WEBINAR

The road to more sustainable medical packaging

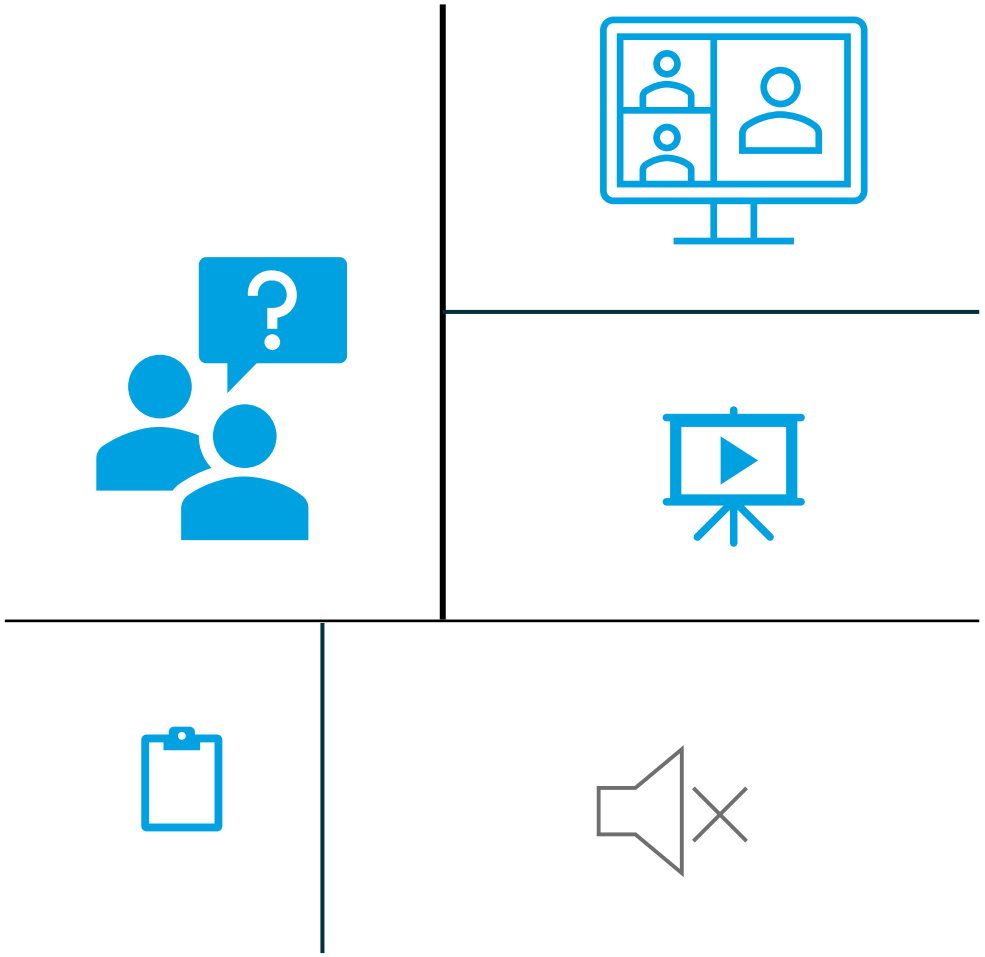
amcor

Big Ideas
hosted by Amcor

Wellspect
A REAL DIFFERENCE

HPRC
Healthcare Plastics Recycling Council

Housekeeping rules



- Webinar length: 1 hour (incl. 15 Min. Q&A)
- Audio and video of participants are disabled
- This presentation is recorded
- You will receive the deck as well as the link to the recording by email
- You can start writing your questions in the Q & A-Box (not chat)
- Tell us how we did in the survey

The context

3 key pillars to a more sustainable growth:

Limiting resource consumption

Reduction of carbon footprint

Avoiding environmental pollution

Increasing regulatory, buyer, and consumer/ patient pressure regarding environmental issues:

- Regulatory requirements
- Inclusion of environmental criteria in tenders
- Patient / user feedback on packaging waste in healthcare.

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Today's presenters

Steven Meun
Director Europe
Healthcare Plastics Recycling Council

Åsa Westling
Senior R&D Scientist
Wellspect HealthCare

Neil Hawkesford
Senior Product Manager Healthcare
Amcor Flexibles

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Steven Meun

Director Europe

Healthcare Plastics Recycling Council

The business case

The healthcare sector generates **millions of tonnes of waste worldwide** each year, and waste directly or indirectly negatively **impacts our environment, health, and well-being** in many ways.

Many European public health agencies and national governments still require **incineration** as the only safe waste management solution for hospital waste.

However, the **vast majority of waste** produced by the healthcare sector (approximately 85%), is **non-hazardous** and similar to domestic waste, so much of it can be **easily recycled.**

In conclusion, the **potential for plastics recycling in hospitals is significant** to both **environmental and human health** impacts.

Need for collaboration

Medical device manufacturers are aware of the issue and are willing to contribute to **solution development** along the entire value chain.

To create a more **sustainable supply chain** it is necessary to **collaborate** and approach it with a **value chain approach.**

What we aspire to do

What is HPRC?

HPRC is a private, **technical coalition of industry peers** across healthcare, recycling, and waste management industries **seeking to improve recyclability** of plastic products within healthcare.

Mission

Collaborate across the **value chain** to inspire and **enable** the healthcare community to **implement** viable, safe, and cost-effective **recycling solutions** for plastics products and packaging used in the delivery of healthcare.

Circular Economy Aligned

Healthcare plastics have unique potential to be part of the Circular Economy movement, where nothing is lost or wasted and all resources are utilized to their highest potential, delivering better system-wide economic and environmental outcomes.

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Åsa Westling

Senior R&D Scientist

Wellspect HealthCare

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2022-03-08 Åsa Westling, Senior R&D Scientist

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Manufacture Medical Device for

Bladder Management

Bowel Management

INNOVATIVE CONTINENCE CARE SOLUTIONS MADE FOR LIFE


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OUR USERS
Our users are people who have urinary retention and/or chronic bowel issues.

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LOFRIC – THE CHOICE YOU CAN ALWAYS TRUST

User-friendly hydrophilic catheters adapted to your body for long-term comfort and safety

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OUR STRATEGY FOR A SUSTAINABLE FUTURE

We are dedicated to providing products for an independent and dignified life, with minimal environmental impact, respecting human rights and social needs

Our journey started many years ago

- PVC-free assortment (start implement 1990, finalized all LoFric products 2009
- Life cycle assessment (published study 2008)
- Production site has green energy since 2009
- …

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OUR STRATEGY FOR A SUSTAINABLE FUTURE

THE MAIN AMBITIONS OF WELLSPECT'S SUSTAINABILITY STRATEGY FOR 2025:

GOOD HEALTH AND WELL-BEING

Empowering more people to gain independence, confidence and helping them live a full life

SAFE, COMMITTED AND INSPIRING WORKPLACE

Provide great work-places that promote well-being, belonging and a sustainable worklife and a sustainable procurement

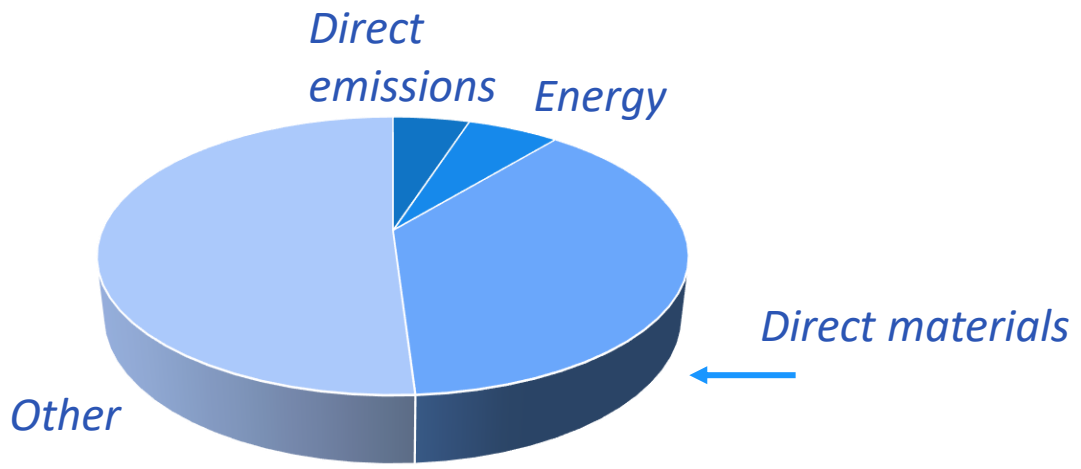
REDUCED ENVIRONMENTAL FOOTPRINT

There shall be no compromise between product and environmental performance

Wellspect sustainability – Environmental footprint

- Basic requirements for our products
  - Safety and clinical outcome first!
  - Regulatory requirements (Medical Devices Directive and applicable standards)
    - Primary packaging part of the regulatory product
  - Ease of use of product and packagings

- Strive to minimize environmental footprint
- Focus on reduction of carbon footprint
  - Entire company
  - Our products



Wellspect entire carbon footprint

Product contribution to Environmental footprint

- The impact from our products is measured with Life Cycle Assessment
- Entire product incl. primary packaging, boxes
- LCA describes environmental aspects and impacts throughout the whole life cycle, i.e. raw material extraction, production, use and end-of-life management.
- Carbon footprint – impact on climate change – assessed as most important
- Raw materials is the main contributor to product carbon footprint

Challenges – choice of sustainable packaging materials

- Ways to reduce carbon footprint by material choice, amount, recycling …
- Performance and properties
  - User acceptance
  - Protect product, sterile barrier, water barrier, shelf life…
  - Compatibility with other materials (product, labels, printing…)
  - Impact from sterilization
- Reverification and validation need after material change
- Processability in packaging machines
  - Automated high-speed, welding
  - Impact on scrap, energy need…
- Recyclability
  - All part of packaging recyclable together
- Cost
  - Customer’s interest and requirements

Dependent on our material suppliers to reach our goals on reduced carbon footprint!

The road to sustainable medical packaging

Neil Hawkesford

Senior Product Manager

Healthcare

Amcor Flexibles EMEA

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Sustainability is becoming a core design requirement

Key functional requirements must be met …

Deliver on
patient safety

Compliance with
ISO 11607

Ensure device performance
throughout the shelf life

Support effective
device usability

… while delivering sustainability improvements.

Limiting resource consumption

Reduction of carbon footprint

Avoiding environmental pollution

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The challenge: balancing design for performance and sustainability

Porous wet strength papers that are recyclable

Light, oxygen, and moisture barrier while still being recyclable

High performance forming films that are recyclable

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Balancing key functional requirements of forming films with sustainability

Optimized performance

Focus for pack design:

- Production efficiency
- Ensuring sterility
- Ease of use
- Optimized use of packaging materials

Multi-material films using nylon are a proven solution for a range of device applications; backed by validation data and a history of reliable & safe use.

To date, it is hard to deliver on a significantly better packaging system.

Any proposed alternative needs to provide

Confidence in usability and sterility to point of use

Minimised use of packaging materials

Reducing overall carbon footprint

Recycle ready design

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The first step to improve sustainability: Recyclability of PE structures containing Nylon

Why take this first step?

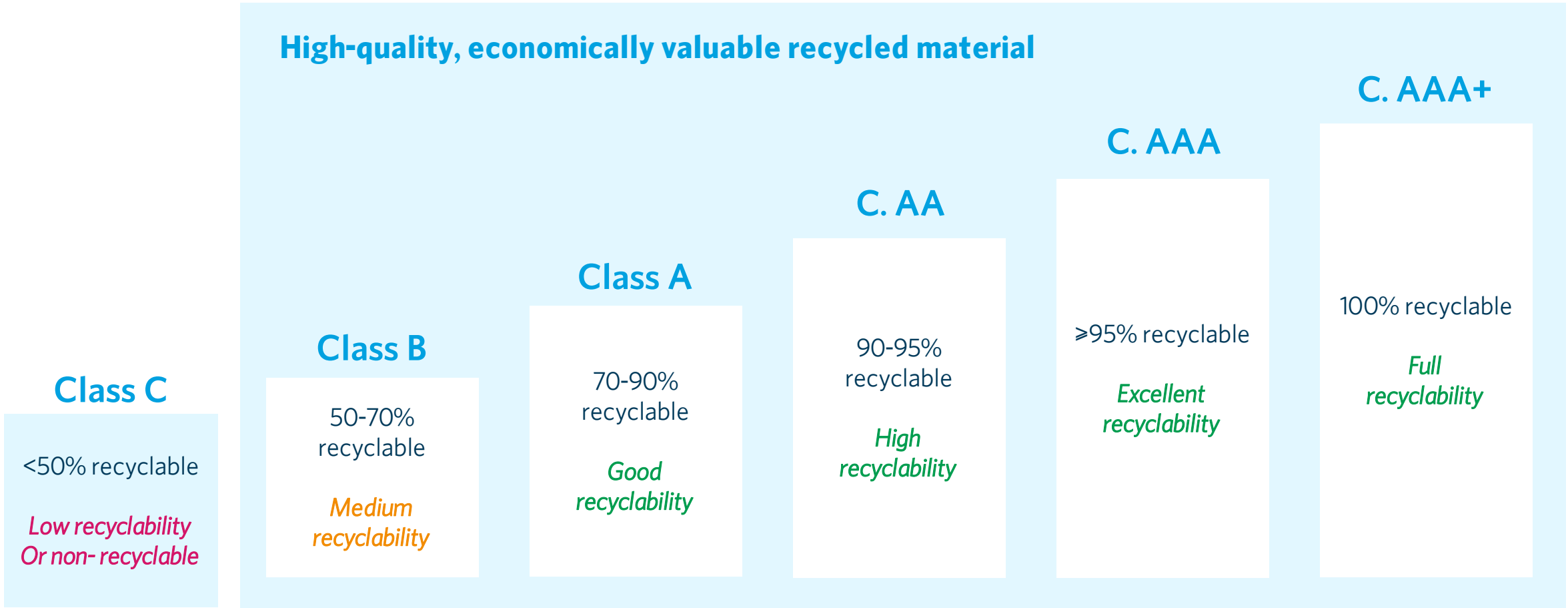
- Utilize wealth of validation data
- Full confidence in pack performance
- Encourage the development of waste recycling systems

Packaging is recyclable if collected, sorted, recycled at industrial scale AND the recycled material can be used in the production of new products

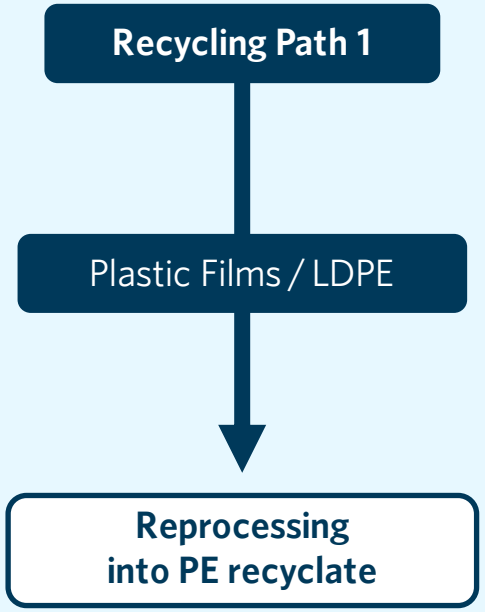
Amcor commissioned Cyclos HTP to certify the recyclability of a range of PE film structures containing Nylon, assessing:

- Material identification as PE (via NIR sorting)
- Good discharge behaviour during sorting
- Material density < 1
- No inseparable contaminant in the melt
- Processing to polymer granules
- Film extrusion and property evaluation

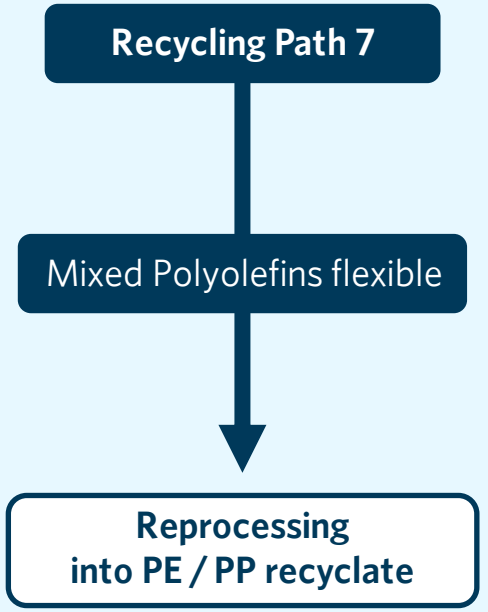
Cyclos HTP classification of recyclability and what it means



Current European recycling streams for PE films containing Nylon



Collection structures for this stream exist in: Germany, France, Italy, Netherlands, Norway, Austria, Spain, Belgium, and Portugal



Collection structures for this stream exist in: Germany, Austria, and Belgium

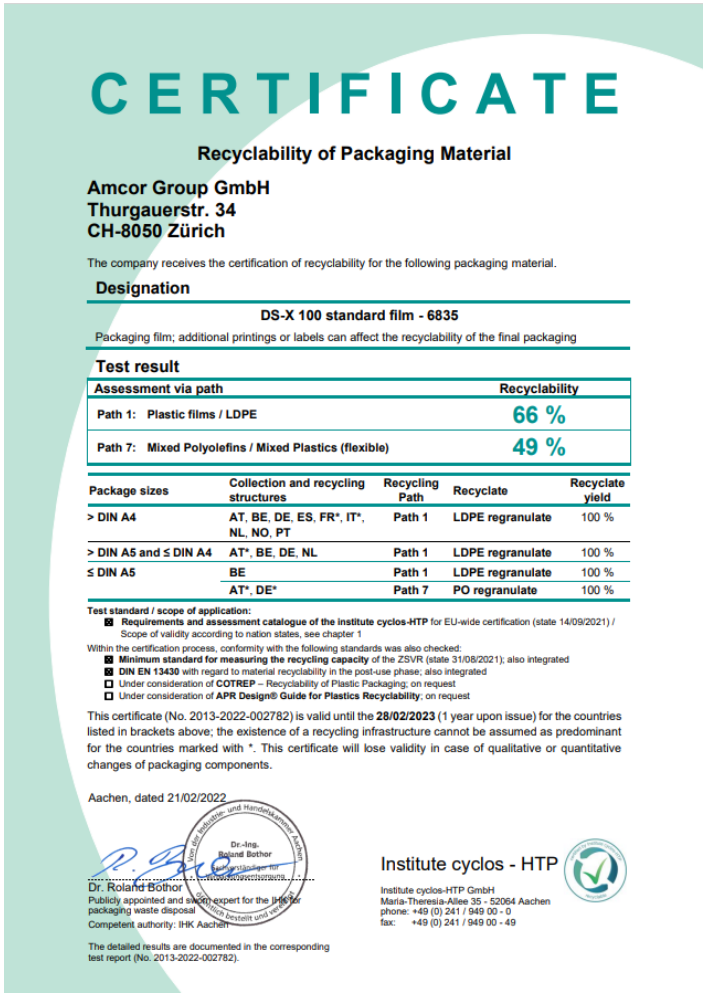
Path allocation depends on the composition of the packaging and sorting behaviour.

Further criteria addressed in the certification scope:

- Packaging item : single component (e.g. tray / combined final packaging (e.g. tray + lid)
- Packaging size

EU countries that have collection and recycling infrastructure for the recycling stream PE films and mixed PO flexibles are included in the certificate scope.

First step completed: Amcor Split-Nylon forming films certified recyclable



CERTIFICATE

Recyclability of Packaging Material

Amcor Group GmbH
Thurgauerstr. 34
CH-8050 Zürich

The company receives the certification of recyclability for the following packaging material.

Designation

DS-X 100 standard film - 6835

Packaging film; additional printings or labels can affect the recyclability of the final packaging

Test result

Assessment via path	Recyclability
Path 1: Plastic films / LDPE	66 %
Path 7: Mixed Polyolefins / Mixed Plastics (flexible)	49 %

Package sizes	Collection and recycling structures	Recycling Path	Recyclate	Recyclate yield
> DIN A4	AT, BE, DE, ES, FR*, IT*, NL, NO, PT	Path 1	LDPE regranulate	100 %
> DIN A5 and ≤ DIN A4	AT*, BE, DE, NL	Path 1	LDPE regranulate	100 %
≤ DIN A5	BE	Path 1	LDPE regranulate	100 %
	AT*, DE*	Path 7	PO regranulate	100 %

Test standard / scope of application:
- ☒ **Requirements and assessment catalogue of the institute cyclos-HTP** for EU-wide certification (state 14/09/2021) / Scope of validity according to nation states, see chapter 1

Within the certification process, conformity with the following standards was also checked:
- ☒ **Minimum standard for measuring the recycling capacity** of the ZSVR (state 31/08/2021); also integrated
- ☒ **DIN EN 13430** with regard to material recyclability in the post-use phase; also integrated
- ☐ Under consideration of **COTREP** – Recyclability of Plastic Packaging; on request
- ☐ Under consideration of **APR Design® Guide for Plastics Recyclability**; on request

This certificate (No. 2013-2022-002782) is valid until the **28/02/2023** (1 year upon issue) for the countries listed in brackets above; the existence of a recycling infrastructure cannot be assumed as predominant for the countries marked with *. This certificate will lose validity in case of qualitative or quantitative changes of packaging components.

Aachen, dated 21/02/2022

Dr. Roland Bothor
Publicly appointed and sworn expert for the IHK for packaging waste disposal
Competent authority: IHK Aachen

Institute cyclos - HTP

Institute cyclos-HTP GmbH
Maria-Theresia-Allee 35 - 52064 Aachen
phone: +49 (0) 241 / 949 00 - 0
fax: +49 (0) 241 / 949 00 - 49

The detailed results are documented in the corresponding test report (No. 2013-2022-002782).

Cyclos-HTP certified that Amcor Split-Nylon (Nylon DS-X) forming films are:

- **Recyclable via path 1** (PE films) and certified **class B**
- **Low recyclability via path 7** (mixed PO flexibles) and certified **class C**

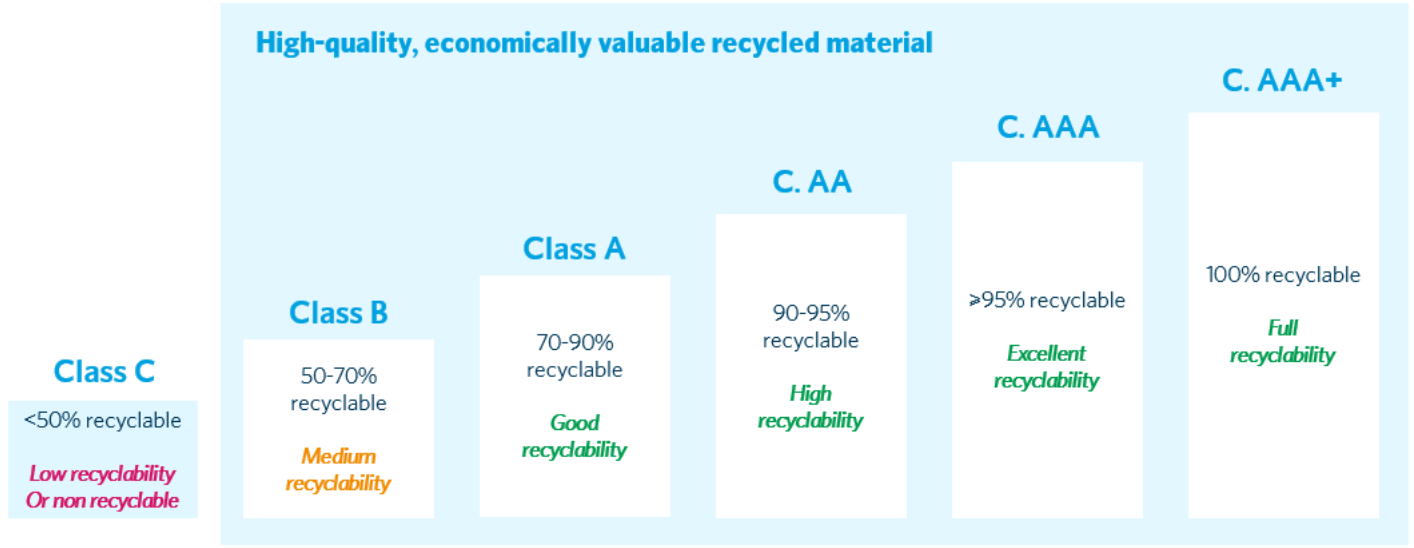
In alignment with :

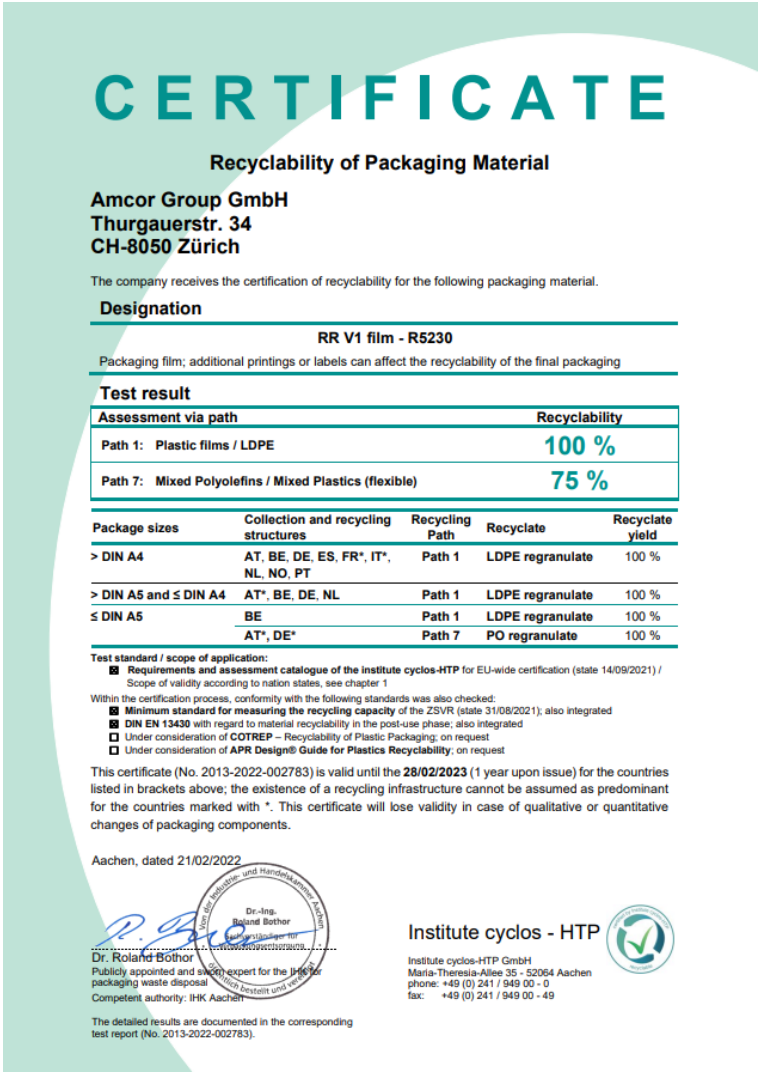
- Minimum standard for measuring the recycling capacity of the ZSVR (state 31/08/2021)
- EN 13430 for material recyclability in the post-use phase

The next step: new Split-Nylon recycle ready, a new film with the same high performance and security, and improved recycling performance

Split-Nylon recycle ready formulation has all benefits of advanced nylon forming films AND is certified recyclable by Cyclos-HTP

- **Recyclable via path 1** (PE films) with a **class AAA+ rating**
- **Recyclable via path 7** (mixed PO flexibles) with a **class A rating**





CERTIFICATE

Recyclability of Packaging Material

Amcor Group GmbH
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CH-8050 Zürich

The company receives the certification of recyclability for the following packaging material.

Designation

RR V1 film - R5230

Packaging film; additional printings or labels can affect the recyclability of the final packaging

Test result

Assessment via path	Recyclability
Path 1: Plastic films / LDPE	100 %
Path 7: Mixed Polyolefins / Mixed Plastics (flexible)	75 %

Package sizes	Collection and recycling structures	Recycling Path	Recyclate	Recyclate yield
> DIN A4	AT, BE, DE, ES, FR*, IT*, NL, NO, PT	Path 1	LDPE regranulate	100 %
> DIN A5 and ≤ DIN A4	AT*, BE, DE, NL	Path 1	LDPE regranulate	100 %
≤ DIN A5	BE	Path 1	LDPE regranulate	100 %
	AT*, DE*	Path 7	PO regranulate	100 %

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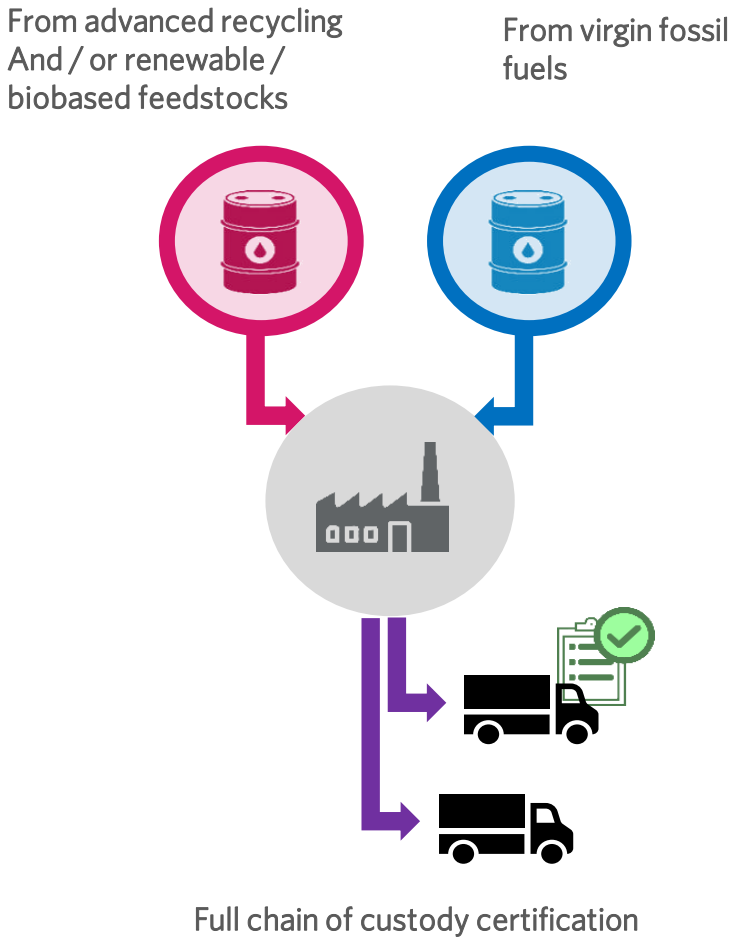
The detailed results are documented in the corresponding test report (No. 2013-2022-002783).

Additional options, further reducing carbon footprint

Raw material selection can further reduce carbon footprint

Recycled content PA and PE resins made from circular feedstocks from advanced recycling process and certified by ISCC+

PA and PE Resins sourced from **renewable / biobased feedstocks**



Sustainable medical packaging : from concept to market

From concept to launch

Customer vision & sustainability strategy

- Customer goals

Recyclability, Carbon reduction…

- Timeline
- Challenges and red lines

Regulatory requirements

- Regulatory needs
- Implications of packaging change for your device
- Potential contingencies available for critical solutions

Defining the right packaging solution

Design tools & services:

- Advice on material selection and pack design
- ASSET™ life-cycle assessment
- Physical prototyping and performance assessment

Industrialization and technical support

Industrialization services:

- Packaging line trials and optimization
- On-site expert support
- BCP and dual supply
- Regulatory expertise

From concept to packaging blueprint

From blueprint to market

Roundtable discussion

Steven Meun
Director Europe
Healthcare Plastics Recycling Council

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Questions?

Please type your questions in the Q&A box

WHAT'S NEXT?

- Consult our resources: blogs and website
- Contact us via LinkedIn or email medical.europe@amcor.com
- Check HPRC website