. Brand owner conducting own testing. Brand owner with test results from their domestic or international packaging manufacturer/supplier/importer.	**Supporting Documents** – PFAS Reporting Template
2. Submit a Supplier/ Manufacturer Declaration from your relevant suppliers via the reporting mechanism.	Brand owner indicating their packaging manufacturer/supplier/importer is testing. Packaging importer indicating their packaging manufacturer/supplier is testing. Packaging manufacturer/supplier indicating their raw material supplier is testing.	**Supporting Documents** – PFAS Supplier Declaration
3. If applicable, submit an ABA Certificate of Conformance (CoC) via the reporting mechanism, or test results for fluorine levels conducted during the application for an ABA Certificate of Conformance.	Packaging manufacturer/supplier/importer or brand owner that has a valid Certificate of Conformance from the ABA. Packaging manufacturer/supplier/importer or brand owner that has applied for a Certificate of Conformance from the ABA and underwent TF/TOF testing.	See **Section 4.3.3** for further information. **Supporting Documents** - PFAS Compostable Certificate of Conformance Declaration 2022 (for CoC) **Supporting Documents** – PFAS Reporting Template (for test results)

The Supplier Declaration has been created to support brand owners and packaging manufacturers/suppliers/importers requiring information from their packaging/raw material suppliers who have already tested for PFAS. If the suppliers also have proof of testing results, this should also be submitted alongside the Supplier Declaration.

4.4.2. How to report?

Reports will be due 28 February 2023

New round of reporting December 2024

Test on ongoing basis

1

A reporting mechanism will be established to collect information from APCO Members on their current use of packaging containing PFAS. **Reports will be due 28 February 2023**. This data will be used to estimate the percentage of packaging containing PFAS and to monitor progress over time.

2

Another round of testing and reporting will be undertaken in December 2024 to measure the presence of PFAS in priority packaging materials and formats. These results will be compared to the outcome of research undertaken in 2021.[19] The December 2024 round of reporting will cover new products/lines and/or changes in suppliers or formulas in existing lines to avoid the need to re-test.

3

While the reporting rounds are set for February 2023 and December 2024, organisations can test on an ongoing basis or incorporate testing into quality control and sourcing processes as ongoing best practice and use this action plan's Reporting Template (**Supporting Documents**) for internal reporting/monitoring purposes.

A draft Reporting Template is included in **Supporting Documents** and will support with information gathering, noting that the development of the reporting mechanism will be finalised in late 2022.

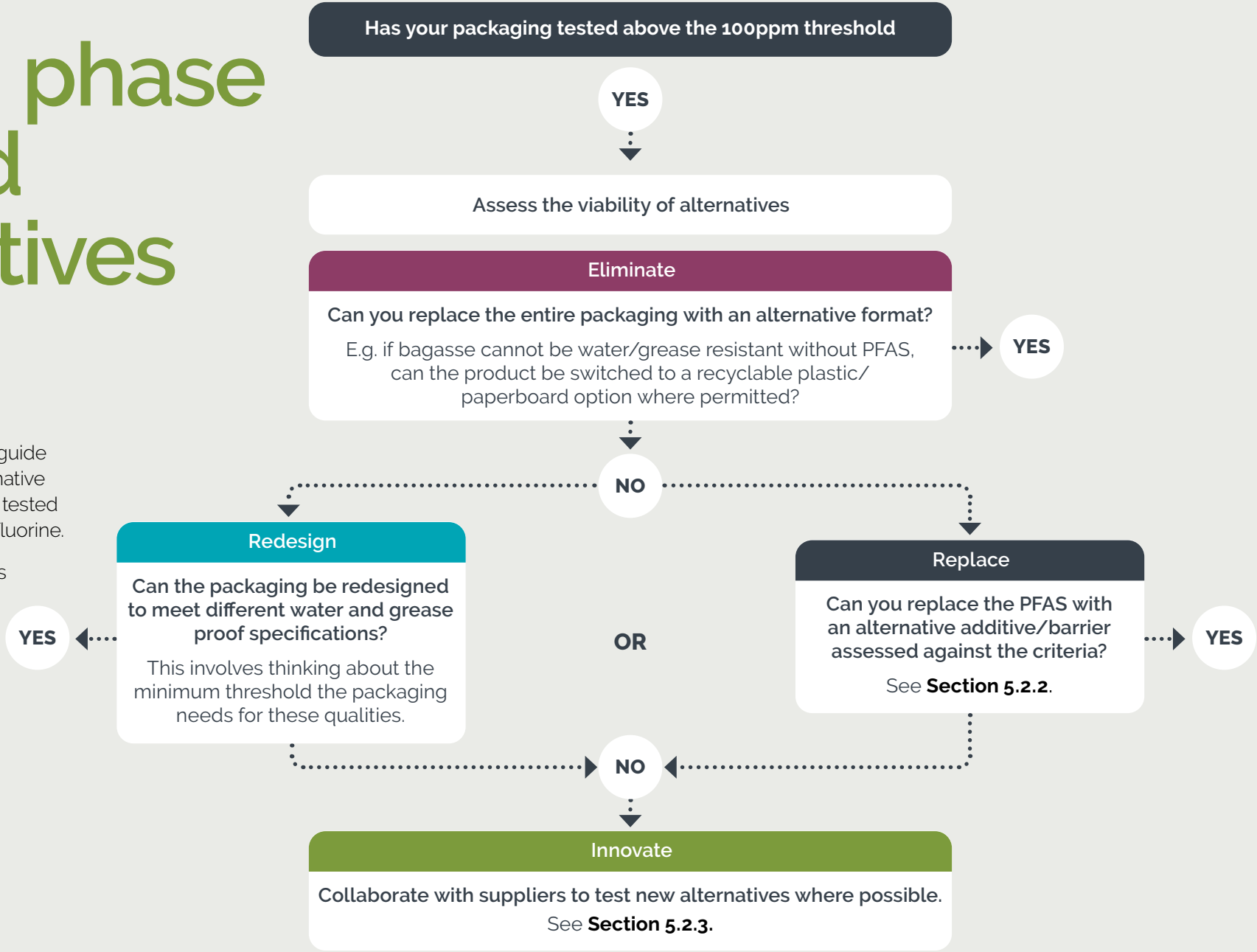
Progress towards the phase out of PFAS in packaging will be collated by APCO and reported to the Australian DCCEEW.

5. How: phase out and alternatives

5.1. Decision Tree 2 – Alternatives

Use the Decision Tree (right) to guide your business in selecting alternative pathways if your packaging has tested over the 100ppm threshold for fluorine.

Unlike Decision Tree 1 within this document, this Decision Tree is not interactive.



5.2. Alternatives

5.2.1. Technical and commercial challenges

One of the main challenges in adopting non-fluorinated alternatives appears to be the additional cost.[20] Packaging suppliers have also suggested that while there are alternatives to PFAS in bagasse packaging, these do not deliver the same level of water/grease repellence functionality.[21]

A detailed review of alternatives for the Organisation for Economic Cooperation and Development (OECD) concluded that some non-PFAS alternatives can meet grease and water barrier performance required across a range of food contact packaging applications.[22] This is supported by the Australian research, which found that, with the exception of bagasse packaging, all categories tested had at least some examples with low or non-detectable PFAS.[23] Testing conducted by Consumer Reports in the US has found that, while a number of products contained high (over 100ppm) levels of fluorine, there were also low levels in similar format packaging.[24] This indicates that there are alternatives to PFAS available in fibre-based food contact packaging.

5.2.2. Criteria to assess alternatives

PFAS and their alternatives are primarily used as a barrier or repellent against grease, stains and water. Alternatives can be divided into two categories:

1. **A chemical alternative** – a 'drop-in substitute' that performs the same chemical function.

or

2. **A physical barrier approach** – a non-chemical alternative that confers repellence.[25]

A chemical barrier is achieved by either adding chemicals to the pulp during paper production (internal sizing) or as a surface treatment. Alternatives can be used as either internal or surface sizing agents.[26]

A physical barrier can be achieved by laminating an extra layer of plastic or aluminium onto the material, but this results in a material that is difficult to recycle. Other alternatives include natural greaseproof paper and vegetable parchment, both of which have a dense cellulose structure that provides grease resistance. This is achieved through intensive refining of wood pulp.

A key takeaway to consider when deciding on alternatives to PFAS is to ensure the problem is solved, not shifted. The likelihood of regrettable substitution could be high if the health and environmental hazards of these alternatives are not understood and communicated. Criteria for assessing alternatives are detailed in Table 8.

Table 8 *Criteria for assessing alternatives*

CRITERIA	DESCRIPTION
Is the alternative functional?	Does it meet the same performance requirements as the original? Does it need to meet the same requirements as the original packaging? Can the water and grease-repellent qualities be reduced and still meet the packaging requirements? Can external factors be shifted to suit the alternative? For example, could the shelf life be reduced from 12 months to 9 months?
Does the alternative meet the necessary human health and safety requirements?	Is it safe for use in food contact packaging? Is it suitable for food contact in the end markets in which it is sold, taking into consideration global product lines?
Is the cost for the alternative comparable?	If costs increase, will this be temporary as supply/demand increases?
Is the alternative available?	Can the shift to the alternative be made in time for the phase out? Is the alternative able to meet ongoing demand year on year?
Does the alternative service the product appropriately?	Does the alternative meet the necessary standards to provide proper protection against oxygen, moisture, and microbes and prevent food degradation?
Is the alternative processable with existing equipment?	Applicable to packaging manufacturers. Is there an opportunity for innovation?
Is there a chance to maintain/ increase recycled content in the alternative?	Is there an opportunity to switch to a recycled content fibre supplier that has tested below the fluorine threshold?

***Table 8** Criteria for assessing alternatives – Continued*

CRITERIA	DESCRIPTION
Is the alternative sustainably sourced?	Is the alternative FSC certified?
Is the alternative a problematic material?	Refer to APCO's **Action Plan for Problematic and Unnecessary Single-Use Plastic Packaging**. You do not want to use any materials listed for phase out.
Is the alternative currently included in any state and territory single-use plastic bans?	See **here** for an overview of the packaging formats included in the state and territory single-use plastic bans. You do not want to use any banned formats.
Is the recoverability of the packaging impacted?	Is the alternative recyclable? Is the alternative certified compostable? Is the alternative's recoverability higher or lower in the **waste hierarchy** than the existing packaging?
How does the alternative compare in a Life Cycle Assessment (LCA)?	If relevant.
Does the packaging meet the Sustainable Packaging Principles of the Sustainable Packaging Guidelines (SPGs)?	See below.

When choosing alternatives, businesses should ensure that new packaging formats have been assessed against the **Sustainable Packaging Guidelines** (SPGs). The SPGs are designed to assist the design and manufacture of packaging that meets the sometimes-conflicting demands of the market, consumer protection and the environment.

The SPGs document establishes the 10 Sustainable Packaging Principles, which can be used to guide the review of existing and new packaging to identify opportunities for improvement:

5.2.3. Known alternatives

A research study for the US State of Washington evaluated the hazard, exposure, performance, cost and availability of PFAS alternatives for 10 food contact packaging applications. It determined that there are readily available alternatives at a comparable cost that meet performance requirements for four applications (see Table 9). Further alternatives for bags and sleeves, bowls, trays, hot chip cartons, clamshells and interlocking folded containers continue to be developed.

Several research papers are available to support businesses in determining alternatives to PFAS. APCO recommends that businesses also consider the viability of each alternative and the impact it will have on performance, human health and the environment.

- Planet Ark published a **report** into the health and environmental risks of PFAS, with a focus on food contact packaging, which outlines several non-fluorinated alternatives to PFAS.

- The Nordic Council of Ministers published a **report** which provides options for evaluating the risk of fluorochemicals and presents pros and cons of risk management for PFAS in the absence of a full risk assessment.

- A **study** by the OECD identified a range of physical and chemical alternatives to PFAS. The study considered commercial availability and current uses but not their environmental and health impacts.[28] More research is required to fully understand the manufacturing processes and additives required to produce these alternatives.

- Table 9 outlines some alternatives that have been **identified** by the State of Washington. An update (Per- and Polyfluoroalkyl Substances in Food Packaging Second Alternatives Assessment) to this initial report from the Washington State Department Of Ecology was published in May 2022, and is available **here.**

Table 9 *Alternatives identified in research by the State of Washington*[29]

PRODUCT CATEGORY	US STATE OF WASHINGTON STUDY
Food trays/boats	Clay-coated and reusable options
Wrappers and liners (cold food)	Wax-coated options
Plates	Clay-coated and reusable options
Pizza boxes	Uncoated options

5.3. Collaboration

Collaboration between brand owners and packaging manufacturers/suppliers/importers offers a great opportunity to ensure the phase out of PFAS in fibre-based food contact packaging is delivered by 31 December 2023. As the phase out is voluntary and industry-led, this requires a high level of collaboration to ensure that all relevant stakeholders are engaged and motivated.

Examples of collaboration include:

- **Batch testing of packaging:** smaller packaging suppliers can collaborate to arrange batch testing if they do not meet the required threshold for labs.

- **Shared testing costs:** while testing should be undertaken by packaging manufacturers/ importers/suppliers, these companies may see opportunities to reach out to their larger brand owner customers and share the cost of testing. This can assist brand owners in guaranteeing that the packaging that they are purchasing is being tested as a priority/within a shorter timeframe, while sharing the cost, benefiting both supplier and customer.

- **Development and testing of alternatives:** suppliers and customers may work together to support the testing of alternatives.

APCO have created a draft supplier letter to support brand owners in reaching out to their suppliers to work collaboratively towards the phase out. This is available in **Supporting Documents**.

6. Additional information

Glossary

Bagasse

Pulp made from sugar-cane stalks from which most of the sugar juice and pith cells have been removed.[30]

Bagasse packaging

Packaging made from bagasse (see Bagasse definition).

Certified compostable

Means that claims of compliance with Australian Standard 4736-2006, compostable and biodegradable plastics – "Biodegradable plastics suitable for composting and other microbial treatment" and Australian Standard AS 5810-2010 Home Composting – "Biodegradable plastics suitable for home composting" have been verified.

Compostable packaging

A packaging or packaging component (1) is compostable if it is certified to AS4736 or a similar standard for commercial composting or AS5810 for home composting, and if its successful post-consumer (2) collection, (sorting), and composting is proven to work in practice and at scale (3).

Supporting notes:

1. ISO 18601:2013: A packaging component is a part of packaging that can be separated by hand or by using simple physical means (e.g., a cap, a lid and (non in-mould) labels).
2. ISO 14021 clarifies post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.
3. 'At scale' implies that there are significant and relevant geographical areas, as measured by population size, where the packaging is actually composted in practice.

Food contact packaging

Any container or wrapper in or by which food for sale is wholly or partly encased, covered, enclosed, contained or packaged, including primary and secondary packaging. The definition of "package" excludes bulk cargo containers, pallet overwrap, crates and packages that do not obscure food labels, transportation vehicles, containers and wrappers for food served in prisons, hospitals, and medical institutions, and food containers that serve a medical purpose that are used in institutional settings.[31]

Food organics

Food waste from households or industry, including food processing waste, out-of-date or off-specification food, meat, fruit and vegetable scraps. Excludes liquid wastes.

Garden organics

Organics derived from garden sources e.g. grass clippings, tree prunings. Also known as green organics.

Fibre-based packaging

Packaging primarily made from plant-based fibre, including wood, bamboo and bagasse.[32] Throughout the action plan the general term 'fibre-based packaging' is used to cover packaging material types such as boxboard, carton board, corrugated board, paper bags, and other natural fibre-based packaging.

Fluorine

Fluorine is a univalent poisonous gaseous halogen, it is pale yellow-green *in its gaseous form* and it is the most chemically reactive and electronegative of all the elements. Fluorine readily forms compounds with most other elements, even with the noble gases krypton, xenon and radon.

Landfill

Discharge or deposit of solid wastes onto land that cannot be practically removed from the waste stream.

Long chain PFAS

PFAS with a long-fluorinated carbon chain including:

- Perfluorocarboxylic acids (PFCAs) with carbon chain lengths C8 and higher, including perfluorooctanoic acid (PFOA).
- Perfluoroalkane sulfonic acids (PFSAs) with carbon chain lengths C6 and higher, including perfluorohexane sulfonic acid (PFHxS) and perfluorooctane sulfonate (PFOS).

Precursors of these substances that may be produced or present in products.[33]

Life Cycle Assessment

Life Cycle Assessment (LCA) is an internationally recognised, methodical approach to assess the environmental impacts of a product or packaging format. Following internationally agreed protocols in line with ISO standards, it can be conducted by an external independent expert or internal staff member using LCA analytical software which produces useful graphs and data for reports.

Packaging

Material used for the containment, protection, marketing or handling of product. Includes primary, secondary and tertiary/freight packaging in both consumer and industrial packaging applications.

Packaging level

Identifies the hierarchical level of the packaging assembly, i.e. primary, secondary or tertiary.

Primary packaging, also known as consumer or retail packaging, refers to the layer/s that contain and protect individual product units up to the point of sale (e.g. bag, bottle, jar, box etc.) and that are removed for use. Primary packaging also includes any packaging given to consumers at the point of retail sales (e.g. retail bag, tissue paper etc.) as well as packaging delivered to consumers with online sales (e.g. bag, cushioning, box etc.).

Secondary packaging is additional to the primary packaging and is used to protect and collate individual product units during storage, transport and distribution. This may include shelf-ready packaging (SRP), also known as retail-ready packaging (RRP) or counter- top display units (CDUs), containing multiple product units and used for retail display.

Tertiary packaging is used in the protection and shipping of a product. This type of packaging is also known as distribution packaging, transport packaging and business-to-business (B2B packaging). It consists of packaging and components such as cardboard cartons, pallets, slip sheets, stretch wrap, strapping and any labels.

Paper and paperboard

Paperboard is a group term related to papers (including multi-ply papers) that have been manufactured specifically for packaging purposes. Paper is both an input into paperboard manufacturing and can be a packaging product in its own right.

PFAS

Per- and polyfluoroalkyl substances, including both long and short chain.

PFCAs

Perfluorocarboxylic acids.

PFHxS

Perfluorohexane sulfonic acid.

PFOA

Perfluorooctanoic acid.

PFOS

Perfluorooctane sulfonate.

PFSAs

Perfluoroalkane sulfonic acids.

Short chain PFAS

PFAS with shorter fluorinated carbon chains including:

- PFCAs with carbon chain lengths of < C8.
- PFSAs with carbon chain lengths < C6.[34]

Problematic

Can be considered a 'contaminant' in the recycling facility because it is either 1) not one of the requested materials 2) causes problems e.g. getting entangled in machinery 3) reduces the quality of the recyclate or some other reason.

Recyclable packaging

A packaging (1) or packaging component (2,3) is recyclable if its successful post-consumer (4) collection, sorting, and recycling is proven to work in practice and at scale.

Also see the related 'Compostable packaging' and 'Reusable packaging' definitions.

Supporting notes:

1. A package can be considered recyclable if its main packaging components, are recyclable according to the above definition, and if the remaining minor components are compatible with the recycling process and do not hinder the recyclability of the main components. The PREP design tool provides information on recyclability of packaging through kerbside collection services.
2. A packaging component is a part of packaging that can be separated by hand or by using simple physical means (ISO 18601), e.g. a cap, a lid and (non in-mould) labels.
3. A packaging component can only be considered recyclable if that entire component, excluding minor incidental constituents (5), is recyclable according to the definition above. If just one material of a multi-material component is recyclable, one can only claim recyclability of that material, not of the component as a whole (in line with ISO 14021).
4. ISO 14021 defines post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. It excludes pre-consumer material (e.g. production scrap).
5. ISO 18601:2013: A packaging constituent is a part from which packaging or its components are made and which cannot be separated by hand or by using simple physical means (e.g. a layer of a multi-layered pack or an in-mould label).

Recycled content

Is the proportion, by mass, of pre-consumer and post-consumer recycled material in packaging (AS/ISO 14021). 'Pre-consumer' material is material diverted from the waste stream during manufacturing (excluding rework). 'Post-consumer' material is material waste generated by households or by commercial, industrial and institutional facilities. The amount of renewable or recycled material is expressed as a percentage of the quantity of packaging material put onto the market.

Single-use packaging

Single-use packaging is defined as a packaging system or packaging component which has been principally designed to accomplish a single trip, even if some form of reuse is possible. Single-use packaging does not meet the definitional requirements of ISO 18603:2013 (Packaging and the environment – Reuse) as reusable packaging.

Waste

Any discarded, rejected, unwanted, surplus, or abandoned matter, including where intended for recycling, reprocessing, recovery, purification or sale. Anything that is no longer valued by its owner for use or sale, and which is, or will be, discarded. In this document, the term 'solid waste' refers to non-hazardous, solid waste materials ranging from municipal garbage to industrial waste.

Supporting documents

PFAS Reporting Template 2022

PFAS Supplier Declaration 2022

PFAS Compostable Certificate of Conformance Declaration 2022

Supplier letter template

Quick Guide - PFAS Action Plan

Click on the boxes above to read.

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Further information

To contact APCO please visit our website
apco.org.au

AUSTRALIAN PACKAGING COVENANT ORGANISATION