The Journey to Healthcare Packaging Sustainability Based on PPWR

// What you need to know and expert Q&A

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BIG Ideas
hosted by Amcor

Your presenter today

Joseph Lee

- Amcor Head of GHTC China
- Amcor Greater China Sr. Scientist
- Amcor Healthcare China Technical Director

What we'll discuss

- Packaging & Packaging Waste Regulation (PPWR) overview
- PPWR timeline
- What does it mean for brands?
- How can you get ready and start to transition your packaging?
- Answering your questions: Q&A

Amcor at a glance

At home in homes **around the world**

~ 41,000 colleagues

~ 218 locations across 40+ countries

What we make

- Flexible packaging (plastic, paper, aluminum)
- Rigid packaging
- Folding cartons
- Wine and spirit capsules (closures)

Trusted by customers large and small

We produce packaging for more than **4,000 global, regional and national brands**

PPWR process timeline

2022

Proposal issued to the public, shared with EU co-legislators

2023

EU legislative process

2024

Preliminary agreement reached; PPWR expected to become law by end of the year

A new world of packaging in Europe

DISCLAIMER: The regulation is in a preliminary EU political agreement. This presentation is based on our current understanding of the soon-to-be adopted Regulation.

A quick review // **What is the PPWR?**

- **The PPWR is proposed EU legislation that**
  - Applies to all packaging (not just plastics)
  - Aims to minimize packaging waste
  - Establishes design-for-recycling as a principle
  - Requires eco-modulated EPR based on recyclability
  - Establishes mandatory PCR targets for plastics

- Once entered into force, **it will apply throughout the European Union for all packaged goods**, including imports

- Might create **model for other regions**

DISCLAIMER: The regulation is in a preliminary EU political agreement. This presentation is based on our current understanding of the soon-to-be adopted Regulation.

Main PPWR requirements for packaging

- All packaging must be recyclable by design and recycled at scale
- EPR will be eco-modulated, meaning lower fees based on recyclability
- New packaging minimization requirements
- Plastic packaging must use a minimum percentage of PCR content
- Single use plastic packaging bans and PFAS restrictions
- Sets a new approach to compostability
- Sets reuse targets

You asked

What are the PPWR recyclability requirements?

Recyclability requirements for all packaging materials

Must be designed to be recyclable (i.e. recycle-ready)

Must have an adequate recyclability performance (grades A–C allowed)
Packaging that is technically non-recyclable will be banned.

2030

Packaging must be recycled at scale, with a 55% recycling rate by 2035 for all packaging categories*, including flexibles

2035

Only recyclability grades A–B will be allowed on the market.

2038

Exempted from recyclability until EU Commission reassessment by 2035:

- **Pharma:** Primary packaging for pharmaceuticals (including veterinary).
- **Medical:** Contact-sensitive packaging for medical devices and in-vitro diagnostics
- **Infant & Baby:** Contact-sensitive packaging for baby formula, processed cereal-based baby food, special medical purposes
- **Certain Materials:** Packaging made from wood, cork, textile, rubber, ceramic or porcelain

*except wood packaging, which is required to reach a 30% recycled at scale rate

Packaging recyclability grading*

Deadlines	2030 Only Design for Recycling	2035 Design for Recycling + Recycled at Scale		2038 Design for Recycling + Recycled at Scale	
Recyclability grading and factors	A (≥95%)	A	A R@S*	A	A R@S*
	B (≥80%)	B	B R@S	B	B R@S
	C (≥70%)	C	C R@S	C	C R@S
Banned from the EU market	Technically non-recyclable	Technically non-recyclable, recycling rate < 55%		Technically non-recyclable, recycling rate < 55%	

*Exact requirements and methodology for determining packaging recyclability grades will be established in additional EU legislation post-PPWR

Recyclability requirements for Healthcare packaging

Types of HC Packaging & Scope		Exempt from Design for Recycling	Exempt from Recyclable at Scale	Exempt from Recycled Plastic Content
Pharma & veterinary	Primary packaging	Y	Y	Y
Pharma & veterinary	Secondary packaging	N	N	Y
Medical	Contact sensitive plastic packaging of medical devices	Y	Y	Y
Timeline for end of exemption		**31 December 2034**		**Indefinite**

- At the end of the exemption, all Healthcare packaging will have to show it complies with the PPWR – although it seems like there is a lot of time, due to development timelines, there is really no time to waste!
- EU may decide to revoke derogations from recycled content obligations for healthcare packaging.

You asked

Which packaging meets the requirements for “designed for recycling?”

Design for recycling guidelines: Flexibles TODAY

Recycling stream	Preferable	Minimum criteria	Comments
Aluminium stream	**≥80% aluminium content**	**≥50% aluminium content**	
Paper stream	**Outer layer is paper** **≥80% fiber content**	**Outer layer is paper** **≥50% fiber content**	• Includes further criteria • Based on 4evergreen design guidelines (2023)
Polyolefins (PE, PP, PO) stream	**≥90% mono-PP** or **mono-PE** Density **<1 g/cm³** **No PVC, PVDC, fibres, aluminium foil, PET** **Other polymers ≤5% each** (e.g. EVOH)	**≥80% polyolefins** Density **<1 g/cm³** **No PVC, PVDC, fibres, aluminium foil, PET** **Other polymers ≤10% each** (e.g. EVOH)	• Based on the CEFLEX Design for Circularity Guidelines (2022)* • Includes further criteria • Exceptions can be granted based on certified recycling tests (e.g. via PRE/RecyClass, cyclos-HTP)

*Excerpt of key criteria from the CEFLEX Design for Circularity Guidelines, for both mechanical and advanced/chemical recycling

Design for recycling guidelines: Flexibles PREDICTED

Recycling stream	Future-proof and design for "preferable" now: Preferable (grades A-B)**	Minimum criteria (grades C-D)**	Comments
Aluminium stream	**≥80% aluminium content**	Will likely be lowest grade and phased out under PPWR before 2038	
Paper stream	**Outer layer is paper** **≥80% fiber content**		• Includes further criteria • Based on 4evergreen design guidelines (2023)
Polyolefins (PE, PP, PO) stream	**≥90% mono-PP** or **mono-PE** Density **<1 g/cm³** **No PVC, PVDC, fibres, aluminium foil, PET** **Other polymers ≤5% each** (e.g. EVOH)		• Based on the CEFLEX Design for Circularity Guidelines (2022)* • Includes further criteria • Exceptions can be granted based on certified recycling tests (e.g. via PRE/RecyClass, cyclos-HTP)

** Exact requirements for PPWR recycling grades still to be clarified, however, design for "Preferable" today to future-proof.
* Excerpt of key criteria from the CEFLEX Design for Circularity Guidelines, for both mechanical and advanced/chemical recycling

Integrated Components: **Must follow design for recycling guidelines for main packaging body**

Typical recycling streams (main packaging body)	Examples of integrated components	Guidelines*
PP & HDPE rigids streams	**Lidding*, banderole*, labels*** for yoghurt and dessert pots, ambient ready meal trays and pots, etc.	**Ensure compatibility of the integrated component with the respective guidelines for the main rigid packaging, per recycling stream**
PET rigids streams	**Lidding*, banderole*, labels*** for PET trays for meat, cheese, freshly prepared fruits, etc.	
Other rigids Streams (e.g. paper, PS, metal, glass)	**Lidding*** for food service trays and boxes, yoghurt and dessert pots, metal cans; **liners*** of paper trays, **closures*** for bottles, etc.	

*Unless component is separated during consumer disposal, transportation and sorting of waste

You asked

What fees should we expect in terms of EPR eco-modulation?

Extended Producer Responsibility (EPR) fees

Eco-modulated EPR

- Packaging that is **designed to be recycled <u>will</u> have lower EPR fees**
- Packaging that **contains PCR content <u>could</u> have lower EPR fees**

- **EPR fees <u>will</u> correspond to recyclability grades** (best grade = lowest EPR fee)
- Packaging that **contains PCR content <u>could</u> have lower EPR fees.**

2025

2030

As of **2030,** EPR fees will be eco-modulated based on **recyclability grades**, and possibly on the basis of PCR content. However, the PPWR does not establish the actual fees – fees are and will be set per EU country. Brands will have to apply national EPR labels on packaging, if required.

You asked

Will the PPWR mandate a Plastic Tax?

Plastic Tax is NOT in scope for PPWR

Plastic Tax is different than Extended Producer Responsibility (EPR). It is a tax, and the funds generally do not go toward funding recycling systems.

- EU countries can, at their discretion, implement a plastic tax. Plastic Tax is **NOT** mandated in the PPWR.
- Currently the UK and Spain have a Plastic Tax in effect, with Germany expected to follow in 2025 and Italy in July 2026.
- Several other European countries are discussing a Plastic Tax.

- Plastic Tax rules
- Concrete design rules
- Chemical recycling rules
- Clear national legislation rules
- Specific EPR fees
- Bio-based plastic targets
- GHG emissions reductions for packaging

You asked

What are the requirements for PCR content in plastic packaging?

Mandatory minimum % of PCR content in any plastic part of packaging*

Per packaging type and format, calculated as an average per manufacturing plant and year

	2030	2040
Contact-sensitive packaging made from plastic materials (excluding PET bottles)**	**≥ 10%**	**≥ 25%**
Non-contact sensitive plastic packaging:	**≥ 35%**	**≥ 65%**
Single-use plastic beverage bottles	≥ 30%	≥ 65%
Contact-sensitive packaging made from PET (excluding single-use PET bottles)	≥ 30%	≥ 50%

Exemptions from PCR requirements

- Any plastic part that accounts for less than 5% of the packaging unit by weight
- Compostable plastic packaging
- Pharma packaging
- Plastic packaging for medical devices, baby food, infant food
- Packaging used for the transport of dangerous goods

*PPWR does not clarify what is a plastic part of packaging – additional EU interpretation for businesses will be needed
**Contact-sensitive = packaging for food, animal feed, food supplements, pharma + veterinary products, medical device & in-vitro diagnostics packaging, cosmetics, dangerous goods, absorbent hygiene products and reusable menstrual cups

Mandatory minimum % of PCR content in any plastic part of packaging*

Post-consumer recycled (PCR) materials should come from **waste collected and recycled in the EU** or a “third-country” installation which has an environmental performance similar to EU standards.

Additional EU legislation will determine **sustainability criteria for plastic recycling infrastructure** and **equivalence rules** for PCR collected and recycled outside the EU.

*PPWR does not clarify what is a plastic part of packaging – additional EU interpretation for businesses will be needed

You asked

What types of packaging will be banned or restricted in the future?

Types of single-use-plastic (SUP) packaging banned as of 2030

SUP secondary packaging that encourages consumers to purchase multiple items

EXAMPLES: Collation films, shrink wrap, and others

HORECA

SUP packaging filled & consumed *in situ* in HORECA

Food & drink trays, disposable plates, cups, bags, boxes

<1.5kg

SUP for unprocessed pre-packed fruits & vegetables under 1.5kg

Plastic nets, bags, trays, containers, and other similar types

SUP packaging in the hotel/accommodation sector intended for an individual booking

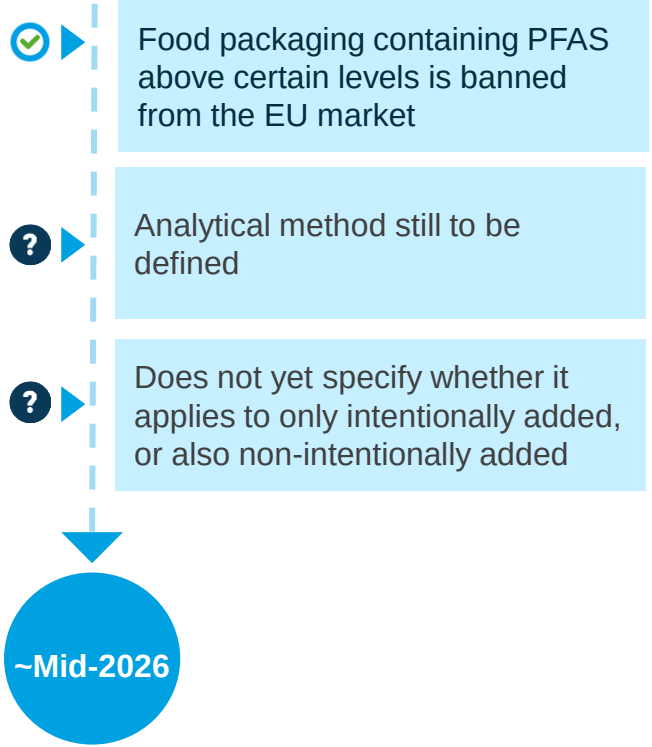
Small shampoo bottles, lotion bottles, sachets around small soap bars, and similar

HORECA

SUP packaging for condiments, creamers, sugar consumed *in situ* in HORECA

Sachets, tubs, boxes, trays for condiments, preserves, sauces, coffee creamer, sugar and seasoning

Food packaging containing certain levels of PFAS (“forever chemicals”) **cannot be placed on the EU market**

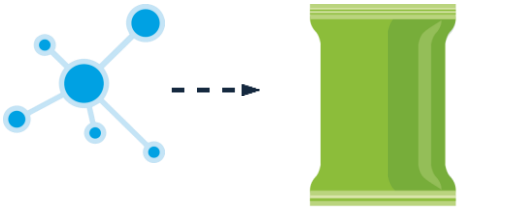


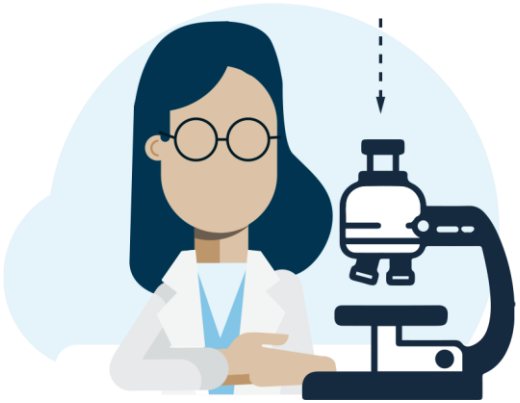
25 ppb for any PFAS as measured with targeted PFAS analysis (polymeric PFASs excluded from quantification)

250 ppb for the sum of PFASs measured as sum of targeted PFAS analysis, optionally with prior degradation of precursors (polymeric PFASs excluded from quantification)

50 ppm for PFASs (polymeric PFASs included). If total fluorine exceeds 50 mg F/kg the manufacturer, importer or downstream user shall upon request provide to the enforcement authorities a proof for the fluorine measured as content of either PFASs or non-PFASs.

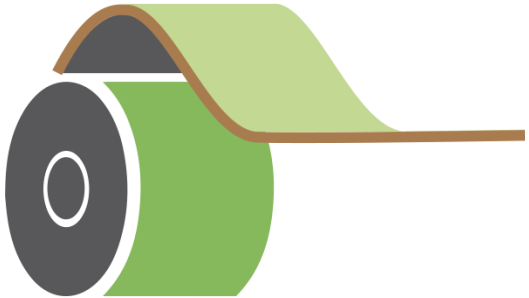
Where might PFAS be found in flexible food packaging?





Polymeric PFAS may be present as an extrusion aid used in making polyolefin films (PE, PP and PO) and as wax in some inks and coatings.

Polymeric PFAS may also be found in a few grease-resistant papers.



- Some inks and coatings
- Some grease-resistant papers
- Some Polyolefin films

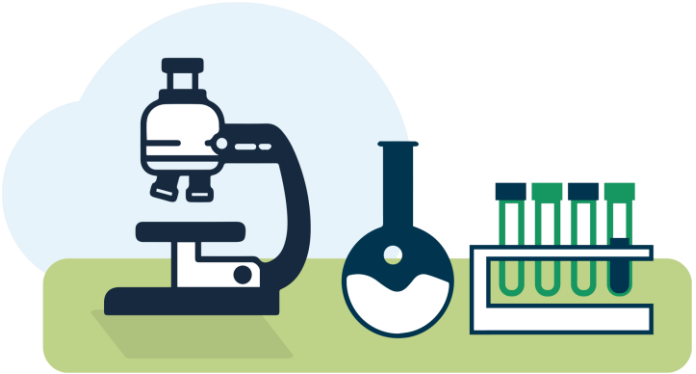
Are PFAS-free alternatives available for food packaging?

YES!

Our R&D team has developed solutions to remove PFAS from the materials used in flexible packaging.

- **Polyolefin films**
  Alternatives ready for industrialization or qualification
- **Grease-resistant paper**
  Alternatives available, ready for qualification
- **Inks and lacquers**
  Most alternatives ready for qualification, with a few still in development (with suppliers)

Our team is ready to support you on identifying and testing alternatives.



You asked

Does the PPWR change Europe’s stance on compostability?

Shift in approach to Compostability

- The PPWR prioritizes recyclability over compostability

- **Only a few types of packaging shall be industrially compostable** (and home compostable where required by Member States). These will be processed in bio-waste treatment facilities.

  - **Sticky labels attached to fruits and vegetables**

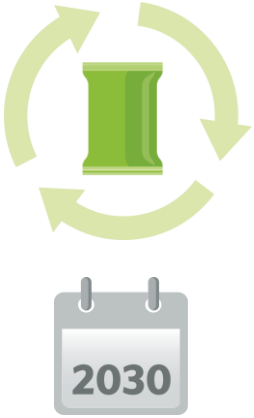
  - **Permeable tea/coffee/beverage bags and coffee capsules which are soft after use**

- Certain EU countries may still require that other packaging types are compostable in their territories until mid-2026.

You asked

What are the packaging reuse requirements?

Reuse targets* for packaging from 2030



Transport packaging reuse targets

40% reuse target in 2030 (including e-commerce); should reach 70% in 2040**

Operators who own multiple sites in the EU should use only reusable transport packaging between their sites.

Operators using transport or sales packaging to deliver products in the same EU Member State can use only reusable transport packaging.

Additional packaging reuse targets

Economic operators using secondary packaging in the form of boxes to create a stock keeping unit: at least **10%**.

Final distributors of alcoholic and non-alcoholic beverages: at least **10%.**

No reuse targets for: grape wine, aromatized wine products, similar products to wine obtained from other fruits or vegetables, highly perishable beverages (e.g. milk products)

*Within a system for reuse
**Except cardboard boxes, flexible formats in contact with food and food ingredients, packaging used for transportation of dangerous goods, and large-scale machinery

You asked

What on-pack sustainability claims can brands make that comply with PPWR?

Some on-pack labels will be mandatory, while other claims must follow rules

Mandatory labels

- Harmonised pictograms for sorting different types of packaging
- Harmonised labels for compostability ("Do Not Throw In Nature")
- National and EU Deposit Return Scheme labels
- Harmonised reuse labels

Optional labels

- Sorting labels for separate components of packaging
- Recycled content labelling
- Bio-based plastic content labelling

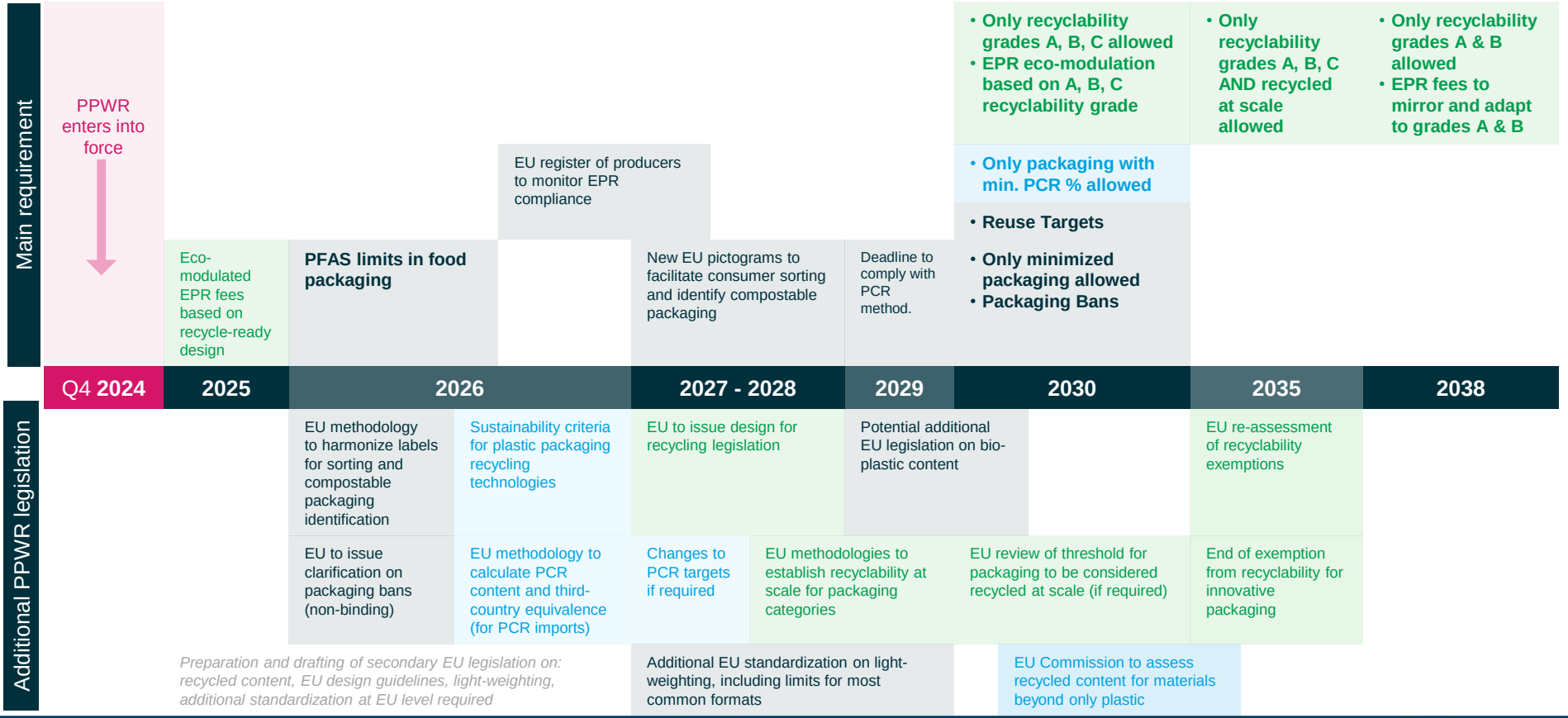
Rules on environmental claims

- Must specify if a claim relates to the entire pack or only components
- Brands can only make claims for qualities that exceed minimum PPWR requirements (e.g. 20% PCR when requirement is min. 10% PCR)

You asked

What’s the timeline for PPWR requirements and additional legislation?

Indicative next steps and secondary PPWR legislation



Recyclability Recycled Content

You asked

If the PPWR means a move to mono-material packaging, what are the options to replace multi-material packaging?

Available **recycle-ready PE and PP packaging**

Amcor HealthCare™ **AMPRIMA®**
RECYCLE-READY

Mono-PE and mono-PP material for standard medical laminates, L-M barrier pharma laminates

Amcor HealthCare™ **AMLITE®**
RECYCLE-READY

Mono-PP solution for high barrier medical laminates or pharma sachet packaging

Amcor HealthCare™ **SUREFORM™**
POLYOLEFIN

Mono-PE medical thermoforming films

Available **recycle-ready PE and PP packaging**

Amcor HealthCare™ **BAG/POUCH RECYCLE-READY**

Mono-PE + Uncoated Tyvek® bag/pouch, Mono-PE + Coated Tyvek ® header bag

Amcor HealthCare™ **TRAY RECYCLE-READY**

Mono-HDPE or Mono-PP customized thermoformed tray

Amcor HealthCare™ **AMSKY™ BLISTER SYSTEM**

Mono-PE based, vinyl-free and recycle-ready blister packaging

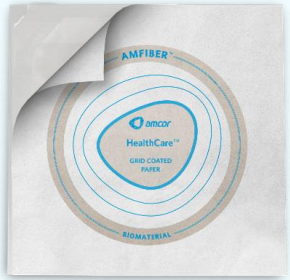
Available **recycle-ready Paper and Alu foil packaging**

Amcor HealthCare™ **AMFIBER™ PERFORMANCE PAPER**

Recycle-ready, high-barrier paper solution for medical or pharma packaging

Amcor HealthCare™ **AMFIBER™ COATED PAPER**

Medical paper coating water based heat-seal lacquer or wax sterilised by EtO



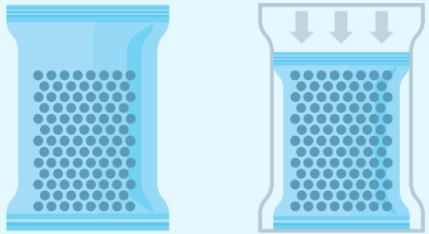
Amcor HealthCare™ **FORMPACK® RECYCLE-READY**

Vinyl-free and recycle-ready coldformed packaging for catheter or pharma blister packaging

Lightweighting in support of packaging minimization targets

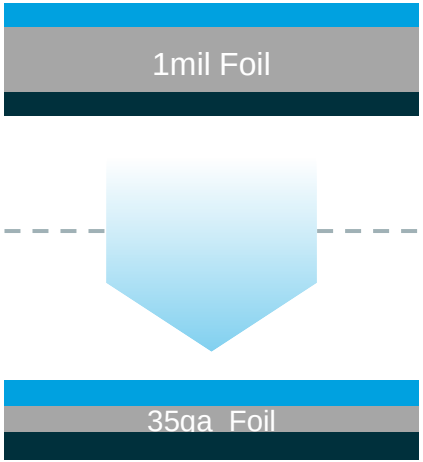
LIGHTWEIGHTING

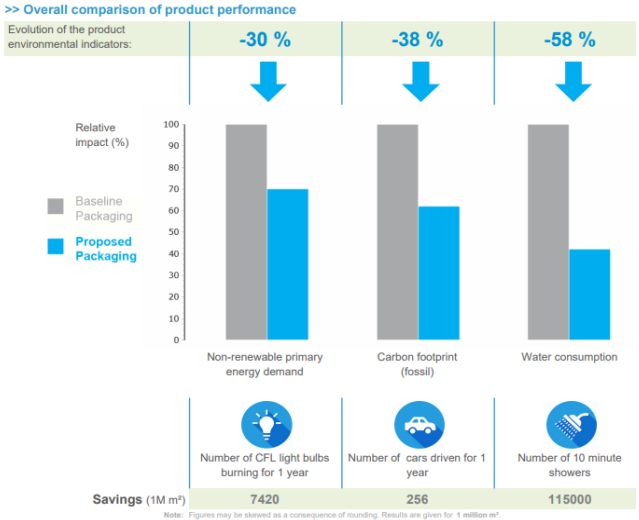
Packaging volume & weight to be minimised while maintaining functionality



Example:

Alu foil downgauging





amcor

Amcor Asia Pacific Innovation Centre (APIC)
for development and testing of circular packaging

catalyst™
Understand. Create. Deliver.

Packaging designers, material developers, testing facilities and full-scale production all in one place. **Ready to help you meet upcoming regulatory requirements.**

- Packaging **DESIGN**
- Recycle-ready **MATERIAL DEVELOPMENT**
- Analytical labs for recycle-ready **MATERIAL TESTING**
- **PILOT** lines and packing **MACHINE TRIALS**
- **ECOMMERCE** resilience testing
- **RECYCLABILITY TESTING**

You asked

In conclusion...How can I get ready for PPWR?

PPWR compliance is the new license to operate

Steps to get ready

Implement recycle-ready packaging

- → **Lower your EPR fees and total cost of ownership already from 2025**
- → **Mandatory requirement by 2030**

RECYCLE-READY

Incorporate PCR plastics
(post-consumer recycled)

- → **Ensure that you will have access to sufficient supply of PCR material**
- → **May reduce EPR fees**
- → **Mandatory requirement by 2030**

RECYCLED CONTENT

Understand and engage

- → **Engage with EPR schemes** to ensure development of collection, sorting and recycling infrastructure **to achieve recycling at scale**.
- → **Drive value chain partnerships and solutions**

Key initiative
(among others)

CEFLEX
A CIRCULAR ECONOMY FOR FLEXIBLE PACKAGING

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PPWR is around the corner

While some details are still being confirmed, **there are many things we know now.**

Don’t wait.
Start to transition your packaging.

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Questions?

Thank you