



## RecyClass Unwrapped

Recyclability self-assessment & certification

Moderated by

Gian De Belder | Technical Director | Procter & Gamble

RecyClass

# RecyClass Unwrapped Webinar

*Recyclability  
self-assessment & certification*

Fabrizio Di Gregorio



# How to claim recyclability in 3 steps?

## Design for Recycling Guidelines

## RecyClass Tool

## Recyclability Certification

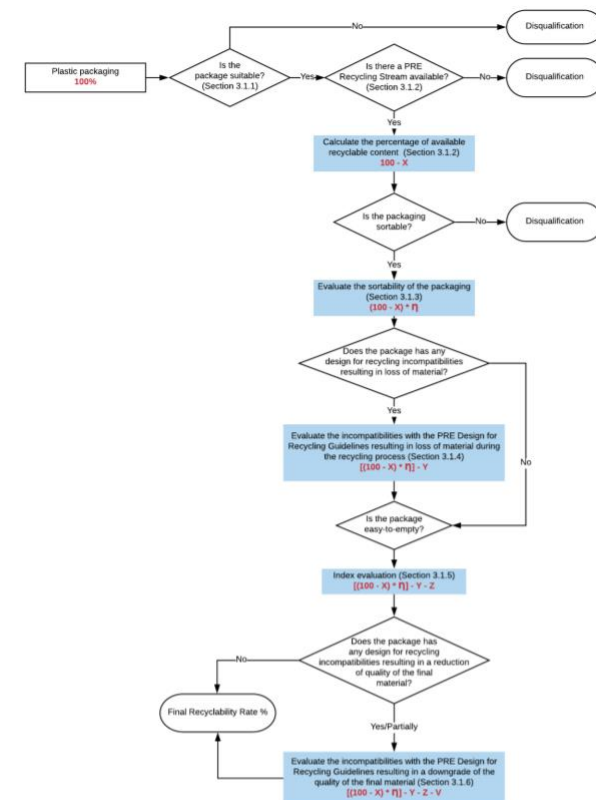
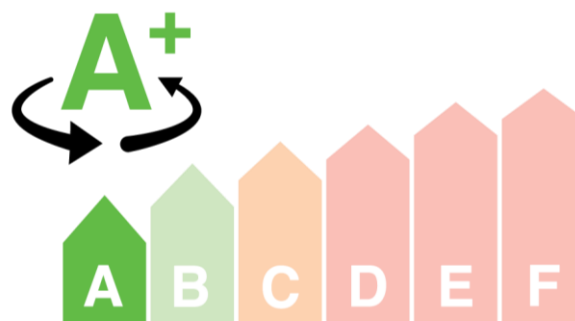
RecyClass PE TRANSPARENT FLEXIBLE FILMS for Household and Commercial Packaging

CLASS RANKING*	YES - FULL COMPATIBILITY A-B	CONDITIONAL - LIMITED COMPATIBILITY B-C	NO - LOW COMPATIBILITY D-E-F
DESCRIPTION (See Protocol)	Materials that passed the testing protocols with no negative impact OR materials that have not been tested (yet), but are known to be acceptable in PE recycling	Materials that passed the testing protocols if certain conditions are met OR materials that have not been tested (yet), but pose a low risk of interfering with PE recycling	Materials that failed the testing protocols OR materials that have not been tested (yet), but pose a high risk of interfering with PE recycling
MAIN MATERIAL	PE-LD, PE-LLD, PE-HD	Multi-layer PE/PP	Any other polymer (i.e. PET, PCT, PCTC, etc.)
MATERIAL COMPOSITION	A when PE content is > 90% & when PE content is > 90%	C when PE content is > 70%	D when PE content is > 50% & when PE content is > 30%
CLOSURE	Unpigmented/transparent	Light colors/transparent colors	Dark colors/Black carbon black
SIZE	> A4 or > 50 x 50 mm once compacted	> A4 format or between 20 x 20 and 50 x 50 mm once compacted (Sorting test)	> 20 x 20 mm
PRODUCT RESIDUES (Dry to Empty index)	A if the index is < 5% B if the index is < 10%	C if the index is < 15%	D if the index is > 20% E if the index is 20% F if the index is > 25%
BARRIER	Barrier in the polymer matrix SDOs and ADOs without additional coatings	> 5% EVOH (in polyolefin combination film) metalized layers without coatings Ecolean High Flex (D+ LLDPE)	> 5% EVOH (in polyolefin combination film) Barrier layer PCT, PCTC, PCT, any other barrier layer Foaming agents used as expandable chemical agents, aluminum Bio (non-phosphonate) additives Additives that do increase the density higher than 0.91 g/cm <sup>3</sup> (CaCO <sub>3</sub> , talc, glass fibers, etc.)
ADHESIVES	Additives that do not increase the density higher than 0.91 g/cm <sup>3</sup>	PP, removable aluminum lidings	Metal, aluminum, PCT, PET, PETG, PS, PLA, non PD or foams with density > 1 g/cm <sup>3</sup>
CLOSURE SYSTEM	PE-LD, PE-LLD, PE-HD	PP, removable aluminum lidings	Metal, aluminum, PCT, PET, PETG, PS, PLA, foiled paper, non PD or foams with density > 1 g/cm <sup>3</sup>
LINKS, SEALS AND VALVES	PE-LD, PE-LLD, PE-HD	PP, removable aluminum lidings	Metal, aluminum, PCT, PET, PETG, PS, PLA, foiled paper, non PD or foams with density > 1 g/cm <sup>3</sup>
LABELS	PE	PP, paper labels without fibers	Metalized labels, any other paper labels with fibers
ADHESIVES FOR LABELS	Water soluble or water-releasable at less than 60°C	Non-toxic (according to EU/PA guidelines)	Additives non-soluble in water or non-releasable in water at less than 60°C
INKS	No inks	Non-toxic (according to EU/PA guidelines)	Inks that bleed Toxic or hazardous inks
DIRECT PRINTING	Label marked price Printed production or expiry date	Printing covering > 50%***	Printing covering > 50%***
OTHER ATTACHMENTS	PE-LD, PE-LLD, PE-HD	PP	Metal, aluminum, PCT, PET, PETG, PS, PLA, paper, foams with density > 1 g/cm <sup>3</sup>
RECYCLED CONTENT			

No change in the recyclability assessment. A separate "Recycled Content Traceability Certification" based on a Chain of Custody approach is available with RecyClass.

\* Class ranking resulting from the RecyClass assessment. If class is reported two times because of the 30-60% amount of PE in the packaging or because of slight incompatibilities in the design.  
\*\*\* temporary solution

Last update: February 2021



- Facts-based Guidelines (Recyclability Evaluation Protocols)
- DfR Guidelines give an **overview** of the compatible and non-compatible packaging features.

- Recyclability **Self-Assessment**
- RecyClass Team support

- Recyclability **Assessment** by a recognized Certification Body

RecyClass

*"A circular economy is one that is restorative and regenerative by design and **aims to keep products, components and materials at their highest utility and value at all times**" (Ellen McArthur Foundation)*


DEUTSCHENGLISHFRANÇAISESPAÑOLITALIANO

Member Zone

RecyClass


ABOUTRECYCLABILITYAPPROVALSRECYCLED CONTENTNEWS & EVENTSHelp & Contact

# Making Plastic Packaging Circular




## Plastic Recyclability

LEARN ABOUT PLASTIC PACKAGING RECYCLABILITY



## Stay Informed

EVERYTHING YOU NEED TO KNOW ABOUT RECYCLASS



## Recycled Content

GET INFORMED ON THE RECYCLED CONTENT TRACEABILITY

In 2020

3 000+  
NEW USERS

+5 000  
USERS

+ 60%  
GROWTH

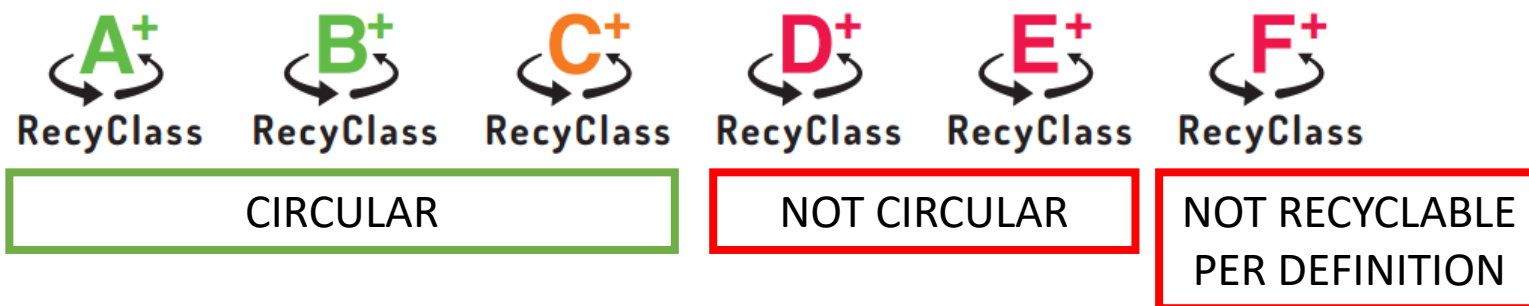
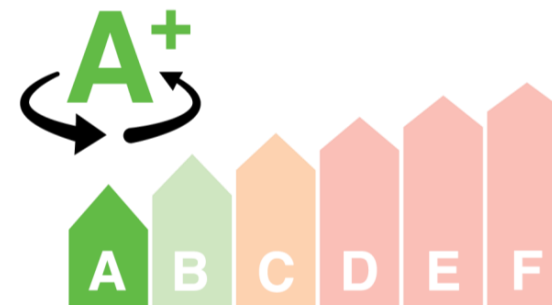
# What is the RecyClass online-tool?



- A tool that ranks the recyclability of a plastic packaging
- It evaluates the package recyclability given the existing recycling streams.



- It gives indications to the user about precise critical points to be improved.



RecyClass

# 1. Packaging composition

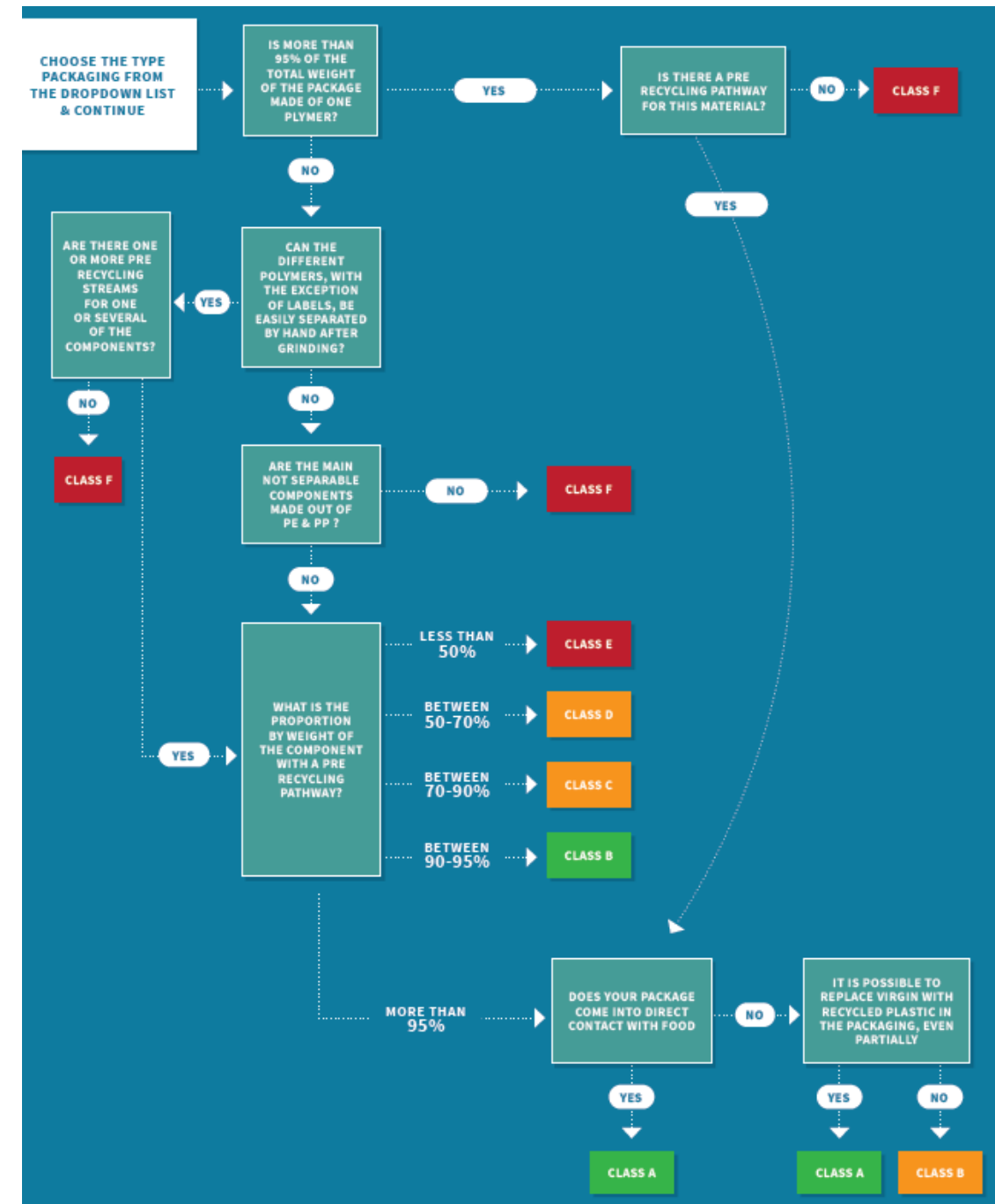
It is based on different areas of questioning.

- General questions (packaging composition)
- Compatibility (DfR guidelines)
- % of recycled plastics content
- Easy-to-empty / Easy-to-access index
- REACH Compliance

Weights of barrier, coating, mineral fillers, closure, label/sleeve, adhesive, printing, as well as any other components have to be considered.

Mono-material packaging is preferred. Indeed, the larger the content of one polymer in the packaging, the higher its recyclability rate will be (i.e. the amount of main plastic effectively recycled).

RecyClass



## 2. Design compatibility

- The Design for Recycling Guidelines are transposed to the RecyClass tool
- The overall recyclability of the package could be assessed.

RecyClass

### PE TRANSPARENT FLEXIBLE FILMS for Household and Commercial Packaging

	YES - FULL COMPATIBILITY	CONDITIONAL - LIMITED COMPATIBILITY	NO - LOW COMPATIBILITY
CLASS RANKING*	<b>A-B</b>	<b>B-C</b>	<b>D-E-F</b>
DESCRIPTION (Test Protocol)	Materials that passed the testing protocols with no negative impact OR materials that have not been tested (yet), but are known to be acceptable in PE recycling	Materials that passed the testing protocols if certain conditions are met OR materials that have not been tested (yet), but pose a low risk of interfering with PE recycling	Materials that failed the testing protocols OR materials that have not been tested (yet), but pose a high risk of interfering with PE recycling
MAIN MATERIAL	PE-LD, PE-LLD; PE-HD	Multilayer PE/PP	Any other polymer (ex. PET, PVC, etc.)
MATERIAL COMPOSITION	A when PE content is > 95%; B when PE content is > 90%	C when PE content is > 70%	D when PE content is > 50%; E when PE content is > 30%; F when PE content is < 30%
COLOURS	Unpigmented; transparent	Light colours; translucent colours	Dark colours; black; carbon black
SIZE	> A4 or > 50 x 50 mm once compacted	< A4 format or between 20 x 20 and 50 x 50 mm once compacted (Sorting test)	< 20 x 20 mm
PRODUCT RESIDUES (Easy to Empty index)	A if the index is < 5%; B if the index is < 10%		
BARRIER	Barrier in the polymer matrix; SiOx and AlOx without additional coatings	< 5% EVOH (in polyolefinic combination film); metallized layers without coatings; EcoLam High Plus; VO+ LLDPE	> 5% EVOH (in polyolefinic combination film); foaming agents used as expandant chemical agents; aluminium
ADDITIVES	Additives that do not increase the density higher than 0,97 g/cm <sup>3</sup>		bio-/oxo-/photo-degradable additives; Additives that do increase the density higher than 0,97 g/cm <sup>3</sup> (CaCO <sub>3</sub> , talc, glass)
CLOSURE SYSTEM	PE-LD, PE-LLD, PE-HD	PP	Metal, aluminium, PVC, PET, PETG, PLA, non PO or foams with density < 1 g/cm <sup>3</sup>
LINERS, SEALS AND VALVES	PE-LD, PE-LLD, PE-HD	PP, removable aluminium liddings	Metal, aluminium, PVC, PET, PETG, PLA, foiled paper, non PO or foams with density < 1 g/cm <sup>3</sup>
LABELS	PE	PP, paper labels without fiberloss	Metallized labels, any other; paper labels with fiberloss
ADHESIVES FOR LABELS	Water soluble or water-releasable at less than 60°C		Adhesives non-soluble in water or not releasable in water at less than 60°C
INKS	No inks	Non-toxic (according to EUPIA guidelines)	Inks that bleed; Toxic or hazardous inks.
DIRECT PRINTING	Laser marked print; Printed production or expiry date	Printing covering < 50%**	Printing covering > 50% **
OTHER ATTACHMENTS	PE-LD, PE-LLD, PE-HD		Metal, aluminium, PVC, PET, PETG, PLA, paper, foams with density < 1 g/cm <sup>3</sup>
RECYCLED CONTENT			

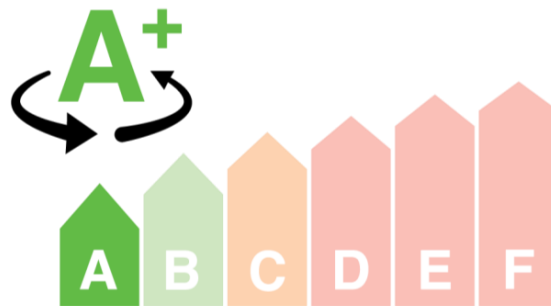
No change in the recyclability assessment | Traceability Certification' based on a Chain of Custody approach is available with RecyClass

Last update - February 2021

\* Class ranking resulting from the RecyClass assessment. B class is reported two times because of the 90/95% content of PE in the packaging or because of slight incompatibilities in the design  
\*\* temporary solution

-1 class

-3 classes



**A+**  
RecyClass

**B+**  
RecyClass

**C+**  
RecyClass

**D+**  
RecyClass

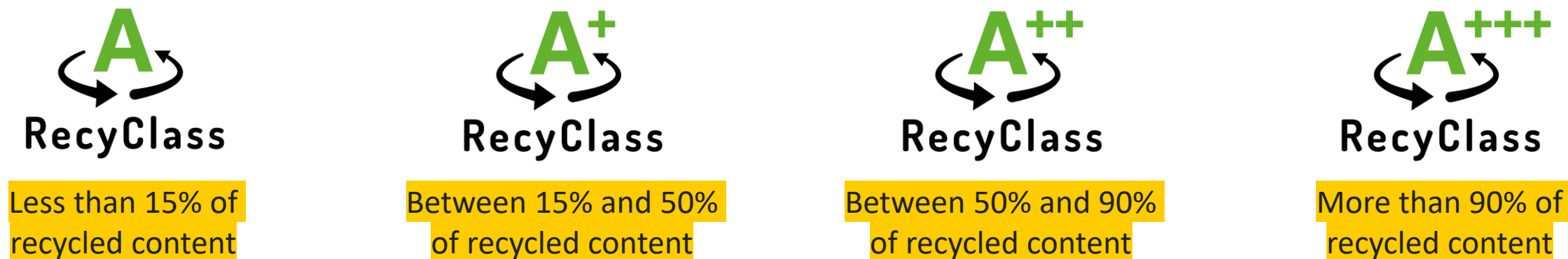
**E+**  
RecyClass

**F+**  
RecyClass



### 3. Recycled Content

- A circular plastics economy is based on the fact that plastic is recycled and used in the production of new products. In order to foster this perspective, “+” bonus to the recyclability result is granted for the use of recycled plastic as follows:



The use of recycled plastic in the packaging is considered a bonus in the self-assessment because of the replacement of a certain rate of virgin plastic. However, the content in recycled plastic **never determines an improvement in the recyclability class.**

The recycled content is **not covered by the Recyclability Certifications.** A separate Recycled Content Traceability Certification based on a Chain of Custody approach is assessing this feature.



## 4. Easy-to-empty / Easy-to-access index

- The presence of residual product content in the packaging negatively affect its recyclability. Therefore, a packaging which is designed to be emptied easily is more recyclable than one which still contains significant quantities of the product it contained.
- For a package that contains liquids, creams, gels or pasty products the easy-to-empty / easy-to-access index should be calculated.



### Calculation method:

$$Ete_i = \left( \frac{Pe - W}{Pf} \right) \times 100$$

**W** = weight of a fully empty packaging (without product inside)  
**Pf** = declared net weight of content (in case of volume it must be converted in weight)  
**Pe** = average weight of empty packaging after normal use, in minimum 10 emptying tests.

### Results:

- ✓ More than 5% = -1 class
- ✓ More than 10% = -2 classes
- ✓ Further loss of a class, with each gain of 5% in the calculated index

# How to use RecyClass online-tool?



Head over to [www.recyclclass.eu](https://www.recyclclass.eu)!



After the analysis is completed you will receive a comprehensible report with:

- Recyclability class (between A and F)
- Indications about parts to be changed to improve the recyclability of the package.



Users intending to use RecyClass logos and recyclability claims need to have their analysis officially certified.

RecyClass™

ENGLISHDEUTSCHFRANÇAISESPANÓLITALIANO

EDIT MY PROFILELOG OUT

Welcome Alice Wallon!

So far, you have created 21 analyses

START NEW ANALYSIS

YOUR ANALYSES TO DATE

Below you will see a listing of your previous analyses.  
All corresponding analysis results can be downloaded as a PDF.

Date of the analysis	Name of the analysis	Result	Actions
----------------------	----------------------	--------	---------

1

2

3

4

5

DESCRIPTION — SUITABILITY — TYPE OF PACKAGING — DESIGN FOR RECYCLING — FINAL RESULT

What material is the package body made of?  
PE-HD (0)

What colour is the package body?  
Colourless or natural (0)

What is the barrier of the package body made of?  
No barrier layer (0)


What additives does the package body contain?  
No additives (0)

What material are the closures made of?  
No closure system (0)

Are there liners, seals or valves?

QUESTIONS ANSWERED: 14/14  
SLIGHTLY NEGATIVE: 0 x selected  
NEGATIVE: 0 x selected  
VERY NEGATIVE: 0 x selected  
DISQUALIFYING: 0 x selected

INTERIM RESULT:  
No change in interim result from Question area 1.

  
RecyClass

RecyClass

# Recyclability Certification: available for final package

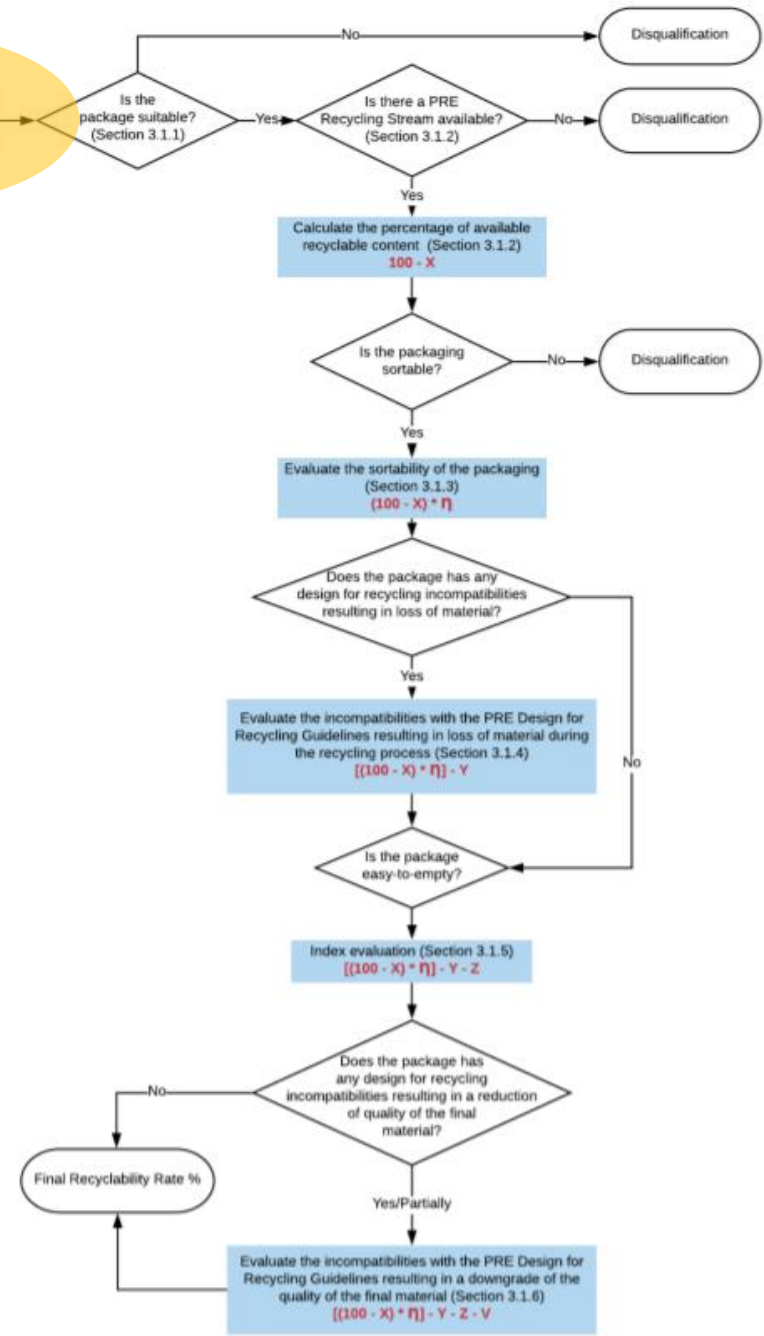
## Design for Recycling Assessment

- Qualitative Assessment: ranking from A to F
- Based on the packaging design and the end-market
- Valid for the EU market

## Recyclability Rate Assessment

- Quantitative Assessment: % of recyclable content
- Based on the collection and sorting infrastructures, on the packaging design, and on the end-market
- Country-specific

# Recyclability Rate Assessment



Collection and local infrastructure

Sortability

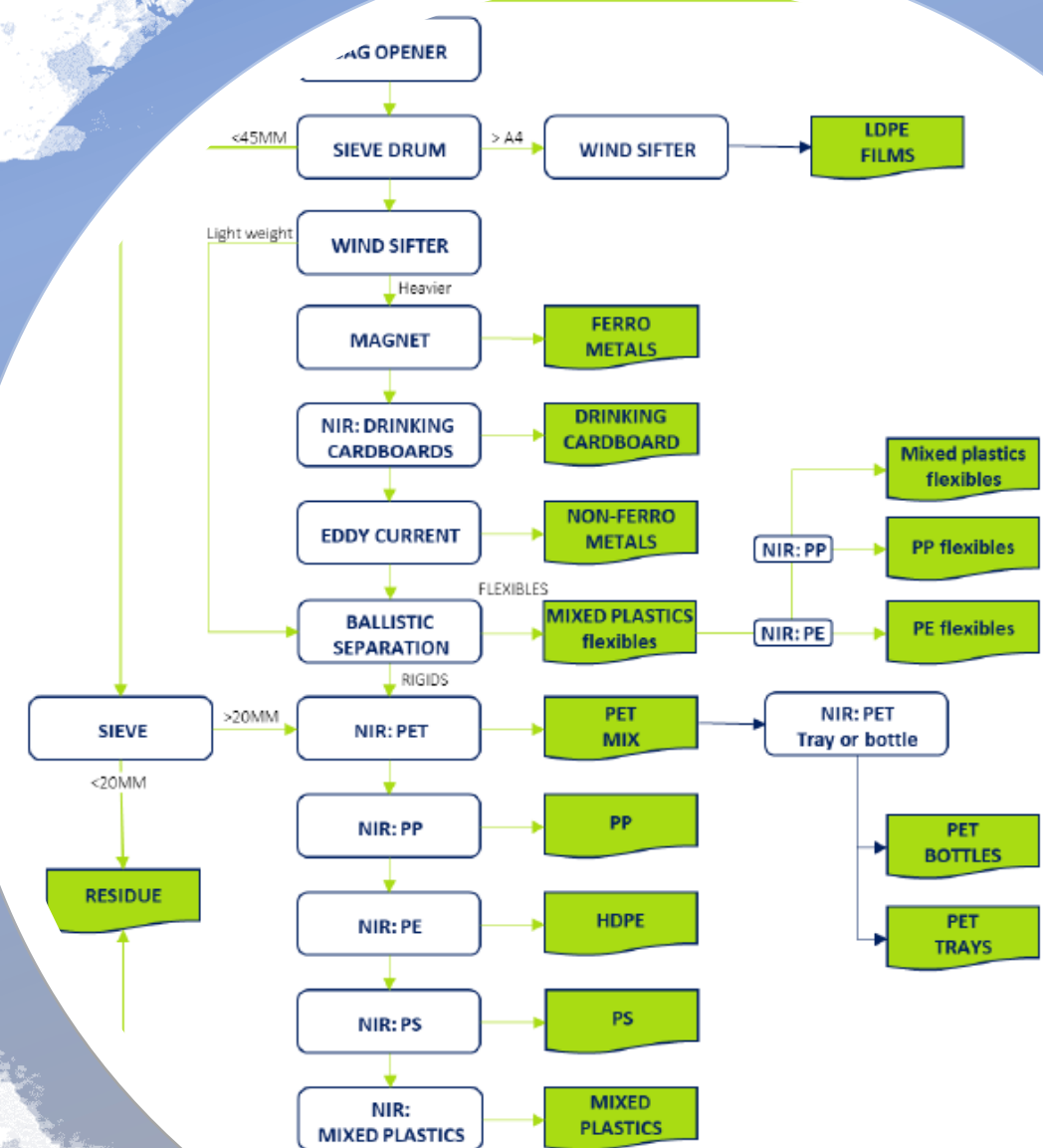
Recyclability (DfR)

End market: ability in replacing virgin plastic in high value applications

# Sorting Protocol

## Mandatory for:

- Large labels (covering > 50% of the surface) made from a different polymer
- Full body sleeves
- Perforated full body sleeves
- Multi-layer structures (excluding PE/PP EVOH)
- Metallisation (excluding on the inside/in the middle layer)
- Non NIR detectable colours (also when dark colours used for internal layers)
- Different types of plastic used on front and back sides.
- Different types of plastic (rigids and flexibles) used in the package.
- Round shape, very rigid and hard to compact



# Recyclability Certification: Results & Benefits

## Design for Recycling assessment

- ✓ Class ranking from A to F
- ✓ Recycling stream of the packaging
- ✓ Use of the RecyClass letter logo<sup>1</sup>
- ✓ Endorsement of the recyclability claims<sup>2</sup> by RecyClass

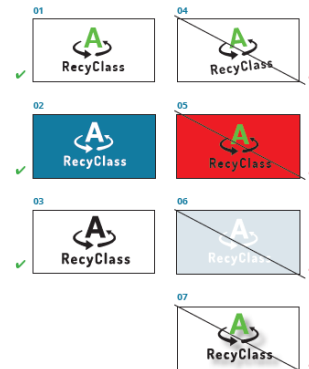
## Recyclability Rate assessment

- ✓ Class ranking from A to F
- ✓ Recyclability rate from 0 to 100% (format : XX.x%)
- ✓ Recycling stream of the packaging
- ✓ Countries where the certification is valid.
- ✓ Use of the RecyClass letter logo<sup>1</sup>
- ✓ Endorsement of the recyclability claims<sup>2</sup> by RecyClass



### DO'S AND DON'TS

- 01 Space around the logo**  
Always leave the logo some space to breathe. Try to use white or neutral backgrounds.
- 02 Negative colour**  
If it's unavoidable to sit the logo on a colour or a photo, use the negative logo.
- 03 Single colour**  
If it's unavoidable, the logo can be used in black and white.
- 04 No rotation**  
Do not rotate the logo.
- 05 Colour clash**  
Do not place the colour logo on colour backgrounds, use the negative logo.
- 06 Careful use of the negative logo**  
Do not use the negative logo on backgrounds that are too light or cluttered.
- 07 No drop shadows**  
Do not add embellishments like drop shadows, embossings etc. to the logo.



RECYCLASS GUIDELINES | 7



1. According to the *Logo Use Guidelines* document
2. According to the *Use of Claims Guidance* document (NB: the rate assessment will lead to additional claims.)

RecyClass

# RecyClass Recognized Certification Bodies



**Aimplas**  
Spain



**Circular Analytics**  
Austria



**Plastship**  
Germany



**Recoup**  
UK



**Redilo**  
Switzerland



**Suez Circpack**  
EU 27+3



**Veolia PET Germany GmbH**  
Sweden, Norway, Finland,  
Denmark

List and contacts of the Certification Bodies  
can be found on the [RecyClass website](#).

RecyClass

RecyClass

**RECYCLABILITY RATE  
CERTIFICATE**

THIS CERTIFIES THAT

**Brand and product name**  
Company name

has successfully been certified by RecyClass:

The package scored  
**95 %**  
recyclability. The value represents  
the amount of material that will  
be effectively recycled during a  
recycling process.

This certificate is based on the Audit Report n° XXX-XXX-XX  
The Certificate and its results are valid for name of country

Valid until: 01/01/2025.

Name of Auditor & Signature

\*Validity conditions may be found in the Audit Report



The background of the entire image is a dense, close-up photograph of various types of plastic waste, including clear and white plastic bottles, caps, and crumpled plastic bags. The image has a light blue tint. Overlaid on this background is a large, solid orange circle that serves as a container for the text.

**Thank you  
for your attention**

[www.recyclclass.eu](http://www.recyclclass.eu)  
[info@plasticsrecyclers.eu](mailto:info@plasticsrecyclers.eu)

**RecyClass**



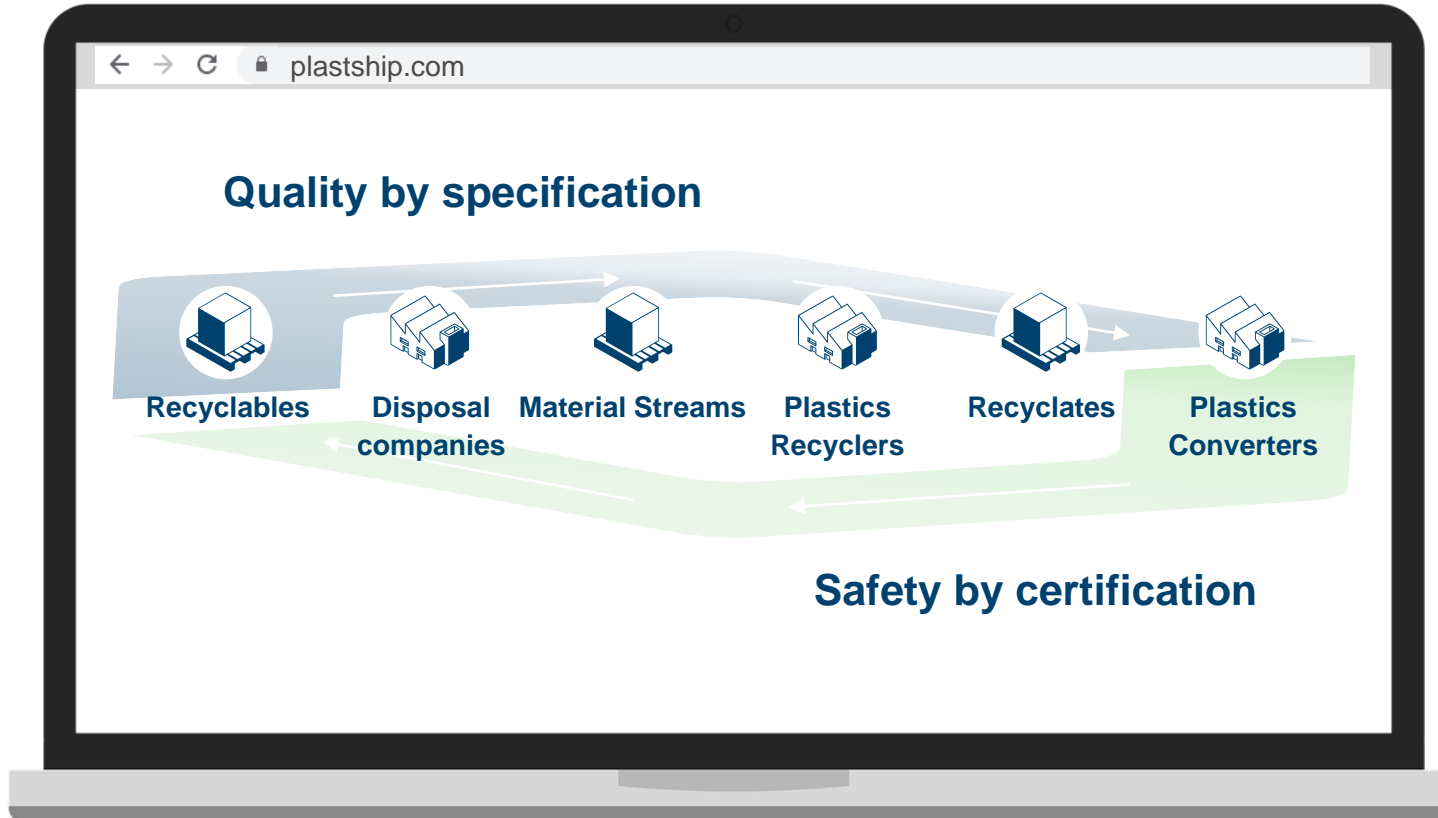
# **PLASTSHIP**

Your plastic recycling network

## Certifying packaging recyclability with RecyClass: Experiences from practice

RecyClass Unwrapped 24.02.2021

plastship is a digital industry platform for procurement, quality assurance and traceability of plastics recyclates throughout the value chain to ensure safety and to promote the European recycling industry.



Accredited to conduct:

**RecyClass™**

**Recyclability Certifications**

**Recycled Content Certifications**



**EuCertPlast Certifications**



Company founded in June 2018, Managing Directors Andreas Bastian and Konstantin Humm with background in the industry, business development and logistics;  
Main shareholder is RIGK GmbH, operator of take-back systems for plastics and packaging in the industrial sector.

# Agenda

1. Recyclability recap
2. Certification options
3. Prerequisites for the assessment
4. Assessment and certification in practice



A photograph of a beach heavily littered with plastic waste, including bottles, bags, and other debris. In the background, several palm trees stand against a clear sky. The entire image is overlaid with a semi-transparent blue filter.

# 1. Recyclability recap

## What is recyclability about?

### Collection



The product must be made with a plastic that is **collected** for recycling, has market value and/or is supported by a legislatively mandated program.

### Sorting



The product must be **sorted** and aggregated into defined streams for recycling processes.

### Recycling



The product can be processed and reclaimed/**recycled** with commercial recycling processes.

### Use as raw material



The recycled plastic becomes a **raw material** that is used in the production of new products.



A EUROPEAN STRATEGY  
FOR PLASTICS  
IN A CIRCULAR ECONOMY

“...by **2030**, all **plastics packaging** placed on the EU market is reusable or **easily recycled**”.

“...urgent to develop a **European market for recycled plastics**.”

“... by **2025**, **ten million tonnes of recycled plastics** [] into new products on the EU market.”



A photograph of a beach heavily littered with plastic waste, including bottles, bags, and other debris. In the background, several palm trees stand against a clear sky. The entire image is overlaid with a semi-transparent blue filter.

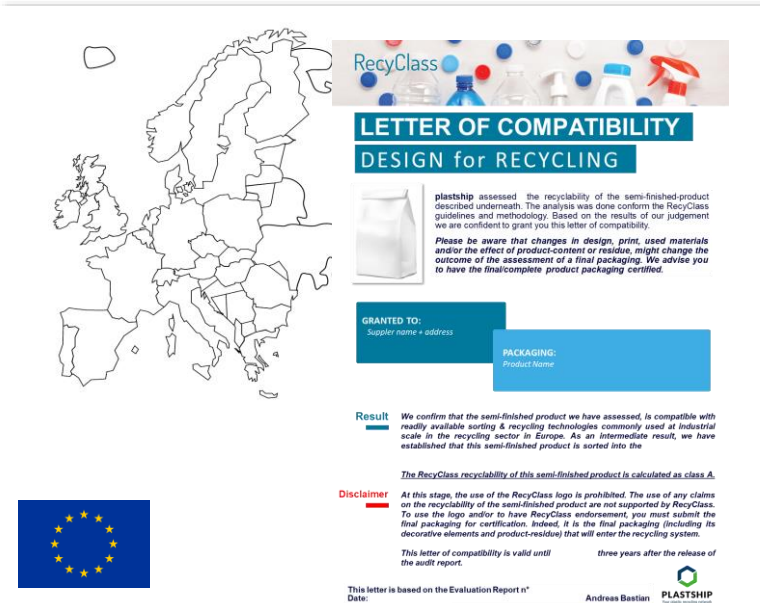
## 2. Certification options

**Demonstrate recyclability:** More information in the official document on the method. We will be happy to advise you on certification options and how to improve recyclability.



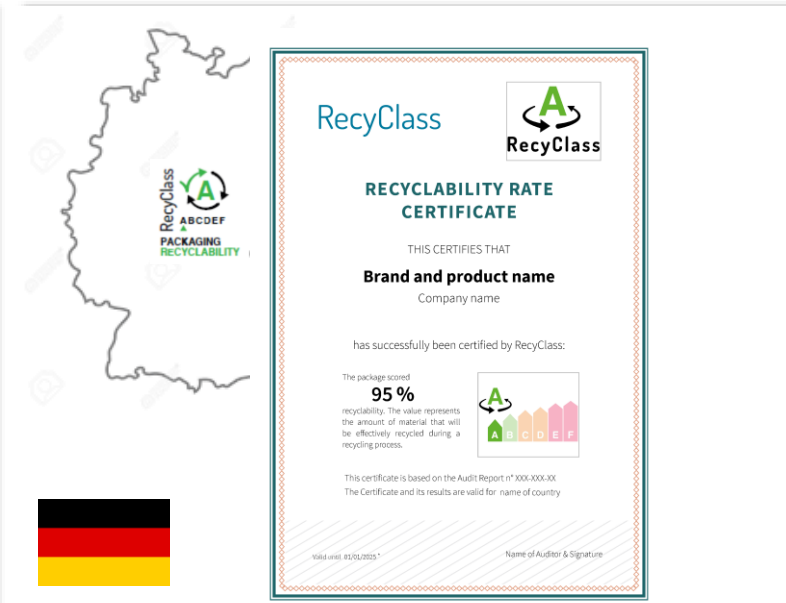
### Design for Recycling Assessment:

**Basis:** Complete plastic packaging incl. all components and contents  
**Result:** Certificate with recyclability class in A-F incl. report  
**Validity:** 3 years, Europe-wide  
**Objective:** To have the recyclable design of the packaging verified throughout Europe and to communicate this to customers.



### Letter of Compatibility:

**Basis:** Individual packaging components (incomplete packaging) without contents  
**Result:** Recyclability class in A-F  
**Validity:** 3 years, Europe-wide  
**Objective:** Demonstrate recycling-compatible design of packaging components throughout Europe lassen  
**Remark:** Limitation of recyclability statements to the content of the LoC for communication to B2B customers



### Recyclability Rate Assessment:

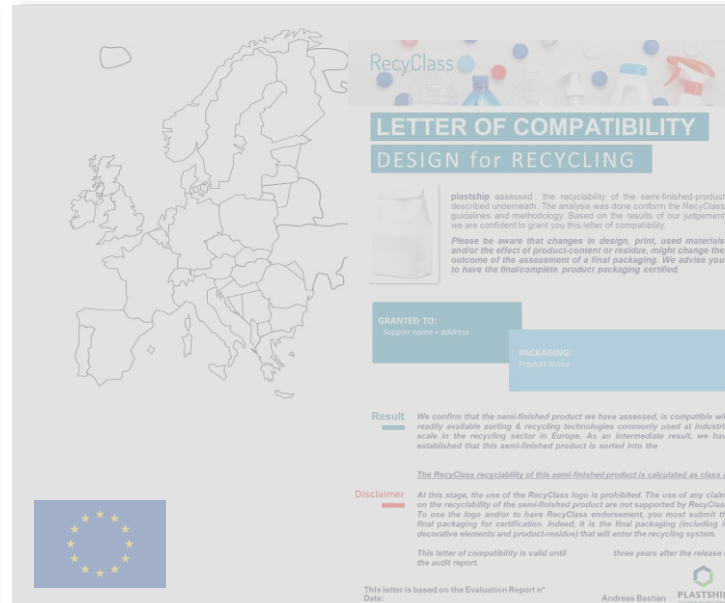
**Basis:** Complete plastic packaging incl. all components and contents  
**Result:** Certificate with recyclability class in A-F and % rating incl. report  
**Validity:** 3 years, Germany-wide  
**Objective:** Demonstrate recyclability in detail in a specific geographic area

**Demonstrate recyclability:** More information in the official document on the method. We will be happy to advise you on certification options and how to improve recyclability.



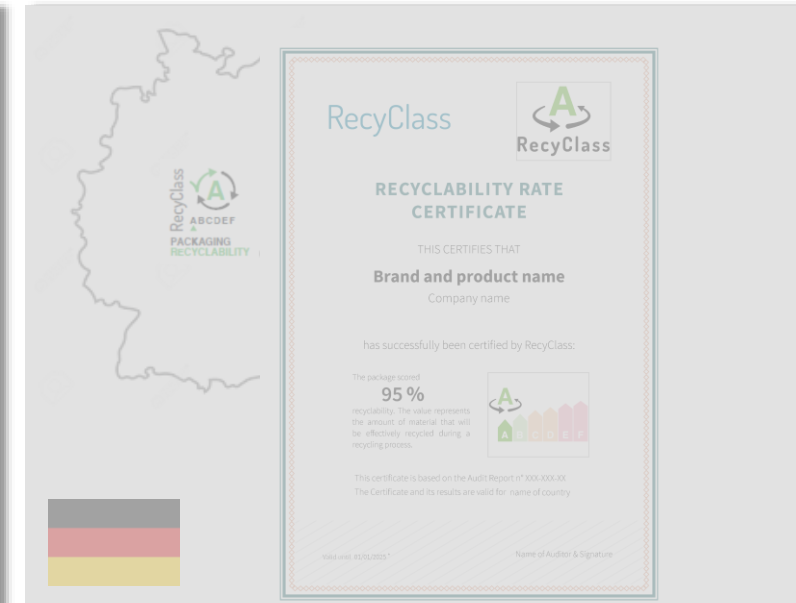
## Design for Recycling Assessment:

<b>Basis:</b>	Complete plastic packaging incl. all components and contents
<b>Result:</b>	Certificate with recyclability class in A-F incl. report
<b>Validity:</b>	3 years, Europe-wide
<b>Objective:</b>	To have the recyclable design of the packaging verified throughout Europe and to communicate this to customers.



## Letter of Compatibility:

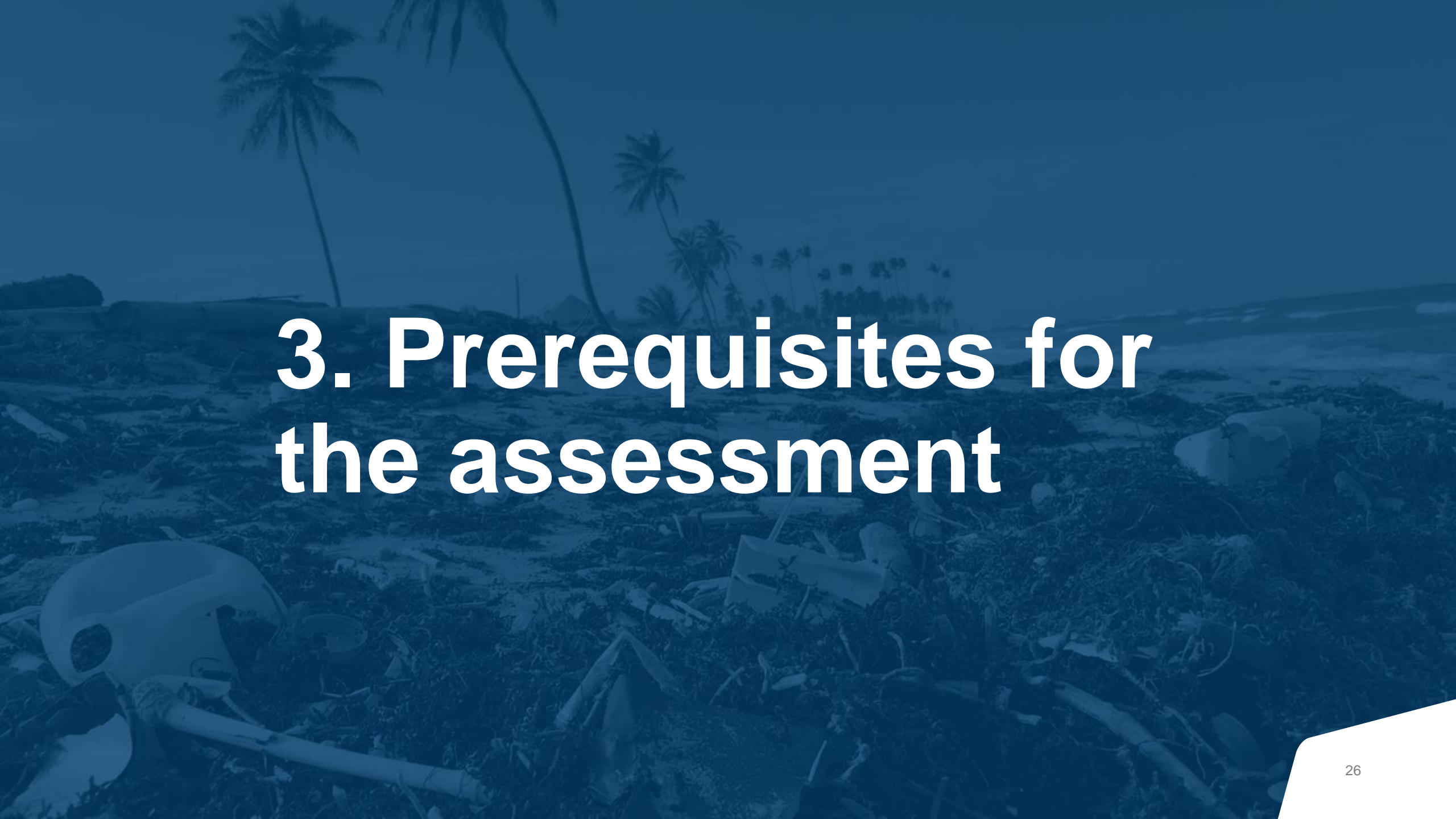
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## Recyclability Rate Assessment:

<b>Basis:</b>	Complete plastic packaging incl. all components and contents
<b>Result:</b>	Certificate with recyclability class in A-F and % rating incl. report
<b>Validity:</b>	3 years, Germany-wide
<b>Objective:</b>	Demonstrate recyclability in detail in a specific geographic area





# 3. Prerequisites for the assessment

## How is the process from first exchange to receipt of the certificate?

### Application:

First exchange about the assessment and application



1. Self-Assessment

2. Application Form

### Application approval:

NDA is signed, offer is accepted and feasibility is confirmed



3. Non-Disclosure Agreement

4. Confirmation of feasibility  
(covered by guidelines)  
and quotation

### Data transfer and testing:

Collect all data and perform all tests needed to create the report



5. Specifications and samples

6. Equivalent packaging

7. Test conduction

### Assessment:

Certification codes are issued and report plus certificate is created and approved



8. Certification code(s)

9. Certificate, Audit report, Logo,  
Use of claim guidance

## What is generally and for all options needed to conduct a recyclability assessment?

Product name	Shampoo Bottle				
Certification Code	XXX-XXX-XX				
Component No.	Component type	Raw material	Weight (g)	Weight (%)	Component basis colour
1	Bottle	PE-HD	26,2	69,89%	white
	White Masterbatch	50% PE	0,74	1,97%	white
3	2K-Closure lower part	PP	6,1	16,27%	white
	2K-Closure upper part	PE-HD	3,2	8,54%	white
	White Masterbatch	50% PE	0,05	0,13%	white
4	Label front	PE	0,4	1,07%	natural / translucent
5	Label back	PE	0,6	1,60%	natural / translucent
6	Adhesives	-	0,1	0,27%	-
7	Inks	-	0,1	0,27%	mixed
Total			37,49	100%	



**Packaging composition incl. raw materials and weights**



**Min. 10 samples of the whole packaging including contents**



**Packaging specification and specifications on masterbatches, and inks/adhesives**

A photograph of a beach heavily littered with plastic waste, including bottles, bags, and other debris. In the background, several palm trees stand against a clear sky. The entire image is overlaid with a semi-transparent blue filter.

# **4. Assessment and certification in practice**



**Steps within the Design for Recycling Assessment:** More information can be found in the official document on the method.

1. Suitability: Y/N	A / F
2. PRE recycling stream: Y/N	A / F
3. Sortability (% sorted)	Deduction based on sorting efficiency
4. Recyclable plastic content	Deduction based on recyclable weight share
5. DfR Incompatibilities	Deduction based on scoring table
6. REACH Compliance	A / F

Shampoo bottle



**Info needed:** Packaging type and packaging specification incl. the weight share (wt%) of used polymers, all information concerning used materials



**(Potential) practical tests:** Sorting test, floatation of PO-components, weighing, measuring

## Verify Criterion 1: Suitability

As a first step in the assessment the suitability of the packaging to be tested via the RecyClass recyclability assessment is verified. This step is conducted before the setup of the assessment and before certification codes are communicated by RecyClass.

✓	Does your packaging consist predominantly of plastic by weight (i.e., more than 50%)?
✓	Does the surface of your packaging consist of at least 50% of plastic?
✗	Is there an aluminium layer, e.g., in a multilayer film thicker than 5 µm, or an aluminium label/sleeve which the user cannot remove when opening the packaging?
✗	Does your packaging have a surface with a colour containing non detectable carbon black?
✗	Will or is your packed good considered as a Plant Protection Product or Biocidal Product as defined in the Plant Protection Products Directive (No 1107/2009) and Biocidal Product Regulation (No 528/2012)?
✗	Is your packaging containing bio- or oxo-degradable plastics?



Packaging is suitable for analysis




Result: Intermediate class **A**

# Verify Criterion 2: PRE stream availability, starting from Class A

Packaging with a PRE recycling stream in place, meaning that **collection, sorting and recycling are established and functioning at least in one European Country**. Recycling pathways recognized by Plastics Recyclers Europe (PRE) are PET-bottles, PET trays, PE films, PP films, PE containers, PP containers, PE and PP crates & pallets, Polyolefin-based pots, tubs & trays.

Reference point is the **main body / main material** of the packaging.

Component type	Raw material	Weight (g)	Weight (%)	Component basis colour
Bottle	PE-HD	26,2	69,89%	white

HDPE natural containers	PE natural flexible films	PO thermoforming
HDPE coloured containers 	PE coloured flexible films	PET transparent clear bottles
PP natural containers	PP natural flexible films	PET transparent coloured bottles
PP coloured containers	PP coloured flexible films	PET transparent clear trays

PRE stream for the packaging is in place

➡

Result: Intermediate class A

## Verify Criterion 3: Sortability, starting from Class A

Plastic packaging can be sorted into a polymer stream according to the state-of-the-art technology available in Europe. The RecyClass Sorting Protocol must be applied **in the following cases, in which sorting can be negatively affected**:

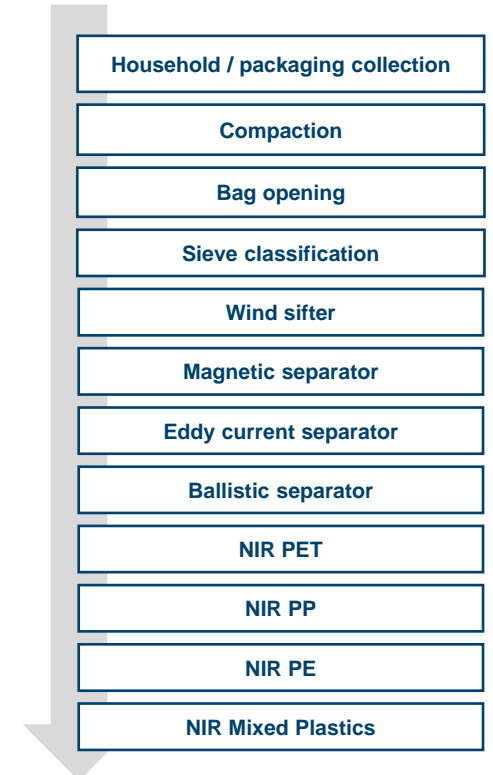
✗	Large labels (covering > 50% of the surface) made from a different polymer
✗	Full body sleeves
✗	Perforated full body sleeves
✗	Multi-layer structures (excluding PE/PP EVOH)
✗	Metallisation (excluding on the inside/in the middle layer)
✗	Non NIR detectable colours on the packaging (i.e. when dark colours used for internal layers)
✗	Different types of plastic used on front and back sides
✗	Different types of plastic (rigids and flexibles) used in the packaging
✗	Ferro magnetic components
✗	Round shape, very rigid and hard to compact

Sorting protocol is not applied



Result: Intermediate class A

Flowsheet of the sorting process



## Verify Criterion 3: Sorting Protocol



<b>&gt;70%:</b>	<b>-0 class</b>
<b>50-70%:</b>	<b>-1 class</b>
<b>30-50%:</b>	<b>-2 classes</b>
<b>&lt;30%:</b>	<b>class F (disqualified)</b>

## Verify Criterion 4: Recyclable Plastic Content, starting from Class A

The design compatibility process is carried out to establish the amount of recyclable plastics in the packaging and its ability to replace virgin plastics in new products. Any non-recoverable (non-plastic) materials must be considered and removed from the proportion of recyclable plastics. The class ranking to consider is the following: **A: > 95%**; **B: 90-95%**; **C: 70-90%**; **D: 50-70%**; **E: < 50%**.

Product name	Shampoo Bottle				
Certification Code	XXX-XXX-XX				
Component No.	Component type	Raw material	Weight (g)	Weight (%)	% of non-recoverable materials
1	Bottle	PE-HD	26,2	69,89%	-
	White Masterbatch	50% PE	0,74	1,97%	0,985%
3	2K-Closure lower part	PP	6,1	16,27%	-
	2K-Closure upper part	PE-HD	3,2	8,54%	-
	White Masterbatch	50% PE	0,05	0,13%	0,065%
4	Label front	PE	0,4	1,07%	-
5	Label back	PE	0,6	1,60%	-
6	Adhesives	-	0,1	0,27%	0,27%
7	Inks	-	0,1	0,27%	0,27%
Total			37,49	100%	1,59%

**100% weight**



- **1,59% non-recoverable materials**

**98,41% recyclable plastics**



**Result: Intermediate class A: > 95%**

## Verify Criterion 5: DfR Incompatibilities, starting from Class A (> 95%)

Attributes (# parameter values)	Parameter values	Effect on Assessment	Effect on Recyclability Dimensions
General disqualifiers (6)	No deduction		
Main material (4)	PP content at 6,1%	>4% and <10% = -1 class	<div>Recycling </div> <div>Use as raw material </div>
Size (2)	>5 cm compacted, no deduction		
Sorting (4)	No deduction		
Colours (3)	No deduction, no value applicable		
Barrier (6)	No deduction, not present		
Laminating adhesive (2)	No deduction, not present		
Masterbatch (1)	Non-PE content at 1,05%	No class deduction	
Additives (1)	No deduction, not present		
Closure Systems (5)	PP (reference to main material)	-1 class, no further class deduction	
Liners, Seals and Valves (10)	No deduction, not present		
Labels (10)	No deduction since PE		
Sleeves (10)	No deduction, not present		
Tamper Evidence Wrap (1)	No deduction, not present		
Adhesives, non-recyclable (3)	0,27%	No class deduction	
Inks, non-recyclable (3)	0,27%	No class deduction	
Direct Printing (1)	No deduction, not present		
Other components (4)	No deduction, not present		

**Result: Intermediate class B**



## Verify Criterion 6: Easy-to-Empty Index, starting from **B**

Packaging has to be easily accessible and emptied to allow minimization of the contained residues in the recycling stream. The presence of product residues on the packaging is evaluated by emptying and weighting 10 times the packaging and applying the formula:

$$Ete_i = \left( \frac{Pe - W}{Pf} \right) \times 100$$

Pf = Declared net weight of content (g)	W = Weight of a fully empty packaging (F)	Pe = Average weight of empty packaging after normal use	Ete
260	37,49	45,20	2,97
260	36,49	51,10	5,62
260	37,49	42,10	1,77
260	38,49	40,60	0,81
260	37,45	46,00	3,29
260	37,20	47,50	3,96
260	37,30	48,00	4,12
260	37,69	46,20	3,27
260	37,50	45,30	3,00
260	37,80	44,10	2,42
260,00	37,49	45,61	3,12



**Ete < 5, no deduction**



**Result: Class **B****

# Preparation of the audit report, issuing the certificate with reference to the use of claims

## Class



**CLASS A:** The package does not pose any recyclability issues and it can potentially feed a closed-loop scheme to be used in the same application.

**CLASS B:** The package has some minor recyclability issues and could even potentially feed a closed loop scheme.

**CLASS C:** The package has some recyclability issues that affect the quality of its final recycle.

**CLASS D:** The package has some significant design issues that highly affect its recyclability.

**CLASS E:** The package has major design issues that put in jeopardy its recyclability.

**CLASS F:** The package is not recyclable either because of fundamental design issues or a lack of specific waste stream widely present in the EU. If your package obtains this class in one of the question areas, then the analysis is completed.

## Logo



**Logo with certification code**

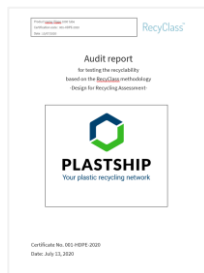
List of "permitted" statements

Link to national collection systems

OPTIONAL: Recommendations for disposal

**UNDER REVISION (public consultation open until 1<sup>st</sup> March 2021)**

## Report



**Full documentation** of all test steps

Explanations and statements on optimization

Signed PDF, 10-16 pages

OPTIONAL: further considerations, analyses and benchmarks

## Certificate



The certificate is valid for **3 years** and guarantees that the packaging is intended for recycling in Europe. Any change in packaging design must be communicated in order to revise the recyclability of the packaging if necessary.

Thank you very much for your attention.



**Andreas Bastian**

Managing Director

+49 6126 589 80 12

[bastian@plastship.com](mailto:bastian@plastship.com)

# How Essity drive packaging recyclability

Experiences and learnings



**Anna Körner**

Senior Environmental Specialist  
Sustainability Products & Services  
Global Brand, Innovation & Sustainability





## A Leading Global Hygiene and Health Company

with the vision "Dedicated to improving well-being through leading hygiene and health solutions"





# Essity

- Essity develops, produces, markets and sells **personal care, consumer tissue and professional hygiene products and services**
- Sales are conducted in approximately **150 countries** under the globally leading brands **TENA and Tork**, and other strong brands, such as **JOBST, Leukoplast, Libero, Libresse, Lotus, Nosotras, Saba, Tempo, Vinda and Zewa**
- #1 or #2 positions in about 90 countries
- Approximately 46,000 employees
- Net sales in 2019 amounted to approximately SEK 129bn (EUR 12.2bn)
- The headquarters is located in Stockholm, Sweden
- Essity is listed on Nasdaq Stockholm



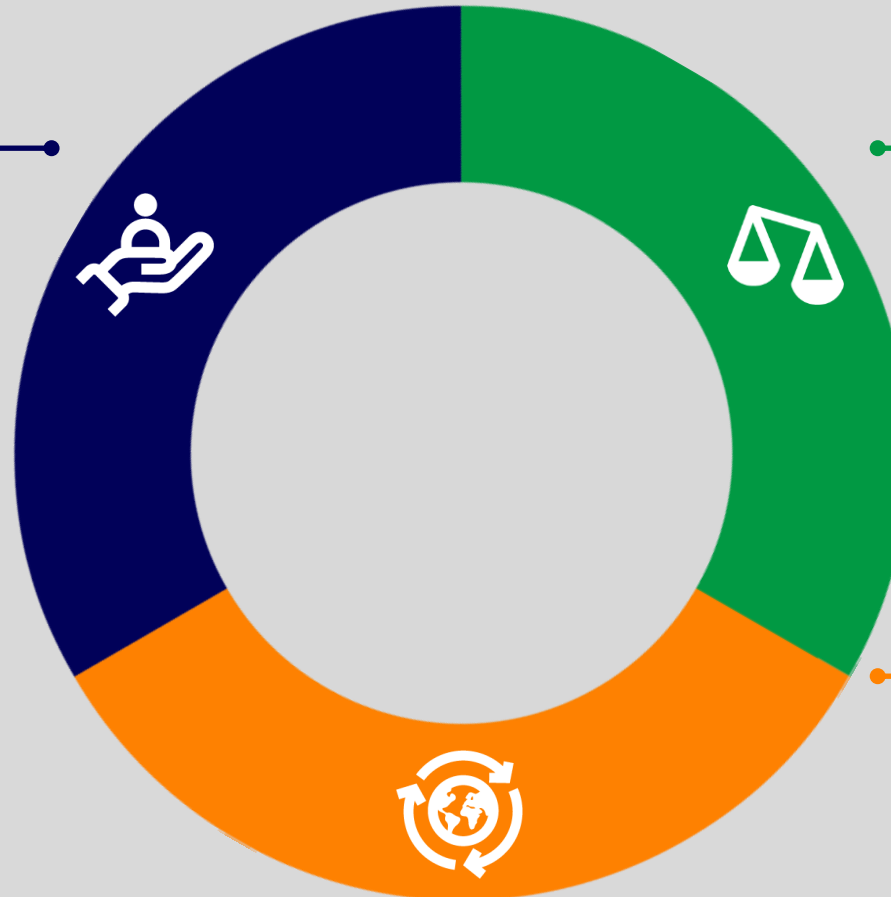
# Essity Sustainability Platforms

## Well-being

Caring and daring to act boldly on social issues that others fear to champion

### Ambition:

Improve well-being of people every day



## More from less

Building value using less by enabling behaviors that support sustainable consumption

### Ambition:

Better solutions with lower environmental footprint

## Circularity

Aiming to design products and services that fit into a circular society



# Sustainable Packaging



## Circularity

By 2025 Essity work towards 100% recyclability and 85% renewable or recycled materials in our packaging.

Outcome 2019

**68%**  
renewable and recycled materials

# Plastic Initiative: "A Line in the Sand"



An **Ellen MacArthur Foundation** launched Global Commitment to eliminate plastic waste at source



## Circularity

Essity is committed to by 2025:

- Work towards **100%** recyclability of plastic packaging
- Use **25%** recycled plastic in our plastic packaging
- Reduce unnecessary packaging

# Essity packaging target



2019

Define recyclability & measuring methods

Determine baseline

Define improvement areas and way forward

Define internal follow up processes

Educate

Improve where needed

2025

All packaging recyclable

# Define measuring method

## Measuring packaging recyclability

- Looked for a **transparent, robust** and preferably also **globally harmonized** way to measure and communicate packaging recyclability
- For **plastic packaging**, the RecyClass design-for-recycling guideline showed potential to fulfill this
- In 2019 we decided to join the RecyClass platform and start using the **RecyClass design-for-recycling** guideline for measuring the technical recyclability of plastic packaging.



# Using the RecyClass guideline criteria/tool

- Online self assessment tool **easy to use**
- **Expert support** from RecyClass available when needed
- Ambition to **harmonize criteria** and guidelines across Europe and North America
- Good having a scale (**RecyClass A-F**) for measuring stepwise improvement





# Communicating packaging recyclability externally

- **High attention** and interest of packaging recyclability from external stakeholders
- Essity want to encourage **recycling** of our packaging.
- **Third party verification/certification** secure the credibility of our external recyclability communication
- **Parts of the assortment design-for-recycling certified**
- Can refer to the certificates in external communication but **RecyClass label/logo** has not been used in our communication so far.



# RecyClass Certification

## Experiences and learnings

### ➤ We now have experience from:

- Certifying **small, medium and large** (covering many hundred articles) packaging families.
- Working with **two different auditors**

### ➤ Learnings:

- Collaboration with auditors **work well**. Consistent rating of the packaging but slight differences in reporting format and cost.
- Certification and certificate maintenance process **works smoothly for single packaging and small, static packaging families**.
- We see the need for establishing more **pragmatic ways** to handle certification and certificate maintenance for large and dynamic packaging families.



# Conclusion

- **Packaging target**
  - High commitment within Essity to secure and encourage packaging recyclability
- **RecyClass design-for-recycling guidelines**
  - Transparent and harmonized way for measuring technical recyclability of plastic packaging





RecyClass

RecyClass Unwrapped

## Questions & Answers session

*Use the Q&A box on the top-right corner of your screen*







# Thank you for participating!

### **Next webinars:**

07 April 2021: Recyclability & Recycled Content Claims

28 April 2021: Scientific testing with RecyClass – Protocols explained

26 May 2021: Plastic packaging decorations

23 June 2021: Recyclability of personal care packaging

More information on [www.recyclclass.eu](http://www.recyclclass.eu)