



ALDI International Recyclability Guidelines

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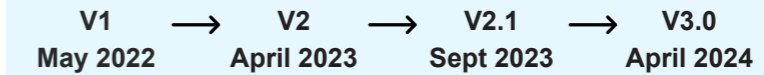


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Revision History



Version	Chapter / Part	Change description
V2	Restructure introduction of Packaging Material Guide	Rename and restructure of introduction chapter "How to Read and Apply Packaging Material Guide" (former chapter "Basics and quick overview")
V2	Restructure part of Packaging Material Guide	Change from Infrastructure overview to ALDI's Acceptance Overview per packaging format
V2	New chapter - Highlighted packaging formats	New chapter integrated for Packaging Material Guide for providing further information on special packaging formats
V2	New chapter - Currently not accepted and non-recyclable packaging formats	New chapter integrated for Packaging Material Guide for providing an overview of currently not accepted packaging formats by ALDI
V2	Update and renamed Eco-modulation in individual countries	Updates to content of "Eco-modulation in individual countries" (former "Incentives in individual countries")
V2.1	Packaging Material Guide - PET Others (4.3)	Adjustments to DfR requirements based on technical developments in the market and to facilitate better understanding
V3.0	General content update	Updates to Acceptance Overviews and DfR Guides and eco-modulation in individual countries
V3.0	Country specific table for national specific DfR specifications and /or deviations	Introduction of country specific table within DfR Guide to introduce and link national specific DfR specifications and deviations



1 Preface

Packaging is an indispensable part of our everyday lives. It ensures product quality and safety; it protects products during transport and serves as a medium of communication. However, the production of packaging requires varying amounts of raw material usage, energy, and water consumption. Therefore, support from policymakers to guide the industry in its transition to circularity is needed.

The growing demand for sustainable packaging and a reduction of raw material usage poses a central challenge for all retailers and brand owners. Both the ALDI Nord and ALDI SOUTH Groups (hereinafter referred to as "ALDI") will use their ALDI packaging strategies to further promote the necessary expansion of circular economy and support the projects of global and/or national organisations (e.g. Plastic Pacts), legislative bodies (e.g. European Parliament) and industry associations (e.g. APCO).

ALDI have set ambitious targets for packaging material reduction, recyclability, and recycled content in plastic packaging. To achieve these goals, all ALDI own-brand packaging, (provided by a wide range of national and international suppliers) needs to be designed for recycling. By developing a set of recyclability guidelines, ALDI is fulfilling the need to create transparency on an international basis. The Guidelines **recommend packaging solutions** to buyers for different markets, **facilitates the assessment** of compliance with sustainability criteria, presents the criteria for packaging optimisation and will **simplify communication within the supply chains**.

"ALDI's International Recyclability Guidelines" were created by ALDI Nord and ALDI SOUTH in a cooperation with the Institute cyclos-HTP (CHI) to drive our industry forward and enable a sustainable transition for ALDI's packaging supply chain to circularity.



2 How does ALDI define recyclability?

The term "recyclability" is very broadly defined and is often interpreted differently in the ALDI countries. In this set of guidelines "recyclability" means **conformity of the packaging design with the requirements of existing recycling processes**. This is an environmentally relevant property which can only be claimed under competition law if recycling structures (including the necessary collection systems) are in place. The packaging can be **diverted from the waste stream** through available processes by **collection, processing and returning to use** in an industrial scale in the form of high quality raw materials (recyclates).

This document focuses on recycling processes that **generate secondary raw materials**, which can replace the corresponding primary raw material, for example the recycle application replaces **material-identical virgin material**. The components of packaging that are suitable for this are identified using a clear and easy to understand colour coding (green-amber-red) system. Therefore for each type of packaging "**recyclable components**" (green) are classified in a separate category and differentiated from other characteristics, which are only grouped under the aspect of compatibility (amber).

The Guidelines only consider mechanical recycling processes. Other processes, such as chemical recycling and new developments accompanying it, are closely monitored by ALDI.

The Guidelines only refer to the topic of recyclability. Further aspects of ALDI's circular packaging approach, such as compostability or reusability are not within the scope of the Guidelines.

2.1 Oxo-and biodegradable plastics

Oxo-degradable plastics are defined by the European Committee for Standardisation (CEN) as polymers which have been chemically modified to precipitate the oxidation and fragmentation of the material through oxygen, UV light and/or heat. The fragmented pieces cannot be further decomposed by microorganisms leading to the formation of microplastics. The use of oxo-degradable and oxo-biodegradable plastics have been pronounced as an unsustainable interference in the circular economy, by the Ellen MacArthur Foundation. ALDI does not accept the use of oxo-degradable or oxo-biodegradable materials in packaging.

Biodegradable plastics can be converted by microorganisms into carbon dioxide, water oxygenation into carbon dioxide, water, mineral salts and biomass with oxygenation. Without oxygenation, the material is converted to carbon dioxide, methane, mineral salts or biomass within an unspecified timeframe.

Compostable plastics are bio-based materials that will degrade in either industrial compost facilities or at home in the natural environment. Unlike biodegradable plastics, compostable plastics degrade in the environment and provide nutrients to the soil within a specified timeframe.

The Guidelines consider only mechanical recycling, therefore, biodegradable and compostable plastics are not considered recyclable in the sense of the Guidelines. Organic recycling is not a high quality recovery, no recycling path exists for biodegradable materials and decomposition processes can interfere with the high-quality recycling of other plastics.

Bio-based plastics, or so called "**drop-in plastics**" made from agricultural plants or waste, such as **bio-based PET, bio-based PE** or **bio-based PP** are accepted by ALDI as they are deemed chemically identical to their fossil-based counterparts. Recyclability of these bio-based polymer types depends on the same considerations as their fossil-based counterparts; refer to these within the Material Guide in order to assess the availability of infrastructure in each ALDI country.



3 How to read and apply the Packaging Material Guide

Chapter 3.1 explains how to read and use the Acceptance Overview, which refers only to primary/sales packaging. Chapter 3.2 explains how to read each Design-for-Recycling (DfR) Guide. Chapter 3.3 introduces packaging **features that influence recyclability** which are analysed in the DfR Guides. Each packaging feature is described, with an additional overview of basic do's and don'ts for design.

Chapter 4 "Packaging Material Guide" evaluates the most common packaging formats (4.1 - 4.13). Each of these packaging format encompasses:

1. The Acceptance Overview
2. DfR-Guide

Chapter 4.14 highlights and addresses certain packaging formats, which need to be considered separately due to their special appearance. Chapter 4.15 summarises packaging materials and formats which are not accepted from a recyclability point of view.



3.1 How to read the Acceptance Overview

The acceptance overview outlines whether certain packaging formats are accepted/not accepted in each ALDI Nord and ALDI SOUTH operating country. An illustrative summary of the information provided is included below:

	ALDI Nord										ALDI SOUTH																			
Packaging type																			<small>Only Shanghai</small>											
	 Packaging accepted due to: <ul style="list-style-type: none"> • Available infrastructure • Infrastructure developments 										 Packaging preliminarily accepted due to: <ul style="list-style-type: none"> • Unclear/early staged infrastructure developments • Unclear market conditions • No alternative packaging format available Preliminary acceptance is subject to change. Where possible, accepted packaging indicated with a green tick (✓) is always preferred.										 Packaging not accepted due to: <ul style="list-style-type: none"> • No available infrastructure • No infrastructure developments Packaging must be changed to an accepted format. If this cannot be achieved, suppliers must contact the respective ALDI buying team. Where possible packaging with a green tick (✓) are preferred.									
	Symbol is displayed either once for all countries or individually for each country.																													
	The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in Annex I.																		Where packaging is accepted (✓ or ~) this statement is provided.											
	...																		To provide further background information on the symbol displayed, additional explanations can be provided.											
	Insight on country-specific mesh sizes used for screens for fine particle separation. In practice packaging formats are recyclable above the listed mesh size (Impact on recyclability explained in Annex II "Essential technical facts and physical properties that influence recyclability").																													

ATTENTION: As stated in ALDI's definition of recyclability, packaging formats can only be determined as recyclable when the packaging infrastructure (collection, sorting and recycling) is actually available. Additionally Design-for-Recycling recommendations must be followed. In some cases, materials are accepted or preliminarily accepted, despite a lack of collection, sorting or recycling infrastructure. Please always refer to the Acceptance Overview.



3.2 How to read the Design for Recycling (DfR) Guide


To develop ALDI's Guidelines for suppliers and purchasing departments, all relevant DfR guidelines and recyclability assessment standards were evaluated. The aim was to create **the greatest possible overlap of a harmonised international standard** and to primarily consider the **physical recyclability based on scientifically founded knowledge (DfR Guide)**. However, a separate table has been created that acknowledges country specific DfR specifications and/or deviations.

How to understand the country-specific DfR specifications/ deviations:

	Explanation:
EPR related specifications	Provided where EPR system requirements are stricter or more specific than the DfR guide and/or lead to higher costs
National labelling systems specifications/deviations	Provided where national labelling design specifications dictate a reduction of recyclability and incompatibility for recycling or where national packaging collection systems excludes certain packaging designs
National technological specifications/deviations	Provided where recycling technologies lead towards deviating design specifications causing a reduction of recyclability and incompatibility for recycling

The table uses country flags and numbers to link each country-specific DfR element to a DfR feature in the respective DfR Guide.

For example:

2  Colored plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)

Only transparent colouring: clear and light-blue colours are preferred (highest economic value).

Opaque PET-bottles are not recycled and are rejected as waste. In addition to this, opaque bottles are considered in many countries as recycling-disruptive packaging.

2 

1 



How to understand the respective Design for Recycling (DfR) Guide:


The classification of the packaging in the DfR-Guide is based on the 3 main groups of packaging components:

- **Body** (including material type, colour, additives and barriers)
- **Closure** (including material type, seals, function closures with special features, if applicable)
- **Decoration** (including labels/sleeves, printing inks, adhesives).

Colour codes showing the degree of recycling compatibility:

The components of a packaging that are suitable for recycling purposes are identified in the Guidelines for each type of packaging as "recyclable components" and differentiated by a green colour coding from other characteristics that are grouped with limited recycling compatibility (amber) or with no recycling compatibility (red).





Key:

			
"Best case design" (recyclable components)	Reduction of recyclability but compatible for recycling	Reduction of recyclability with limited recycling compatibility	Reduction of recyclability and incompatible for recycling
Explanation: Listed materials shall be evaluated as recyclable (valuable) material.	Listed materials are compatible for recycling, however those components reduce recyclability .	Listed materials cannot be separated by established recycling steps, but they have only a negligible impact on recycle properties. Those components should be avoided or minimised .	Listed materials cannot be separated by established recycling processes and degrade the quality of the recycles up till uselessness. If a packaging contains one of the components listed in the red column the packaging is not recyclable .







To a certain extent, the Guidelines represent an intersection of the most important DfR standards and recyclability assessments. It should be noted that national procedures concerning the assessment of recyclability may differ.



3.3 Quick overview of packaging features

PACKAGING FEATURES	DESCRIPTION	DOS	DONT'S
 Material	Ideally, the main material type of a packaging determines the recycling path. Packaging should generally be made of mono-materials of the same material type as far as possible. If several materials are used, they should be easily separable from each other in the recycling process.	<ul style="list-style-type: none"> use mono materials. if several materials are used, these should be structured in such a way that on opening they already separate into mono material components by design. 	<ul style="list-style-type: none"> avoid wet strength papers in fibre-based packs. avoid use of PFAS. It is expected that perfluorinated and polyfluorinated alkyl substances, also known as PFAs or “forever chemicals”, will be banned from food contact packaging (draft amendments to the PPWR).
 Colours	Non-pigmented materials are preferred. The colour of the packaging for plastic could have a direct influence on its sortability (detectability) and sometimes on the economic value of the recyclate produced from it. In any case, for plastics and paper, NIR detectability must be guaranteed.	<ul style="list-style-type: none"> use non-pigmented materials. use NIR-detectable pigments for colouring. 	<ul style="list-style-type: none"> avoid soot-based pigments “carbon black” (if only used in inner layers, NIR testing is required). avoid opaque colours for PET-bottles and -containers. avoid opaque coatings for glass (light transmission must be guaranteed). avoid colours containing components of the EuPIA exclusion list.
 Barriers/Coatings	Packaging barriers protect the contents from the penetration and migration of oxygen, water vapour and UV light and are an important functional component.	<ul style="list-style-type: none"> choose recycling compatible barrier materials (for more detailed information see DfR-Guide). 	<ul style="list-style-type: none"> avoid barrier material that risk the recyclability of the main material.
 Adhesives	Adhesives are needed for sealing or to bind several components or layers together, such as multiple film layers or labels on bottles and films. Adhesives should be minimised, labelling adhesives should be easily and completely removable.	<ul style="list-style-type: none"> use should be minimised (spot adhesions). use of material identical IML (welded, no adhesive needed). labelling adhesives should be easily and completely removable in the recycling process. 	<ul style="list-style-type: none"> avoid full-surface adhesions. avoid hot-melt adhesives for fibre-based packaging that cannot be separated due to the size and thickness of the application.
















PACKAGING FEATURES	DESCRIPTION	DOS	DONT'S
 Sleeves/Labels	When using labels and sleeves, make sure that the main body material of the pack is still recognised. When different materials are used, they should be easy to separate from each other in the recycling process.	<ul style="list-style-type: none"> use small labels. make sure that the main body of the material is still recognised. easy separation must be ensured. 	<ul style="list-style-type: none"> avoid adhesive paper labels or plastic labels that cannot be removed.
 Printing/Inks	When using printing inks, the EuPIA good manufacturing practice “GMP” must be considered, which assists in controlling food safety hazards in the design and manufacture of inks, varnishes and coatings designed to be printed onto Food Contact Materials. Requirements for direct printing bans and bleeding inks must be observed.	<ul style="list-style-type: none"> use of inks should be minimised. 	<ul style="list-style-type: none"> avoid inks that bleed. avoid inks containing components of the EuPIA exclusion list. > 50% fully printed black (including background) using soot-carbon-based pigments should be avoided Glass shares with a level of transmission of less than 10 % in a 400 nm to 780 nm wave range (due to varnishing or tinting) should be avoided
 Additives	Additives are added to plastics to improve certain material properties or to facilitate processing. Only additives that are compatible with recycling (such as thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) should be used.	<ul style="list-style-type: none"> recycling compatible additives should be used (for more detailed information see DfR-Guide). the general density must be respected*. 	<ul style="list-style-type: none"> avoid the use of dense fillers without respecting the overall blend density (see annex II). avoid bio/oxo/photo-degradable, as well as nano-composite materials.
 Functional closures	This includes, for example spray heads, dosing aids, spouts and zippers. If possible, these should be made of the same material as the body of the pack. Components that reduce recyclability or make recyclates unusable must be avoided.	<ul style="list-style-type: none"> use same material as the body of the packaging. where other materials cannot be avoided, the closure should be easily separable and compatible with recycling. 	<ul style="list-style-type: none"> avoid metals together with PET. avoid non-separable silicone components.
 Seals	Seals are designed to be recyclable, usually in such a way that they can be easily separated from the material of the packaging body; the same applies to security seals.	<ul style="list-style-type: none"> to be easily separated. use same material as the body of the packaging. 	
 Seals	Seals are designed to be recyclable, usually in such a way that they can be easily separated from the material of the packaging body; the same applies to security seals.	<ul style="list-style-type: none"> to be easily separated. use same material as the body of the packaging. 	

* Impact on recyclability explained in Annex II „Essential technical facts and physical properties that influence recyclability“.



4 Packaging Material Guide

It is not possible to include all packaging formats used in all countries. Thus, the Recyclability Guidelines consider the most common packaging formats:

<p>PET-bottles transparent (clear and light blue) Page 14</p>	<p>Beverage bottles  Non-beverage bottles </p>
<p>PET-bottles coloured (transparent, other colours & opaque) Page 18</p>	<p>Beverage bottles  Non-beverage bottles </p>
<p>PET others Page 22</p>	<p>Cups  Pots/trays/blisters </p>
<p>PE packages (rigid) Page 26</p>	<p>Bottles  Cups  Pots/trays  Buckets/canisters/jugs </p>
<p>PP packages (rigid) Page 30</p>	<p>Bottles  Cups  Pots/trays  Buckets/canisters/jugs </p>
<p>PS packages (rigid) Page 34</p>	<p>Bottles  Cups  Pots/trays  Buckets/canisters/jugs </p>
<p>PE-based films (flexibles) Page 38</p>	<p>Pouches  Tubes </p>

PP-based films (flexibles)
Page 42

Pouches



Tubes



Liquid packaging boards
Page 46

Liquid packaging boards



Tinplate
Page 50

Cans



Aluminium
Page 54

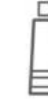
Cans



Trays



Tubes



Paper-based packages
Page 58

Folding boxes



Bags/pouches



Composites



Glass
Page 62

Bottles



Jars

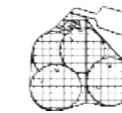


Highlighted packaging formats
Page 66

Coffee capsules



Nets



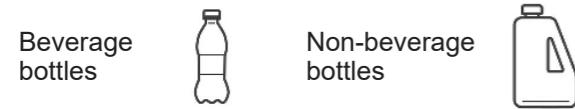
Currently not accepted and non-recyclable packaging materials/formats
Page 68

Packaging materials/formats listed in chapter



4.1 PET-Bottles transparent

Examples:



4.1.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓																			
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			
	<p>From 2024 onwards, the tethering of the closure (according to Article 6, 2019/904/EC) must be ensured for the period of intended use for beverage containers up to 3 litres. This applies for countries of the European Union. However, tethered closures should be considered as best practice</p>																			

Country specific mesh sizes

In practice recyclable above ... mm																				
	40	50	40	50-60	20/<60	80	50	20	50	50	50	40	n.a.	20-30	65	15-100	50	-	-	
	<p>Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.</p> <p>If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.</p>																			

4.1.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Plastic bottles covered by a sleeve that is of at least 70% consisting of different material than the bottle and is not perforated, is to be banned in the future; the same applies for bottles less than 50cl covered at 50%
2		Colored plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
1		Penalties for large non-PET-labels (Exceptions are made for forcibly removable labels or zipper with legend: "separate me" or other equivalent text that encourages separation or removal)
1		Penalties for bottles, flasks and other rigid plastic packaging that cannot be detected by optical sorting containing carbon black
2		Penalties for PET-bottle/vial combined with aluminium or silicone elements (with density > 1 g/cm³)
3		Penalties for bottles combined with aluminium, PVC or silicone with d > 1 or containing glass balls
4		Penalties for bottles and dispenser bottles with an unperforated Sleeve (PET-G, PLA or PS)
5		Penalties for opaque PET-bottles with mineral fillers > 4%
1		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials
1		Crushed dimensions of these packaging types shall not exceed 231 mm in two dimension (PREP)
2		Avoid labels and sleeves that cover more than 40% of surface area (PREP)
1		Avoid labels and sleeves that cover more than 40% of surface area (OPRL)
1		Avoid non detachable labels/sleeves made out of a different polymer than the bottle that cover more than 40%-60% of the total surface area - 40% being best practice (OPRL)
1		Steel is considered incompatible without differentiation (ferrous/non-ferrous)
2		Paper labels are considered as disruptive and therefore not compatible for recycling

Key:

■ EPR related specifications
 ■ National labelling systems specifications/deviations
 ■ National technological specifications/deviations



Design-for-Recycling Guide for PET-bottles transparent (clear and light blue)



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

Body		Country specifics
	<ul style="list-style-type: none"> PET-A is used for the bottle body. 	1
	<ul style="list-style-type: none"> Only transparent colouring: clear and light-blue colours are preferred (highest economic value). Opaque PET-bottles are not recycled and are rejected as waste. In addition to this, opaque bottles are considered in many countries as recycling-disruptive packaging. 	2 1
	<ul style="list-style-type: none"> No barriers are used (common for water and soft drinks). Clear plasma coatings (SiOx, AlOx-Barriers) are compatible for PET-bottle recycling. External coatings and PA-Barrier-Layers show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are EVOH and PA-Blends. 	
	<ul style="list-style-type: none"> Only compatible additives, such as clarifiers, are used. UV stabilisers, AA blockers and nano-composites show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are bio-/oxo-/photodegradable additives 	5



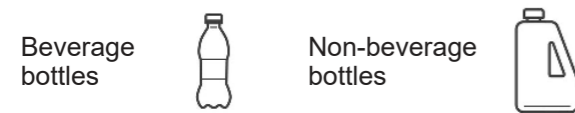
Closure		Country specifics
	<ul style="list-style-type: none"> Caps materials with a density < 1 g/cm³ are used: PP, PE-HD. TPE show a limited recycling compatibility. Components of non-ferrous steel, aluminium and silicone (density > 1 g/cm³) cannot be separated by established recycling processes. Bottles with metal components are kept out of the recycling stream. Typically, the whole bottle is removed. 	2 3 1
	<ul style="list-style-type: none"> Seals are made from the same material as the caps: PP, PE-HD. The use of silicones with a density < 1 g/cm³ should be avoided. Not compatible with recycling and strictly to be avoided are PVC, aluminium and silicones (silicones with a density > 1 g/cm³). 	
	<ul style="list-style-type: none"> All components of functional closures are made of PP, PE-HD. PE-LD components are compatible for PET-bottle recycling. Not compatible with recycling and strictly to be avoided are glass components, metal springs, ball bearings, valves containing silicone, plastic components with density > 1 g/cm³ (e.g. POM). 	2 3 1

Decoration		Country specifics
	<ul style="list-style-type: none"> No direct printing. Inks on Sleeves and Labels are compatible for recycling, if they follow the EuPIA GMP (Good Manufacturing Practices); compliant for materials and articles intended to come into contact with food. Not compatible with recycling are direct printing (date coding is excluded here) as well as inks that bleed, both lead to discolouration. 	
	<ul style="list-style-type: none"> Unnecessary decorations should be avoided. Labels made of PE-HD, PE-LD, PP, OPP, paper, with less than 70% coverage on face or designed on proof in a way that the bottle polymer can be identified. Not compatible with recycling and strictly to be avoided are PVC and metallised labels, as well as PET-G- and PS-labels/ or -sleeves. 	1 1 1 1 4 1 2 2
	<ul style="list-style-type: none"> Wash-off adhesives (alkaline) are compatible at temperatures from 60 to 80°C (hot washing). Not compatible with recycling and strictly to be avoided are adhesives not removable in alkaline at 80°C. 	



4.2 PET-bottles coloured (transparent & opaque)

Examples:



4.2.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
 Beverage bottle (coloured transparent)	✓																			
 Non-beverage bottle (coloured transparent)	✓																			
Packaging type																				
 Opaque bottles	✗																			
	From 2024 onwards, the tethering of the closure (according to Article 6, 2019/904/EC) must be ensured for the period of intended use for beverage containers up to 3 litres. This applies for countries of the European Union. However, tethered closures should be considered as best practice																			

Country specific mesh sizes

In practice recyclable above ... mm																				
	40	50	40	50-60	20/<60	80	50	20	50	50	50	40	n.a.	20-30	65	15-100	50	-	-	-
	Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.																			
	If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.																			

4.2.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Plastic bottles covered by a sleeve that is of at least 70% consisting of different material than the bottle and is not perforated, is to be banned in the future; the same applies for bottles less than 50cl covered at 50%
2		Colored plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
1		Penalties for opaque bottles (except white): mineral filler > 4% in bottles, jars and rigid plastic: 100% (penalized fee)
2		Penalties for use of glass beads in bottles and jars: 50% (penalized fee)
3		Penalties for multimaterial bodies including EVOH >= 5 %
4		Penalties for large non-PET-labels (exceptions are made for forcibly removable labels or zipper with legend: "separate me" or other equivalent text that encourages separation or removal)
5		Penalties for PVC, rubber, silicone or metal accessories (if they are not forcibly removable or contain a legend that they must be removed to consume the product)
1		Penalties for opaque PET-bottles with mineral fillers > 4%
2		Penalties for bottles and dispenser bottles with an unperforated Sleeve (PET-G, PLA or PS)
3		Penalties for bottles combined with aluminium, PVC or silicone with d > 1 or containing glass balls
1		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials
1		Crushed dimensions of these packaging types shall not exceed 231 mm in two dimension (PREP)
2		Avoid labels and sleeves that cover more than 40% of surface area (PREP)
1		Avoid non detachable labels/sleeves made out of a different polymer than the bottle that cover more than 40%-60% of the total surface area - 40% being best practice (OPRL)
1		Avoid non detachable labels/sleeves made out of a different polymer than the bottle that cover more than 40%-60% of the total surface area - 40% being best practice (OPRL)
1		Steel is considered incompatible without differentiation (ferrous/non-ferrous)
2		Paper labels are considered as disruptive and therefore not compatible for recycling

Key:

EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-Recycling (DfR) Guide for PET-bottles coloured (transparent & opaque)



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

Body	Country specifics
<p>Material</p> <ul style="list-style-type: none"> ■ PET-A is used for the bottle body. 	1
<p>Colours</p> <ul style="list-style-type: none"> ■ Only transparent colouring. ■ Opaque PET-bottles are not recycled and are rejected as waste. In addition to this, opaque bottles are considered as recycling-disruptive packaging in many countries. 	2
<p>Barriers/Coatings</p> <ul style="list-style-type: none"> ■ No barriers are used (common for water and soft drinks). ■ Clear plasma coatings (SiOx, AlOx--Barriers) are compatible for PET-bottle recycling. ■ External coatings and PA-Barrier-Layers show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are EVOH and PA-Blends. 	3
<p>Fillers</p> <ul style="list-style-type: none"> ■ Only compatible additives, such as clarifiers, are used. ■ UV stabilisers, AA blockers and nano-composites show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are bio-/oxo-/photodegradable additives. 	1 1



Closure	Country specifics
<p>Material</p> <ul style="list-style-type: none"> ■ Caps materials with a density < 1 g/cm³ are used: PP, PE-HD. ■ TPE show a limited recycling compatibility. ■ Components of non-ferrous steel, aluminium and silicone (density > 1 g/cm³) cannot be separated by established recycling processes. Bottles with metal components are kept out of the recycling stream. Typically, the whole bottle is removed. 	2 5 3 1
<p>Seals</p> <ul style="list-style-type: none"> ■ Seals are made from the same material as the caps: PP, PE-HD. ■ The use of silicones with a density < 1 g/cm³ should be avoided. ■ Not compatible with recycling and strictly to be avoided are PVC, aluminium and silicones (silicones with a density > 1 g/cm³). 	
<p>Functional closures</p> <ul style="list-style-type: none"> ■ All components of functional closures are made of PP, PE-HD. ■ PE-LD components are compatible for PET-bottle recycling. ■ Not compatible with recycling and strictly to be avoided are glass components, metal springs, ball bearings, valves containing silicone, plastic components with density > 1 g/cm³ (e.g. POM). 	2 5 3 1

Decoration	Country specifics
<p>Printing/Inks</p> <ul style="list-style-type: none"> ■ No direct printing. Inks on Sleeves and Labels are compatible for recycling, if they follow the EuPIA GMP (Good Manufacturing Practices); compliant for materials and articles intended to come into contact with food. ■ Not compatible with recycling and strictly to be avoided are fully printed black (including background) using soot-carbon-based pigments whose NIR is not proven. Not compatible with recycling are direct printing (date coding is excluded here) as well as inks that bleed, both lead to discolouration. 	
<p>Sleeves/Labels</p> <ul style="list-style-type: none"> ■ Unnecessary decorations should be avoided. Labels made of PE-HD, PE-LD, PP, OPP, paper, with less than 70 % coverage on face or designed on proof in a way that the bottle polymer can be identified. ■ Not compatible with recycling and strictly to be avoided are PVC and metallised labels, as well as PET-G- and PS-labels/ or -sleeves 	1 1 4 1 2 1 2 2
<p>Adhesives</p> <ul style="list-style-type: none"> ■ Wash-off adhesives (alkaline) are compatible at temperatures from 60 to 80°C (hot washing). ■ Not compatible with recycling and strictly to be avoided are adhesives not removable in alkaline at 80°C. 	



4.3 PET others

Examples:



4.3.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			
	<p>The respective recycling infrastructure for this packaging type is currently not implemented in every country. However, ALDI has observed substantial developments on the implementation of these packaging types in its operating markets. As an important part of the circular economy value chain, ALDI wants to contribute to build up a well functioning recycling stream of these packaging formats.</p>																			

Country specific mesh sizes

In practice recyclable above ... mm																				
	40	50	40	50-60	20/<60	80	50	20	50	50	50	40	n.a.	20-30	65	15-100	50	-	-	
	<p>Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.</p> <p>If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.</p>																			

4.3.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Colored plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
1		Penalties for opaque and/or coloured trays
2		Penalties for mineral filler > 4% in bottles, jars and rigid plastic: 100% (penalized fee)
3		Penalties for large non-PET-labels (exceptions are made for forcibly removable labels or zipper with legend: "separate me" or other equivalent text that encourages separation or removal)
4		Penalties for PE layers in trays: 50 % (penalized fee)
5		Penalties for PVC, rubber, silicone or metal accessories (if they are not forcibly removable or contain a legend that they must be removed to consume the product)
1		Penalties for opaque PET-bottles with mineral fillers > 4%
1		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials
1		Crushed dimensions of these packaging types shall not exceed 231 mm in two dimension (PREP)
2		Avoid labels and sleeves that cover more than 40% of surface area (PREP)
3		Avoid opaque PET. Avoid any detectable black pigments (PREP)
4		All lidding films on PET trays/cups are deemed separate/standalone component (PREP). Therefore the component must be designed in accordance to the Design Guide of the corresponding Packaging Material Guide
5		Avoid PE sealing layers (PREP)
1		Avoid detectable black pigments (OPRL)
2		Max. 10% threshold of PE for sealing layer (OPRL)
3		Removable/Peelable lidding films on PET trays/cups are deemed separate/standalone component (OPRL). Therefore the component must be designed in accordance to the Design Guide of the corresponding packaging material guide
1		Paper labels are considered as disruptive and therefore not compatible for recycling

Key:

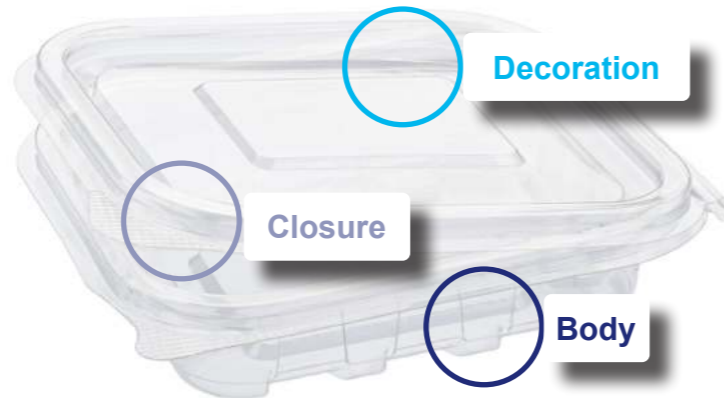
EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-Recycling Guide (DfR) for PET others



Key:

"Best case design" (recyclable components)	Reduction of recyclability but compatible for recycling	Reduction of recyclability with limited recycling compatibility	Reduction of recyclability and incompatible for recycling

Body (without lidding film)		Country specifics
Material	<ul style="list-style-type: none"> PET-A or PET-C is used for the packaging body or for snap-on lids PE-Sealing-Layer 	4 1 5 2
Colours	<ul style="list-style-type: none"> Only transparent colouring: clear and light-blue colours are preferred (highest economic value). Only carbon-black free masterbatches are used. Not compatible with recycling and strictly to be avoided is carbon black (non-NIR sortable). 	1 1 3 1
Barriers/Coatings	<ul style="list-style-type: none"> No barriers are used. Clear plasma coatings (SiOx, AlOx-Barriers) are compatible for PET recycling. External coatings, PA-Barrier-Layers, PE-Sealing-Layers show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are EVOH and PA-Blends. 	
Fillers	<ul style="list-style-type: none"> Only compatible additives, such as clarifiers, are used. UV stabilisers, Nanocomposites and oxygen scavenger show a limited recycling compatibility. 	2 1



Closure (for rigid cover and sealing/lidding film)		Country specifics
Material	<ul style="list-style-type: none"> For rigid closure/cover: PET-A, if comparable wall thicknesses, such as bottom film/tray, unprinted. TPE show a limited recycling compatibility. Components of non-ferrous steel, aluminium and silicone (density > 1 g/cm³) cannot be separated by established recycling processes. <p><i>If instead of or in addition to a rigid closure, a sealing/lidding film is used, see next section (Seals).</i></p>	5 1
Seals	<ul style="list-style-type: none"> Sealing films / Lidding films are made of mono- or multilayer films (density < 1 g/cm³). The sealing edge must either remain on the lidding film, be washable or compatible with the body material. Unprinted Mono-PET films (if applied on a PET tray) Peel structures tested for recycling compatibility are used. The use of silicones with a density of < 1 g/cm³ should be avoided. Not compatible with recycling and strictly to be avoided are printed sealing/lidding films (with a density > 1g/cm³; like printed metalized PET lids) PVC, aluminium and silicones (silicones with a density > 1 g/cm³). 	4 3
Functional closures	<ul style="list-style-type: none"> PE-LD components are compatible for PET-packaging recycling. Not compatible with recycling and strictly to be avoided are glass components, metal springs, ball bearings, valves containing silicone, plastic components with density > 1 g/cm³ (e.g. POM). 	5 3

Decoration		Country specifics
Printing/Inks	<ul style="list-style-type: none"> No direct printing. Inks on Sleeves and Labels are compatible for recycling, if they follow the EuPIA GMP (Good Manufacturing Practices); compliant for materials and articles intended to come into contact with food. Not compatible with recycling and strictly to be avoided are fully printed black (including background) using soot-carbon-based pigments whose NIR is not proven. Not compatible with recycling are direct printing (date coding is excluded here) as well as inks that bleed, both lead to discolouration. 	
Sleeves/Labels	<ul style="list-style-type: none"> Unnecessary decorations should be avoided. Labels made of PE-HD, PE-LD, PP, OPP, paper, with less than 70% coverage on face or designed on proof in a way that the packaging body can be identified. Not compatible with recycling and strictly to be avoided are PVC and metallised labels, as well as PET labels. 	3 2 2 1 1
Adhesives	<ul style="list-style-type: none"> Wash-off adhesives (alkaline) are compatible at temperatures from 60 to 80°C (hot washing). Absorbent pads are easily separable, leaving no adhesive residues on PET. Not compatible with recycling and strictly to be avoided are adhesives not removable in alkaline at 80°C. This also applies to the bonding of suction inserts in trays. 	



4.4 PE packaging (rigid)

Examples:



4.4.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓																			
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			

Country specific mesh sizes

In practice recyclable above ... mm																			
	40	50	40	50-60	20/<60	80	50	20	50	50	50	40	n.a.	20-30	65	15-100	50	-	
	<p>Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.</p> <p>If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.</p>																		



4.4.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		For plastic cans with a metal bottom or a metal top a dissuasive rate applies and the highest fee must be paid.
2		Coloured plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
1		Penalties for black colour (with carbon black): 50% (penalized fee)
2		Penalties for PE or PP with density > 1 g/cm ³ : 10% (penalized fee)
3		Penalties for multimaterial bodies including EVOH >= 5%
4		Penalties for non-PE-labels (exceptions are made for forcibly removable labels or zipper with legend: "separate me" or other equivalent text that encourages separation or removal)
5		Penalties for PVC, rubber, silicone or metal accessories (if they are not forcibly removable or contain a legend that they must be removed to consume the product)
1		Penalties for bottles and dispenser bottles that are undetectable by optical sorting
1		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials
1		Crushed dimensions of these packaging types shall not exceed 231 mm in two dimension (PREP)
2		Avoid labels and sleeves that cover more than 40% of surface area (PREP)
3		Avoid opaque PET. Avoid any detectable black pigments (PREP)
1		All lidding films on PET trays/cups are deemed separate/standalone component (OPRL). Therefore the component must be designed in accordance to the Design Guide of the corresponding Packaging Material Guide
2		Avoid PE sealing layers (OPRL)
3		Avoid detectable black pigments (OPRL)
4		Max. 10% threshold of PE for sealing layer (OPRL)
1		Removable/Peelable lidding films on PET trays/cups are deemed separate/standalone component (OPRL). Therefore the component must be designed in accordance to the Design Guide of the corresponding packaging material guide
1		Paper labels are considered as disruptive and therefore not compatible for recycling

Key:

EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-Recycling Guide (DfR) for PE packaging (rigid)

Note: There is no limit value for differentiating between flexible and rigid, as the actual classification into a fraction depends on the behaviour of the packaging. As semi-rigid packaging behaves diffusely in the separation process (sorting), classification via flexibles (i.e. according to the stricter criteria) in the guide is generally recommended.



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

Body		Country specifics
Material	<ul style="list-style-type: none"> ■ PE-HD is used for the bottle body. ■ PE/PP blends and PE/PP copolymer are compatible for recycling. 	1 2 1
Colours	<ul style="list-style-type: none"> ■ Colours are minimised and are in line with the EuPIA exclusion list. Only carbon-black free masterbatches are used (PE is commonly coloured and markets for coloured material). ■ Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list, as well as carbon black (non-NIR sortable). 	2 1 3 1 2
Barriers/Coatings	<ul style="list-style-type: none"> ■ No barriers are used. ■ Clear plasma coatings (SiOx-Barrier) are compatible for PE-bottle recycling. ■ EVOH-Barrier-Layers show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are PVDC and PA, as well as oxo-degradable additives. 	3
Fillers	<ul style="list-style-type: none"> ■ Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. ■ Mineral fillers, such as Talc, CaCO3 and TiO2, are compatible for PE recycling, if an overall blend density is of < 1 g/cm³ is given. ■ UV stabilisers and Nanocomposites show a limited recycling compatibility. ■ Not recyclable and strictly to be avoided is the use of dense fillers without respecting the overall blend density (change to > 1 g/cm³). 	



Closure		Country specifics
Material	<ul style="list-style-type: none"> ■ Polymer identical caps with a density < 1 g/cm³ are used: PE-HD, PE-MD. ■ Silicone, PS, thermoset plastics, nylon, PVC (prerequisite: d > 1 g/cm³), steel and aluminium are compatible for PE-bottle recycling. ■ PP and PE-LD show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are silicones and non-PO-based plastics with a density < 1 g/cm³. 	5
Seals	<ul style="list-style-type: none"> ■ Seals and Liners are made from the same material as the caps: PE-HD. ■ Liners made of PE-LD, composites of aluminium and paper, EVA, PP and TPE show a limited recycling compatibility, as well as seals made of PP, OPP, PE-LD and silicones with a density > 1 g/cm³. ■ Not compatible with recycling and strictly to be avoided are PVC, silicones and components of foamed non-thermoplastic elastomers. 	4
Functional closures	<ul style="list-style-type: none"> ■ Additional components, such as lidding films and snap on lids, are made of PE-HD, PE-MD. ■ Silicone valves in spray dispensers or pumps with a density > 1 g/cm³ and metal components are compatible for PE-bottle recycling. ■ PP and PE-LD show a limited recycling compatibility. 	5 3 1

Decoration		Country specifics
Printing/Inks	<ul style="list-style-type: none"> ■ Direct printing shows a limited recycling compatibility, nevertheless EuPIA GMP (Good Manufacturing Practices) must be considered. ■ Not compatible with recycling and strictly to be avoided are fully printed black (including background) using soot-carbon-based pigments whose NIR is not proven. Not compatible with recycling and strictly to be avoided are inks that bleed. 	
Sleeves/Labels	<ul style="list-style-type: none"> ■ In-mould-labels are made of PE-HD. ■ Unnecessary decorations should be avoided. Labels and sleeves made of PE-HD, PE-LD, PE-LLD, PP, OPP, PS as well as paper (for labels) and PET-G (for sleeves), with less than 70% coverage on face or designed on proof in a way that the bottle polymer can be identified. ■ Not compatible with recycling and strictly to be avoided are paper-based labels or PVC-labels that cannot be removed via cold-wash, as well as PET-Sleeves with a density < 1 g/cm³. 	4 2 1 1 1
Adhesives	<ul style="list-style-type: none"> ■ Wash-off adhesives are compatible at temperatures from 60 to 80°C (hot washing). ■ All other adhesives show a limited recycling compatibility. 	



4.5 PP packaging (rigid)

Examples:



4.5.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓																			
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			
	<p>The respective recycling infrastructure for this packaging type is mostly implemented in every country. In addition, there are already existing technical recycling processes in scale & practice.</p>																			

Country specific mesh sizes

In practice recyclable above ... mm																				
	40	50	40	50-60	20/<60	80	50	20	50	50	n.a.	40	n.a.	20-30	65	15-100	50	-	-	
	<p>Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.</p> <p>If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.</p>																			

4.5.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		For plastic cans with a metal bottom or a metal top a dissuasive rate applies and the highest fee must be paid
2		Coloured plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
1		Penalties for black colour (with carbon black): 50% (penalized fee)
2		Penalties for PE or PP with density > 1 g/cm ³ : 10% (penalized fee)
3		Penalties for multimaterial bodies including EVOH >= 5%
4		Penalties for non-PP-Labels (unless forcibly removable or zipper with legend: "separate me" or other equivalent text that encourages separation or removal)
5		Penalties for PVC, rubber, silicone or metal accessories (if they are not forcibly removable or contain a legend that they must be removed to consume the product)
1		Penalties for rigid plastic packaging that is undetectable by optical sorting
1		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials
1		Crushed dimensions of these packaging types shall not exceed 231 mm in two dimension (PREP)
2		Avoid labels and sleeves that cover more than 40% of surface area (PREP)
3		Avoid opaque PE. Avoid any detectable black pigments (PREP)
1		Avoid non detachable labels/sleeves made out of a different polymer than the bottle that cover more than 40%-60% of the total surface area - 40% being best practice (OPRL)
2		Avoid any detectable black pigments (OPRL)
3		Avoid pumps with metal and glass parts. Plastic only pumps need to be mono or mixed PO with a maximum of 90/10 % share (OPRL)
4		Removable/Peelable lidding films are deemed separate/standalone component (OPRL). Therefore the component must be designed in accordance to the Design Guide of the corresponding packaging material guide
1		Avoid pumps with metal and glass parts (OPRL)

Key:

EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-Recycling Guide (DfR) for PP packaging (rigid)

Note: There is no limit value for differentiating between flexible and rigid as the actual classification into a fraction depends on the behaviour of the packaging. As semi-rigid packaging behaves diffusely in the separation process (sorting), classification via flexibles (i.e., according to the stricter criteria) in this guide is generally recommended.



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

Body		Country specifics
<p>Material</p> <ul style="list-style-type: none"> ■ PP is used for the body. ■ PP/PE blends and PP/PE copolymer are compatible for recycling. ■ Polymers of density < 1 g/cm³ in low concentration (EVA, TPE (PO-based)) cause a limited recycling compatibility. ■ Not compatible with recycling are non-PO-plastics with a density < 1.0 g/cm³. 		<p>1 2 1 </p>
<p>Colours</p> <ul style="list-style-type: none"> ■ Colours are minimised and are in line with the EuPIA exclusion list. Only carbon-black free masterbatches are used (PP is commonly coloured and markets for coloured material exists). ■ Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list, as well as carbon black (non-NIR sortable). 		<p>2 1 3 2 1 </p>
<p>Barriers/Coatings</p> <ul style="list-style-type: none"> ■ Mono-layer material (PP) and no barriers are used. ■ EVOH barrier layers are compatible for recycling. ■ Not compatible with recycling and strictly to be avoided are PVDC- and PA-layers. 		<p>3 </p>
<p>Fillers</p> <ul style="list-style-type: none"> ■ Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. ■ Mineral fillers, such as Talc, CaCO₃ and TiO₂, are compatible for PP recycling, if an overall blend density is respected. ■ UV stabilisers and nanocomposites cause a limited recycling compatibility. ■ Not at all recyclable and strictly to be avoided is the use of dense fillers without respecting the overall blend density (changes in the range from 1.0 to 1.08 g/cm³). 		



Closure		Country specifics
<p>Material</p> <ul style="list-style-type: none"> ■ Same polymer closure type: lids or caps are made of PP. ■ Closures made of PE cause a limited recycling compatibility (PE shares negatively effects the mechanical properties). ■ Not compatible with recycling and strictly to be avoided are components of non-separable silicone (floating silicone), as well as foamed non-thermoplastic elastomers. 		<p>5 </p>
<p>Seals</p> <ul style="list-style-type: none"> ■ Seal is made from the same polymer type as the body (PP). ■ PE-HD, PE-MD seals are compatible for recycling. ■ PE-LD Sleeves, aluminium plates cause a limited recycling compatibility. Closures or safety seals > 1.0 g/cm³ (PS, silicone, nylon, PET-G, PLA) can be easily separated. Nevertheless, those materials are lost in the recycling process. 		
<p>Functional closures</p> <ul style="list-style-type: none"> ■ Addition components, such as lidding films or slip-on lids, are made of the same material type as the body (PP). ■ Not compatible with recycling and strictly to be avoided are non-separable silicon components (valves in spray dispensers or pumps can be made of silicone). 		<p>5 3 1 </p>

Decoration		Country specifics
<p>Printing/Inks</p> <ul style="list-style-type: none"> ■ Inks should be avoided as far as possible. ■ Optimised quantity of used inks, non-toxic inks, that are in line with the EuPIA exclusion list, as well as laser marked printing. ■ Not compatible with recycling and strictly to be avoided are fully printed black (including background) using soot-carbon-based pigments whose NIR is not proven. Not compatible with recycling and strictly to be avoided are inks containing components of the EuPIA exclusion list, as well as bleeding inks. 		
<p>Sleeves/Labels</p> <ul style="list-style-type: none"> ■ Labels or IML are made of PP (the lack of adhesives has a positive effect on recycling). ■ PE/PO Labels or IML made of PE or paper respect a coverage on face of less than 70 %. ■ PE/PP label with density > 0.95 g/cm³, cups with cardboard wrappers in conventional design show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are PET sleeves with density < 1 g/cm³. Full paper wrappers are not compatible when detection of polymer material underneath is not guaranteed. 		<p>4 2 4 1 1 </p>
<p>Adhesives</p> <ul style="list-style-type: none"> ■ Water-soluble adhesive applications are used. Its use is minimised and the removability respected. ■ Absorbent pads in trays/bowls must be completely removable with density > 1 g/cm³ or made of compatible polymers (PP) ■ Bonding agents cause a limited recycling compatibility depending on polymer structure. ■ Not compatible with recycling and strictly to be avoided are non-water-soluble adhesive applications in combination with wet-strength labels. 		



4.6 PS packaging

Examples:



4.6.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓	✗	~	✓	✗	✗	✗	✓	✓	✗	~	✗	~	✗	~	~	✗	✗		
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p> <p>ALDI's acceptance criteria of using PS packaging is currently very fragmented in the ALDI operating countries, since the recycling infrastructure is very diverse.</p>																			

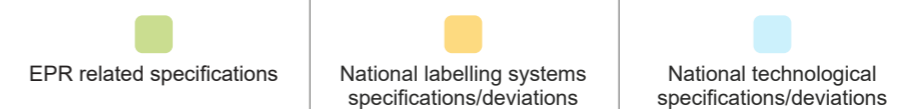
4.6.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Coloured plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
2		For plastic cans with a metal bottom or a metal top a dissuasive rate applies and the highest fee must be paid
1		Penalties for black colour (with carbon black)
2		Penalties for multimaterial bodies including EVOH >= 5%
3		Penalties for non-PS-Labels (unless forcibly removable or zipper with legend: "separate me" or other equivalent text that encourages separation or removal)
4		Penalties for PVC, rubber, silicone or metal accessories (if they are not forcibly removable or contain a legend that they must be removed to consume the product)
1		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials

Key:

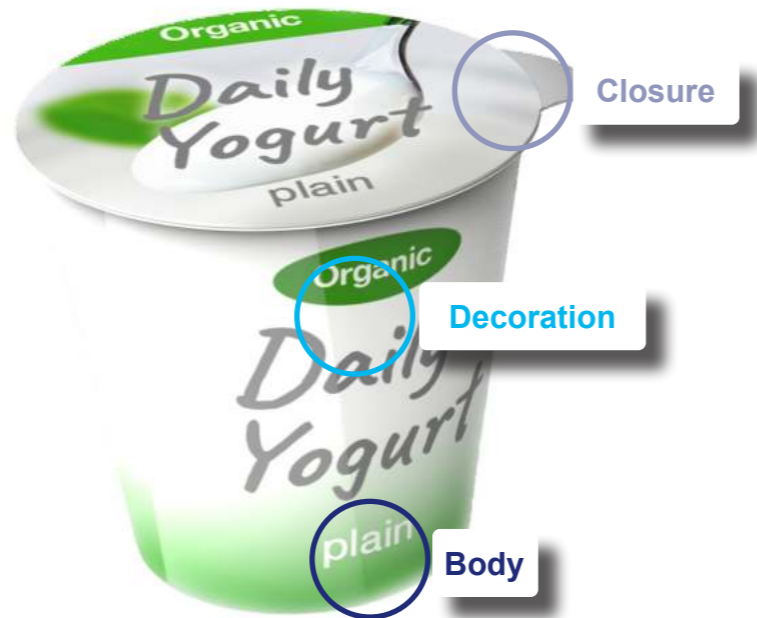


Country specific mesh sizes

In practice recyclable above ... mm																		
	40	50	40	50-60	20/<60	80	50	20	50	50	n.a.	40	n.a.	20-30	65	15-100	50	-
	<p>Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.</p> <p>If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.</p>																	



Design-for-Recycling Guide (DfR) for PS packaging



Key:

■ "Best case design" (recyclable components)
■ Reduction of recyclability but compatible for recycling
■ Reduction of recyclability with limited recycling compatibility
■ Reduction of recyclability and incompatible for recycling

Body		Country specifics
Material	<ul style="list-style-type: none"> PS is used for the body. Not compatible with recycling are multilayer-cups with a density from 1.0 to 1.08g/cm³. 	2
Colours	<ul style="list-style-type: none"> Colours are minimised and are in line with the EuPIA exclusion list. Only carbon-black free masterbatches are used. Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list, as well as carbon black. 	1 1
Barriers/Coatings	<ul style="list-style-type: none"> Mono-layer material (PS) and no barriers are used. EVOH and PA barrier layers are compatible for recycling. 	2
Fillers	<ul style="list-style-type: none"> Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. Mineral fillers, such as Talc, CaCO₃ and TiO₂, are compatible for PS recycling, if an overall blend density is respected. UV stabilisers and nanocomposites show a limited recycling compatibility. Not recyclable and strictly to be avoided is the use of dense fillers without respecting the overall blend density (changes in the range from 1.0 to 1.08 g/cm³). 	

Closure		Country specifics
Material	<ul style="list-style-type: none"> Closures are minimised and made of PO (PE, PP) without liners to respect the floatability. Not compatible with recycling and strictly to be avoided are plastics with a density range from 1.0 to 1.3 g/cm³. 	4
Seals	<ul style="list-style-type: none"> Seal is made from the same polymer type as the body (PS). OPS, PBT/PS, OPE and OPP seals are compatible for recycling. Metallised OPET seals show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are PET-PS-multilayer materials. 	
Functional closures	<ul style="list-style-type: none"> Additional components, such as lidding films or slip-on lids, are made of the same material type as the body (OPS). 	4

Decoration		Country specifics
Printing/Inks	<ul style="list-style-type: none"> Inks should be avoided as far as possible. Optimised quantity of used inks, non-toxic inks, that are in line with the EuPIA exclusion list, as well as laser marked printing. Not compatible with recycling and strictly to be avoided are fully printed black (including background) using soot-carbon-based pigments whose NIR is not proven. Not compatible with recycling and strictly to be avoided are inks containing components of the EuPIA exclusion list. 	
Sleeves/Labels	<ul style="list-style-type: none"> Labels are made of PS/OPS. No cardboard-wrappers are used. Labels or IML made of PE/PP/OPP or paper respect a coverage on face of less than 70%. PE/PP label with densities > 0.95 g/cm³, cups with cardboard wrappers in conventional design show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are PET Sleeves with density < 1 g/cm³. Full paper wrappers are not compatible when detection of polymer material underneath is not guaranteed 	3 1
Adhesives	<ul style="list-style-type: none"> Water-soluble adhesive applications are used. It's use is minimised and the removability respected. Absorbent pads in trays/bowls must be completely removable, without leaving adhesive residues on PS. Not compatible with recycling and strictly to be avoided are non-water-soluble adhesive applications in combination with wet-strength labels. 	



4.7 PE-based films, pouches

Examples:



4.7.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
 	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	~	✓	✓	✓	✓	✓	✓	✓	✓
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			

Country specific mesh sizes

In practice recyclable above ... mm																				
	40	50	40	50-60	20/<60	80	50	20	50	50	n.a.	40	n.a.	20-30	65	15-100	50	-	-	
	<p>Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.</p> <p>If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.</p>																			



4.7.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Coloured plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
1		Penalties for black colour (with carbon black)
2		Penalties for multimaterial bodies including EVOH >= 5%
3		Penalties for PVC, rubber, silicone or metal accessories (if they are not forcibly removable or contain a legend that they must be removed to consume the product)
1		Penalties for using mineral fillers > 4%
1		The minimum standard 2023 defines inks based on nitrocellulose and used in adhesive side printing as non-recyclable (for films > A4)
2		PA-layer, coextruded, with tie-layer can be compatible under certain circumstances (minimum standard)
3		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials
1		To be considered monomaterial/recyclable use min. 80% PE for tubes and films (PREP)
2		Coating not to exceed 10% (EVOH, PVOH, Nylon, AlOx, SiOx) of total component weight (PREP)
3		Avoid any paper or PET labels (PREP)
1		In order for flexibles to be considered monomaterial use min. 90% PE with no more than 5% of PP and 5% EVOH, PVOH, AlOx, SiOx and Acrylic (OPRL)
2		In order for flexibles to be considered mixed PO use min. 90% mixed polyolefin with no more than 5% of EVOH, PVOH, AlOx, SiOx and Acrylic (OPRL)
3		Use metallisation with no more than 0.1 micron applied by vacuum or vapour deposition to the inside of the pac (OPRL)
4		Avoid rigid elements such as spouts, caps or zips with a polymer other than PE (OPRL)
5		Use only monomaterial PE for toothpaste tubes (OPRL)
6		For labels made out of a different material than PE use a maximum of 30% of each packaging face and design it easily removable (OPRL)
1		For flexibles only use min. 90% PE with no more than 5% of PP and 5% EVOH, PVOH, AlOx, SiOx and Acrylic (Repak)
2		Use metallisation with no more than 0.1 micron applied by vacuum or vapour deposition to the inside of the pac (OPRL)

Key:

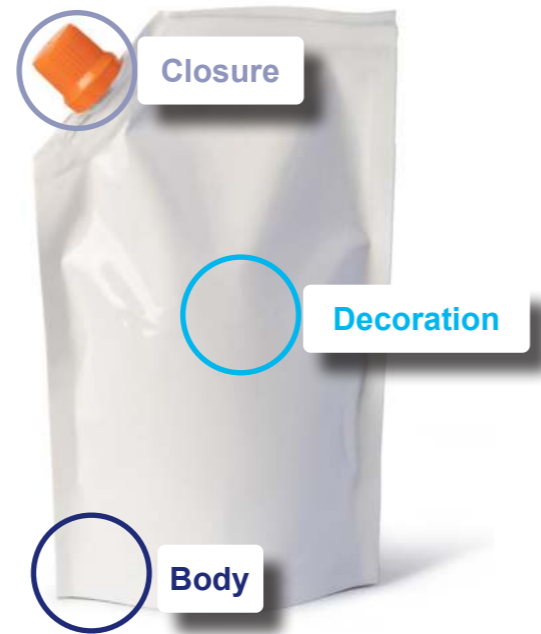
EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-Recycling Guide (DfR) for PE-based films, pouches



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

Body		Country specifics
<p>Material</p> <ul style="list-style-type: none"> ■ PE-LD, PE-LLD, PE-HD, PE-BD (F) is used as body material. ■ PP, EVA, as well as bounding agents show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are PA, PE-X-Components, PET and PLA in multilayer structures. Attention: PP should be strictly avoided in films to be recycled in blown-film-applications. 		<p>1 1 </p> <p>1 2 </p> <p>5 </p>
<p>Colours</p> <ul style="list-style-type: none"> ■ Colour masterbatches without carbon black pigments are used. ■ Not compatible with recycling and strictly to be avoided are dark colours using carbon black pigments (if only used in inner layer: testing is required). 		<p>1 1 </p>
<p>Barriers/Coatings</p> <ul style="list-style-type: none"> ■ No barriers are used. ■ Metallisation, EVOH with tie layer, coatings of SiOx/AlOx are compatible for recycling. ■ Not compatible with recycling and strictly to be avoided are PA (adhesive laminated films without the addition of compatibilizers), PVDC-, PVC-, PVOH-, aluminium film-layer, as well as non-polymer-barriers (except SiOx/AlOx/metallisation). 		<p>2 2 </p> <p>2 2 </p> <p>3 </p>
<p>Fillers</p> <ul style="list-style-type: none"> ■ Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. ■ Mineral fillers, such as Talc, CaCO₃ and TiO₂, are compatible for PE recycling, if an overall blend density is of < 1 g/cm³ is given. Also compatible is foamed PE (gas, blowing agents). ■ Not recyclable and strictly to be avoided is the use of dense fillers without respecting the overall blend density (change to > 1 g /cm³); as well as bio/oxo/photo-degradable and nanocomposite materials. 		<p>1 </p>

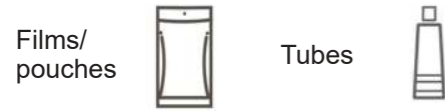
Closure		Country specifics
<p>Material</p> <ul style="list-style-type: none"> ■ Polymer identical caps with a density < 1 g/cm³ are used: PE-HD, PE-MD, PE-LD. ■ Non-PO plastics are compatible recycling. ■ PP shows a limited recycling compatibility in PE-LD recycling processes. ■ Attention: PP should be strictly avoided in films to be recycled in blown film applications. 		<p>4 3 </p>
<p>Seals</p> <ul style="list-style-type: none"> ■ Seals with a density < 1 g/cm³ are used: PE-HD, PE-MD, PE-LD. 		
<p>Functional closures</p> <ul style="list-style-type: none"> ■ All components of functional closures are made of PE-HD, PE-MD or PE-LD. ■ PP shows a limited recycling compatibility in PE-LD recycling processes. ■ Attention: PP should be strictly avoided in films to be recycled in blown film applications. 		

Decoration		Country specifics
<p>Printing/Inks</p> <ul style="list-style-type: none"> ■ Direct printing is compatible for recycling. EuPIA GMP (Good Manufacturing Practices) must be respected. ■ Not compatible with recycling and strictly to be avoided are fully printed black (including background) using soot-carbon-based pigments whose NIR is not proven. Not compatible with recycling are inks those bleeds. 		<p>1 </p>
<p>Sleeves/Labels</p> <ul style="list-style-type: none"> ■ Unnecessary decorations should be avoided. Labels made of PE-HD, PE-MD or PE-LD are compatible for recycling. ■ Paper labels are compatible for recycling. ■ PP labels show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are adhesive paper labels and plastic labels (density > 1 g/cm³) that cannot be removed under cold wash-off conditions (40°C), metal film labels. 		<p>3 3 </p> <p>6 </p>
<p>Adhesives</p> <ul style="list-style-type: none"> ■ For multilayer films, tie-layers are usually compatible. ■ Cross-linking laminating adhesives (acrylates, PU) should be avoided as far as possible. ■ Not compatible with recycling and strictly to be avoided are adhesive paper labels and plastic labels (density > 1 g/cm³) that cannot be removed under cold wash-off conditions (40°C). 		



4.8 PP-based films, pouches

Examples:



4.8.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	~	~	~	~	~	~	✓	✓	~	~	✓	~	~	✓	~	~	~	~		
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			
	<p>Collection, sorting and recycling infrastructure for this packaging type is not yet implemented in every ALDI operating country. However, PP flexible packaging show unique protective properties for our products and the substitution would rather lead to environmentally inferior alternatives.</p>																			

Country specific mesh sizes

In practice recyclable above ... mm																			
	40	50	40	50-60	20/<60	80	50	20	50	50	n.a.	40	n.a.	20-30	65	15-100	50	-	
	<p>Not all packaging sizes are sorted in practice, but are screened off as sorting residue. The table shows the mesh sizes in mm of the screens commonly used for fine particle separation.</p> <p>If a package is smaller than the specified mesh size in more than one dimension, the chance is high that it will not be sorted.</p>																		

4.8.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Coloured plastic packaging with colors containing carbon black is considered as obstructive packaging (higher fees are charged)
1		Penalties for black colour (with carbon black)
2		Penalties for multimaterial bodies including EVOH >= 5%
3		Penalties for PVC, rubber, silicone or metal accessories (if they are not forcibly removable or contain a legend that they must be removed to consume the product)
1		The minimum standard requires the testing of identifiability in sensor-based sorting by measurement of large labels (> 50% of projected surface) made from foreign materials
1		To be considered monomaterial/recyclable use min. 80% PP for tubes and films (PREP)
2		Coating not to exceed 10% (EVOH, PVOH, Nylon, AlOx, SiOx) of total component weight (PREP)
3		Avoid any paper or PET labels (PREP)
1		In order for flexibles to be considered monomaterial use min. 90% PP with no more than 5% of PE and 5% EVOH, PVOH, AlOx, SiOx and Acrylic (OPRL)
2		In order for flexibles to be considered mixed PO use min. 90% mixed polyolefin with no more than 5% of EVOH, PVOH, AlOx, SiOx and Acrylic (OPRL)
3		Use metallisation with no more than 0.1 micron applied by vacuum or vapour deposition to the inside of the pac (OPRL)
4		Avoid rigid elements such as spouts, caps or zips with a polymer other than PP (OPRL)
5		Use only monomaterial PP for toothpaste tubes (OPRL)
6		For labels made out of a different material than PP use a maximum of 30% of each packaging face and design it easily removable (OPRL)
1		For flexibles only use min. 90% PP with no more than 5% of PE and 5% EVOH, PVOH, AlOx, SiOx and Acrylic (Repak)
2		Use metallisation with no more than 0.1 micron applied by vacuum or vapour deposition to the inside of the pac (OPRL)

Key:

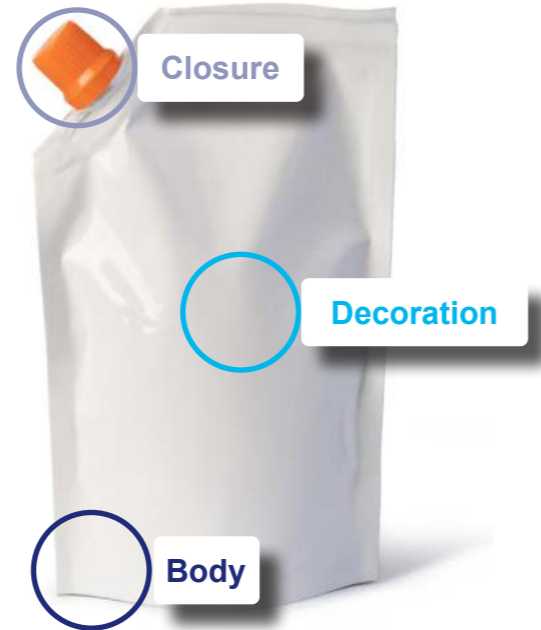
EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-Recycling Guide (DfR) for PP-based films, pouches



Key:

"Best case design" (recyclable components)	Reduction of recyclability but compatible for recycling	Reduction of recyclability with limited recycling compatibility	Reduction of recyclability and incompatible for recycling

BODY		Country specifics
<p>Material</p> <ul style="list-style-type: none"> PP is used as body material. Different PP types (OPP, BOPP) can be used. HD-PE, MD-PE is compatible for recycling; nevertheless shares should be kept as low as possible. LD-PE, EVA, as well as bounding agents show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are PA, PET and PLA in multilayer structures. 		<p>1 1 </p> <p>1 2 </p> <p>5 </p>
<p>Colours</p> <ul style="list-style-type: none"> Colour masterbatches without carbon black pigments are used. Not compatible with recycling and strictly to be avoided are dark colours using carbon black pigments (if only used in inner layer: testing is required). 		<p>1 1 </p>
<p>Barriers/Coatings</p> <ul style="list-style-type: none"> No barriers are used. Metallisation, EVOH with tie layer, coatings of SiOx/AlOx are compatible for recycling. PP-based acrylate used in the area of coating thicknesses is conditionally compatible. Not compatible with recycling and strictly to be avoided are PA-, PVDC, PVC-, PVOH-, aluminium film-layer, as well as non-polymer-barriers (except SiOx/AlOx/metallisation). 		<p>2 2 </p> <p>3 2 </p>

<p>Fillers</p>	<ul style="list-style-type: none"> Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. Mineral fillers, such as Talc, CaCO₃ and TiO₂, are compatible for PP recycling, if an overall blend density is of < 0.995 g/cm³ is given. Also compatible is foamed PP (gas, blowing agents). Not recyclable and strictly to be avoided is the use of dense fillers without respecting the overall blend density (change to > 0.995 g/cm³); as well as bio/oxo/photo-degradable and nanocomposite materials. 	
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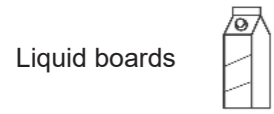
CLOSURE		Country specifics
<p>Material</p>	<ul style="list-style-type: none"> Polymer identical caps with a density < 0.995 g/cm³ of PP are used. Other PO-Types, such as PE-HD and PE-MD, are compatible for recycling. PE-LD causes a limited recycling compatibility in PP recycling processes. 	<p>4 3 </p>
<p>Seals</p>	<ul style="list-style-type: none"> Seals of PP with a density < 0.995 g/cm³ are used. 	
<p>Functional closures</p>	<ul style="list-style-type: none"> All components of functional closures are made of PP. Other PO-Types, such as PE-HD and PE-MD, are compatible for recycling. PE-LD shows a limited recycling compatibility in PP recycling processes. Not compatible with recycling and strictly to be avoided are non-separable silicon components or foamed foreign polymers with a density < 0.995 g/cm³. 	<p>3 </p>

DECORATION		Country specifics
<p>Printing/Inks</p>	<ul style="list-style-type: none"> Direct printing is compatible for recycling. EuPIA GMP (Good Manufacturing Practices) must be respected. Not compatible with recycling and strictly to be avoided are fully printed black (including background) using soot-carbon-based pigments whose NIR is not proven. Not compatible with recycling are inks those bleeds. 	
<p>Sleeves/Labels</p>	<ul style="list-style-type: none"> Unnecessary decorations should be avoided. Labels made of PP are compatible for recycling. PE-HD- and PE-MD-labels, as well as paper labels are compatible for recycling. PE-LD labels show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are adhesive paper labels and plastic labels (density > 1 g/cm³) that cannot be removed under cold wash-off conditions (40°C), metal film labels. 	<p>3 1 </p> <p>6 </p>
<p>Adhesives</p>	<ul style="list-style-type: none"> For multilayer films, tie-layers are usually compatible. Cross-linking laminating adhesives (acrylates, PU) should be avoided as far as possible. Not compatible with recycling and strictly to be avoided are adhesive paper labels and plastic labels (density > 1 g/cm³), where adhesives cannot be removed under cold wash-off conditions (40 °C). 	



4.9 Liquid packaging board

Examples:



4.9.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓																			
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			

i From 2024 onwards, the **tethering of the closure** (according to Article 6, 2019/904/EC) must be ensured for the period of intended use for beverage containers up to 3 litres. This applies for countries of the European Union. However, tethered closures should be considered as best practice.

EU 2021 (SUP): **Plastic straws** may no longer be placed on the market. The repulpability of **paper straws** should be confirmed.

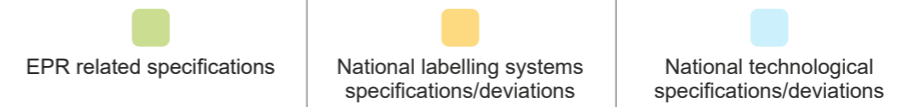
4.9.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1	Penalties for paper and cardboard printed with inks using mineral oils
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Key:





Design-for-recycling guide for liquid packaging boards



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

BODY		Country specifics
<p>Material</p>	<ul style="list-style-type: none"> ■ Body is made from PE/cardboard or PE/cardboard/aluminium. ■ Not compatible with recycling are wet strength papers with limited pulpability. 	
<p>Colours</p>	<ul style="list-style-type: none"> ■ Colours are minimised and are in line with the EuPIA exclusion list. ■ Redispersing water-soluble printing inks, adhesives and varnishes show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list. 	
<p>Barriers/Coatings</p>	<ul style="list-style-type: none"> ■ Double-side plastics designed for the processing of composite beverage cartons are used. Fibre and non-fibre materials are easily separable. ■ Polymer coatings show a limited recycling compatibility. ■ Not compatible with recycling are additional external coatings, such as metallised PET films. 	



<p>Fillers</p>	<ul style="list-style-type: none"> ■ No additives are used. ■ Only chemicals are used that do not interfere with the recycling process, such as mineral fillers (kaolin, talcum, titanium dioxide (white pigment)). Nevertheless, the fibre yield will be reduced. ■ Bulking agents show a limited recycling compatibility. ■ Wet strength agents, if fibre recovery is not given, are not compatible. Water soluble substances causing the release of micro plastics via the process water. 	
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CLOSURE	Country specifics	
<p>Material</p>	<ul style="list-style-type: none"> ■ Poly-Al compatible plastic closures (PE-HD/PP) are used. ■ Non-paper components are minimised and easy to separate from the fibrous material. ■ No oxo-degradable plastics are used (applies for closures, straw and straw packaging). 	
<p>Seals</p>	<ul style="list-style-type: none"> ■ Non-paper components are minimised and easy to separate from the fibrous material. 	
<p>Functional closures</p>	<ul style="list-style-type: none"> ■ Functional closures, such as dosing aids, are made of Poly-Al compatible (PE-HD/PP) material. 	

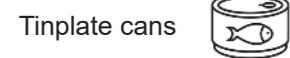
DECORATION	Country specifics	
<p>Printing/Inks</p>	<ul style="list-style-type: none"> ■ Inks should be avoided as far as possible. ■ Optimised quantity of used inks, non-toxic inks, that are in line with the EuPIA exclusion list. ■ UV inks show a limited recycling compatibility in PolyAl recycling processes. ■ Not compatible with recycling and strictly to be avoided are inks containing components of the EuPIA exclusion list. 	<p>1 </p>
<p>Sleeves/Labels</p>	<ul style="list-style-type: none"> ■ Recycling compatible labels (plastic labels) are used. 	
<p>Adhesives</p>	<ul style="list-style-type: none"> ■ Quantity of adhesives is minimised and the removability is respected. ■ Self-adhesive labels and adhesives leading to stickies show a limited recycling compatibility. ■ Not compatible with recycling and strictly to be avoided are water-insoluble or non-redispersing adhesive applications where it has not been specifically proven that they can be removed. 	

A testing method suitable for proofing the removability of adhesive applications is PTS-RH 021/97, or INGEDE Method 12 adjusted for packaging. The exceptions granted for hotmelt adhesives in the ERPC Scorecard: (softening temperature of thermoplastic adhesives (according to R&B): ≥ 68°C, layer thickness (non-reactive adhesives): ≥ 120 µm, layer thickness (reactive adhesives): ≥ 60 µm, horizontal dimension of the adhesive application (in either direction): ≥ 1.6 mm).



4.10 Tinplate cans

Examples:



4.10.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓																			
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			

4.10.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

- 1 Threshold for plastic on metal packaging is 25% (OPRL)

Key:

EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-recycling guide for tinplate cans



Key:

"Best case design" (recyclable components)	Reduction of recyclability but compatible for recycling	Reduction of recyclability with limited recycling compatibility	Reduction of recyclability and incompatible for recycling

BODY		Country specifics
Material	<ul style="list-style-type: none"> Tinplate (mono layer material) is used for the body. 	
Colours	<ul style="list-style-type: none"> Protective coatings are minimised and, like conventional coatings, are also suitable for metal recycling. Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list, as well as carbon black. 	1
Barriers/Coatings	<ul style="list-style-type: none"> Mono-layer material (Tinplate) is used. 	
Fillers	Not relevant.	

CLOSURE		Country specifics
Material	<ul style="list-style-type: none"> Closures are made of tinplates. Plastic components (closures and valve caps) are minimised and easy to separate from the metal body. 	
Seals	Not relevant.	
Functional closures	<ul style="list-style-type: none"> Plastic components (closures and valve caps) cause a limited recycling compatibility. 	

DECORATION		Country specifics
Printing/Inks	<ul style="list-style-type: none"> Inks are avoided as far as possible. Optimised quantity of used inks, non-toxic inks, that are in line with the EuPIA exclusion list. Not compatible with recycling and strictly to be avoided are inks containing components of the EuPIA exclusion list. 	
Sleeves/Labels	<ul style="list-style-type: none"> Unnecessary decorations are avoided. Paper or plastic labels or paper or plastic banderoles are used. 	
Adhesives	Not relevant.	



4.11 Aluminium packaging

Examples:



4.11.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓																			
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			

4.11.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Only considered aluminium if thickness > 50 µm
1		Threshold for plastic on metal packaging including foil is 25% (OPRL)

Key:

EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-recycling guide for aluminium packaging



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

BODY		Country specifics
	<ul style="list-style-type: none"> ■ Aluminium (mono layer material) is used for the body. ■ Aluminium-composites show a limited recycling compatibility and should be avoided. 	1 1
	<ul style="list-style-type: none"> ■ Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list. 	
	<ul style="list-style-type: none"> ■ Mono-layer material (Al) with minimisation of lacquer layers. ■ Protective coatings are minimised and as conventional lacquer finishes compatible for recycling. 	
	<ul style="list-style-type: none"> Not relevant. 	

CLOSURE		Country specifics
	<ul style="list-style-type: none"> ■ Closures are made of aluminium. ■ Plastic components (closures and valve caps) are minimised and easy to separate from the metal body. 	
	<ul style="list-style-type: none"> ■ Safety seal is made from the same material as the body. For tubes: Safety seal is designed to be pierced through the closure (no removable seal). 	
	<ul style="list-style-type: none"> ■ Plastic components (closures and valve caps) cause a limited recycling compatibility. Foreign objects such as "widget" nitrogen balls or valve caps should be avoided 	

Aerosol aluminium cans should generally be easy to empty of residues, as residues of highly flammable liquids pose a problem in sorting and recycling processes.
 Due to the above-mentioned safety issues, aerosol cans are excluded from recycling in some countries.

DECORATION		Country specifics
	<ul style="list-style-type: none"> ■ Inks should be avoided as far as possible. ■ Optimised quantity of used inks, non-toxic inks, that are in line with the EuPIA exclusion list. ■ Not compatible with recycling and strictly to be avoided are inks containing components of the EuPIA exclusion list. 	
	<ul style="list-style-type: none"> ■ No labels are used, embossed decorations are preferred. ■ Paper or plastic labels are recycling compatible. The proportion of foreign materials (non-aluminium) should be kept below 5%. 	
	<ul style="list-style-type: none"> Not relevant. 	



Design-for-recycling guide for paper-based packaging (folding boxes, bags, pouches, composites)



Key:

- "Best case design" (recyclable components)
- Reduction of recyclability but compatible for recycling
- Reduction of recyclability with limited recycling compatibility
- Reduction of recyclability and incompatible for recycling

BODY		Country specifics
	<ul style="list-style-type: none"> ■ Body of the folding box is made of repulpable cellulose fibres. ■ Fibres from alternative non-woody plants, such as grass, cotton, if prepared for paper-making. ■ Non paper components, like plastic viewing windows, are minimised and easy to separate from the fibrous material. ■ Wet strength paper, greaseproof papers, waxed or wax-coated paper treated with fluorochemicals, unless recyclability is explicitly confirmed. 	
	<ul style="list-style-type: none"> ■ Colours are minimised and are in line with the EuPIA exclusion list. ■ Colours containing components of the EuPIA exclusion list. 	3 1
	<ul style="list-style-type: none"> ■ No or only compatible barriers are used. ■ Plastic and metal barriers with optimised adhesion (slight separation) are used, only one side-lamination, when possible. ■ Plastic coating on both sides, wax coatings, siliconised papers and wet strengthened fibres; unless recyclability is explicitly confirmed 	1 2 3 1 1 2 2 1 2 1 1 1

	<ul style="list-style-type: none"> ■ No additives are used. ■ Only chemicals are used that do not interfere with the recycling process, such as mineral fillers (kaolin, talcum, titanium dioxide (white pigment)). ■ Wet strength agents if fibre recovery is not given, water soluble substances causing the release of micro plastics via the process water. 	
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CLOSURE		Country specifics
	<ul style="list-style-type: none"> ■ No non-paper components are used. ■ Non-paper components (e.g., metal dosing aids, staples, zippers) are minimised and easy to separate from the fibrous material. ■ The use of magnetic closures should be avoided. 	
	<ul style="list-style-type: none"> ■ Non-paper components are minimised and easy to separate from the fibrous material. 	
	<ul style="list-style-type: none"> ■ Functional closures, such as dosing aids, are made of the same material as the main body. 	

DECORATION		Country specifics
	<ul style="list-style-type: none"> ■ Inks should be avoided as far as possible. ■ Optimised quantity of used inks, non-toxic inks, that are in line with the EuPIA exclusion list. ■ Not compatible with recycling and strictly to be avoided are inks containing components of the EuPIA exclusion list. 	1 2
	<ul style="list-style-type: none"> ■ Labels should be avoided as far as possible. ■ Recycling compatible paper labels are used. ■ Plastic labels show a limited recycling compatibility. 	
	<ul style="list-style-type: none"> ■ Quantity of adhesives is minimised and the removability is respected. ■ Self-adhesive labels and adhesives leading to stickies show a limited recycling compatibility. 	

A testing method suitable for proofing the removability of adhesive applications is PTS-RH 021/97, or INGEDE Method 12 adjusted for packaging. The exceptions granted for hotmelt adhesives in the ERPC Scorecard: (softening temperature of thermoplastic adhesives (according to R&B): ≥ 68°C, layer thickness (non-reactive adhesives): ≥ 120 µm, layer thickness (reactive adhesives): ≥ 60 µm, horizontal dimension of the adhesive application (in either direction): ≥ 1.6 mm).



4.13 Glass bottles, jars

Examples:



4.13.1 Acceptance overview

	ALDI Nord										ALDI SOUTH									
Packaging type																				
	✓																			
	<p>The packaging is accepted, when, as a minimum, amber rated packaging specifications within the Design-for-Recycling Guides are met. However, ALDI's expectation is to have all packaging designed at least light green rated. A detailed overview of the current availability of a collection, sorting and recycling system in ALDI markets can be found in the Annex (Chapter 8.1).</p>																			

4.13.2 Design-for-Recycling (DfR) Guide

This subchapter consists of two sections: the country specific DfR table and the main DfR guide. The national specifications and/or deviations must be cross-referenced with the main DfR guide. For more information see subchapter 3.2.

Country specific DfR specifications/deviations

1		Penalties for black glass bottles
1		Penalties for manufacturing with glass other than soda-lime glass: 50% (penalized fee)
2		Penalties for ceramic or non-magnetic steel closure system: 50% (penalized fee)
3		Penalties for associated infusion element (porcelain, ceramic, stoneware, etc.): 50% (penalized fee)
1		Penalties for soda-lime glass packaging combined with infusible element (porcelain, ceramics, earthenware)
2		Penalties for glass packaging with non-magnetic steel closure system
1		Glass shares with a level of transmission of less than 10% in a 400 nm to 780 nm wave range (e.g. due to varnishing or tinting) cannot be classified as recyclable content
2		With demijohns, i.e. bottles covered with a basket, the glass share is to be considered completely lost
1		Clear, transparent amber and green glass can be used. Avoid black, dark blue colours (PREP)
2		Avoid ceramics, borosilicate and heat treated glass (PREP)

Key:

EPR related specifications

National labelling systems specifications/deviations

National technological specifications/deviations



Design-for-recycling guide for glass packaging



Key:

"Best case design" (recyclable components)	Reduction of recyclability but compatible for recycling	Reduction of recyclability with limited recycling compatibility	Reduction of recyclability and incompatible for recycling

BODY		Country specifics
<p> Material</p> <ul style="list-style-type: none"> Best case design: Container is made of transparent/translucent soda-lime-glass. Light green: For opal glass, the probability of being recycled is low, but does not represent an incompatibility Yellow: Borosilicate glasses are only compatible to a limited extent depending on their heat resistance. Red: Not compatible with recycling and strictly to be avoided are lead crystal, borosilicate glasses with high heat resistances. 		<p>1 1 </p> <p>3 2 </p> <p>2 </p>
<p> Colours</p> <ul style="list-style-type: none"> Best case design: Standard glass colours in white, green and brown are used. Transparency must be ensured. Yellow: Dark translucent colours have a limited recycling compatibility. Red: Not compatible with recycling and strictly to be avoided are opaque colours shades, as well as surfaces with metallic effects. 		<p>1 1 </p> <p>1 </p>
<p> Barriers/Coatings</p> <ul style="list-style-type: none"> Best case design: No protective lacquers or protective films are used. Red: Not compatible with recycling and strictly to be avoided are protective lacquers or protective coatings, that would interfere with the processing (cullet production). 		
<p> Fillers</p> <p>Not relevant.</p>		

CLOSURE		Country specifics
<p> Material</p> <ul style="list-style-type: none"> Best case design: Closures are made of metal (tinplate or aluminium). Yellow: Closures made of plastics should be avoided. Red: Not compatible for recycling and strictly to be avoided are non-ferromagnetic metal and ceramic closures. 		<p>2 2 </p>
<p> Seals</p> <ul style="list-style-type: none"> Light green: Non-glass and non-metal components are minimised and easy to separate from the glass container. Yellow: Moulded materials (unrelated to glass) and ceramic attachments are not compatible for recycling. Red: Not compatible for recycling are ceramic attachments. 		
<p> Functional closures</p> <ul style="list-style-type: none"> Best case design: Functional closures are made of metal (tinplate or aluminium). Red: Not compatible for recycling and strictly to be avoided are swing stopper with non-ferromagnetic metal components. 		

DECORATION		Country specifics
<p> Printing/Inks</p> <ul style="list-style-type: none"> Best case design: No coating lacquers are used. Light green: Coating lacquers are minimised and recycling compatible (transparency, cullet production). Red: Not compatible with recycling and strictly to be avoided are lacquers leading to opacities (full-surface, opaque finishes) or low cullet rates. 		
<p> Sleeves/Labels</p> <ul style="list-style-type: none"> Light green: Recycling compatible labels (paper or plastics) or plastic sleeves are used. Yellow: Self-adhesive labels, permanent adhesive labels, bottles with textiles or net sleeves cause a limited recycling compatibility. 		
<p> Adhesives</p> <ul style="list-style-type: none"> Light green: Adhesives are minimised and label or sleeve removability is respected. Yellow: Hot melts and permanent adhesive labels cause a limited recycling compatibility. 		



4.14 Highlighted packaging formats

Coffee capsules

Coffee capsule - packaging or product?

Coffee capsules may be either packaging or products (so-called consumer goods). It is important to distinguish what happens to the coffee powder during the brewing process:

- If the coffee powder is rinsed out of the capsule, empty packaging remains. This packaging represents sales packaging that is subject to system participation and is therefore usually permitted in the separate collection system (yellow sack, yellow bin).
- If the coffee powder remains as a moist residue (coffee grounds) in the capsule, it is no longer packaging. The capsule must usually be disposed of as a product (consumer goods) in the residual waste bin.

The EU legislator (current EU Directive on packaging and packaging waste) and the Environment Agency in the UK define as follows:

- Beverage system capsules (e.g., for coffee, cacao, or milk) which are left empty after use are considered packaging.
- Beverage system capsules, coffee foil pouches and filter paper coffee pods disposed together with the used coffee product are non-packaging.

According to the draft PPWR (European Packaging Regulation) from December 2022, it is recommended to “treat coffee or tea system single-serve units that are in practice disposed of together with the product residues as packaging”. It should be noted that in the current draft, packaging will only be considered recyclable from 2035 onwards, among other things, if it is effectively collected, sorted, and recovered: “recycled at scale”.

In Australia the exact distinction of coffee capsules being considered product or packaging is currently formulated by APCO. Commonly they are perceived packaging.

The basic prerequisite for effective recycling varies depending on the material of the capsule. In principle, aluminium capsules are easy to sort out; the prerequisite here, however, is that they are not merely screened out without a corresponding sorting stage (such as fine screening). The latter requirement also applies to plastic-based capsule systems (mostly PP). In addition, a sorting technology specialised in very small packaging is required, which is currently not state of the art.

In some countries (UK, Italy, Spain, Belgium, France and Switzerland) separate take-back systems for coffee capsules have been established. An example is the Podback system in the UK. In Austria, a pilot project was initiated in 2022 for the separate collection of coffee capsules of all brands made of aluminium and plastic, via a separate recycling bag and the green bin “coffee capsules”.

In Germany, manufacturers can use an exemption to ensure that filled capsules can also be taken back via the collection of recyclable materials.

In Belgium, all coffee capsules allowed to be collected via PMD, since January 2023.



Nets, mesh packaging

Net packaging for fruit and vegetables is used in particular for onions, potatoes and citrus fruits. The nets are usually made of plastic (PE, EPS), cotton or cellulose and are provided with labels or banderoles. When selecting the material, attention should always be paid to existing recycling infrastructures. There is no recycling path for cellulose-based plastic nets. The situation is further complicated by the fact that these nets can be recognised as paper during optical sorting and then cannot be pulped under the conditions of paper recycling. Established recycling structures for expanded polystyrene (EPS) and for cotton in the packaging sector are also not available.

Nets can usually be identified clearly in the automatic sorting according to material type. With wide-meshed packaging structures, safe discharge is made more difficult by the lack of air resistance. Wherever possible, nets should be designed with flat packaging components, such as banderoles and bar labels, which support the discharge. Large-format nets, such as firewood nets or fir tree nets, are problematic in the sorting plants. Due to the mechanical processes in the sorting process, large-format nets tend to get tangled and cause blockages in the plants.

Dos	Dont's
<ul style="list-style-type: none"> • Mesh packaging made of PE • Focus on mono packaging • Increased sortability through identical materials for net structure and label/banderole, such as PE-HD net with PE-LD banderole • Close-meshed nets with “flat” components (labels, banderoles) increase sortability 	<ul style="list-style-type: none"> • Mesh packaging made of cotton, EPS or cellulose • Nets made of different types of material, such as PE-HD net with paper composite label • Use of ferromagnetic metal clips, as these can lead to false discharges. • Design of wide-meshed nets (inefficient discharge due to low air resistance)



4.15 Currently not accepted and non-recyclable packaging materials/formats

This chapter summarises those packaging formats where there is currently no infrastructure available in any of ALDI's operating countries. Therefore they are not considered accepted by ALDI and thus no Design-for-Recycling Guide exists.



	ALDI Nord	ALDI SOUTH
Packaging materials		
Plastics:	X	
PVC, PVDC	The listed packaging materials/formats are not accepted for ALDI from a recyclability perspective , since there is no collection, sorting and recycling infrastructure available in any ALDI operating market. Therefore there is also no Design for Recycling guide for these packaging types.	
EPS		
PLA		
PA		
PC	The listed packaging formats may be accepted and recyclable in the future, provided the infrastructure in our operating markets develop.	
PET (only flexibles*)		
Polymer structure with Aluminium layer (e.g. ABL tubes)	The other packaging formats/materials listed within this guideline can be seen as alternatives.	

* Flexible PET packaging formats refers to an actual stand-alone packaging format (e.g. candy wrapper, wrapping around non-food product). A flexible PET component as part of another main packaging format (e.g. sealing film on monomaterial PET tray) does not fall into this category and can still be used as long as it is compatible for recycling of the main packaging format (e.g. tray).

Packaging materials	These materials are difficult for recycling, since there is no comprehensive recycling infrastructure in ALDI operating countries implemented. Besides recyclability other environmental and sustainable considerations must be taken into account.
Jute	
Earthenware	
Wood	
Cellulose	
Textile (cotton, nylon, polyester)	

5 Classification of licence fees of composite packaging/coated paper

For composite packaging and coated papers, some countries have data on the fibre content and the related licence fees.

Country	Proportion of paper fibre in composite packaging / coated paper	Licence Fees
	< 85% (Source)	4.0330 €/kg (Composite materials in which paper-cardboard accounts for the greatest weight)
	< 95%	
	< 80% (Source)	0.730 €/kg (Other material composites Household; from 01.01.2022)
	85%	
	85%	



6 Eco-modulation in ALDI countries

Eco-modulation has already been implemented in the following ALDI countries: Belgium, France, Ireland, Italy, Luxembourg, the Netherlands, Spain and UK.

While in some countries a plastic tax was levied at the statutory level, in others extended producer responsibility (EPR) eco-modulated fees are implemented. Thus, specific fees for different material types are paid, often reflecting the situation of the implemented sorting and recycling infrastructure. Typically, packaging that are easier to recycle (or which can be sold for higher prices once recycled) lead to lower system costs and thus to lower fees.

The status quo of the implemented eco-modulation in individual countries will be updated every six months in this Guide.



6.1 Belgium

Eco-modulation of fees

With the eco-modulation of EPR fees, a higher fee is usually paid for less recyclable packaging than for recyclable packaging. Since 2021, a dissuasive Green Dot fee is given for packaging that hampers sorting and/or recycling. This includes the following (obstructive) packaging:

- Plastic cans with metal bottom or top
- Oxo degradable packaging
- Biodegradable (and compostable) plastic packaging
- Plastic bottles with at least 70 % of which is covered by a sleeve (or 50 % for bottles < 50 cl), if the sleeve consists of a different material than the bottle and is not perforated;
- Colored plastic packaging with colors containing carbon black
- Laminated plastic packaging with aluminium film (fruit and vegetables, prepared meals, pet food, maintenance products and body care, wine (bag in box), coffee and cereals);
- Paper bags laminated with aluminium inside for powdered soups and sauces
- **Laminated cardboard packaging** of chips and milk powders with metal or plastic bottom or top
- **Black glass bottles**

For **plastic cans with a metal bottom** or top and **oxo-degradable packaging** the dissuasive rate applies immediately. For the other listed packaging types a temporary exemption is made and a transitional period (necessary for technical conversions) was granted. Companies that plan to switch to recyclable packaging will be entitled to the exemption of the dissuasive tariff for packaging put on the market in 2025.

The highest fee (4.0330 €/kg excl. VAT) has to be paid for those types of packaging.

Green dot rates 2024 per material (extract)

Material - Recycled	Rate (€/kg) excl. VAT
Glass	0.0687
Paper-cardboard (> 85%)	0.1209
Steel (> 50%)	0.0591
Beverage cartons	0.6366
PET – bottles and flasks (transparent colourless)	0.0646
PET – bottles and flasks (transparent blue)	0.3325
PET – rigid packaging other than bottles and flasks (transparent)	1.0310
HDPE – bottles, flasks and other rigid packaging	0.4694
PP – bottles, flasks and other rigid packaging	0.6843
PS & XPS – hard packaging, except for EPS	0.6107
PE – films	1.3828
Other plastics – films, except for compostable, aluminium laminates and plastic films containing at least 95% PE	1.8437
Valorised materials; PET trays opaque, EPS, compostable plastics (e.g., PLA), aluminium laminates, fibre based composites (< 85 % total paper fibre), wood, cork, etc.	4.0330
Obstructive packaging	Rate (EUR/kg) excl. VAT
Household packaging that obstruct the collection, sorting or recycling	4.0330

Figure: Licence fees Belgium (Source: FostPlus Green Dot Rates 2024)



6.2 France - The Bonus/penalty system (Citeo)

Already in 2023, new plastic rates are being introduced to support new sorting operations for plastics in the “development stream” with the aim of reating new recycling paths for 2025.

Different rates 2024 based on material families

MATERIAL	RATE IN ct. €/kg
Steel	5.72
Aluminium	15.34
Paper/cardboard	20.19
Food and beverage cartons (Brick)	30.41
Glass	1.50
Clear PET bottles and dispenser bottles (B&DB)	38.16
PE bottles and dispenser bottles	41.98
PP bottles and dispenser bottles	41.98
Dark/coloured PET bottles and dispenser bottles	46.94
Rigid PE packaging (except B&DB)	41.98
Rigid PP packaging (except B&DB)	41.98
Rigid PET packaging (except B&DB)	50.74
Flexible PE packaging	54.65
PS rigid packaging	58.36
Flexible PP packaging	62.27
Composite packaging or other plastic resins except PVC	69.90
Packaging containing PVC	76.32
Other materials	
Non-chemically transformed materials from renewable resources and sustainably managed resources (wood, cork)	20.19
No stream but suitable for energy recovery (textiles, other materials, etc.)	57.24
No stream and unsuitable for energy recovery (earthenware, porcelain, ceramics)	66.78

Figure: Differentiated rates by material (Source: CITEOCITEO Le tarif 2024 pour la réduction, le réemploi et le recyclage des emballages ménagers)

Eco-modulation aims

The eco-modulation system was designed to **encourage eco-design** of packaging and **integration of recycled materials**, as well as **awareness raising about sorting**, and to encourage companies to use packaging that is free of disrupting materials and recyclable. For this purpose, cumulative bonuses and progressive penalties are in effect.

The eco-modulation aims to reduce the environmental impact of the end of life of packaging with the following approaches:

- citizens' awareness to household packaging sorting,
- reduction of household packaging at source,
- use of refills.

Disruptive packaging

The objective is to limit “disruptive packaging” in the sorting and recycling stream. The term “**disruptive packaging**” is defined as follows:

- packaging addressed by sorting instructions, but which cannot be recycled;
- packaging with characteristics disrupt the end quality of recycled materials and significantly increase the cost of treatment.



Who decides that a packaging item is disruptive?

The sorting and recycling issues are analysed by technical committees (Cerec & Cotrep) and the recycling channels. Based on the technical considerations defined and taking into account the opinion issued by its Materials and Packaging Committee, EPR committee (including the Board of Directors of Citeo and some of its client administrators discuss where relevant the list of packaging to which an increase should be applied. All these propositions are then validated by public authorities. The list of disruptive packaging may be updated on the initiative of Citeo or Adelphe, or upon the proposal of the stakeholders. From this list of disruptive packagings are chosen the most disruptive ones to be subject to penalties.

Examples for disruptive packaging:

- glass packaging with a porcelain or ceramic cap;
- PET bottle/vial combined with aluminium or PET bottle/vial with silicone elements with density > 1 g/cm³.



Penalties

Three **graduated penalty levels** have been implemented to eliminate non-recyclable packaging and/or packaging containing elements that disrupt recycling.

Level 1 penalties with a 10% rate		
Material	Penalty	Main Issues
Rigid plastics	PET bottles and other rigid plastic packaging, PE, PP with a density of < 1 g/cm ³ for PET and > 1 g/cm ³ for PE and PP	Loss of material
Rigid PET plastics	Bottles, flasks and other rigid PET packaging containing Rigid plastic with a density > 1 g/cm ³	Loss of material
PET bottles and dispenser bottles ¹	PET bottles with PET-G, PLA or PS liner non-perforated	Loss of material and quality of recycled material
Paper-Cardboard ² (NEW)	100 % metallised cardboards on all sides	Loss of material

Level 2 penalties with a 50% rate		
Material	Penalty	Main Issues
PET bottles and dispenser bottles	PET bottles and jars containing glass balls	Quality of recycled material and degradation of industrial facilities

Level 3 penalties with a 100% rate		
Material	Penalty	Main Issues
Rigid PET packaging ³	Bottles, dispenser bottles and other opaque PET packaging (mineral fillers > 4%)	Quality of recycled material, damage to industrial equipment and operator safety
	Bottles, dispenser bottles and other rigid packaging combined with aluminium, PVC or silicone with density > 1g/cm ³	Quality of recycled materials and damage to industrial equipment

Continues on next page...

¹ The penalty applies to PET-G, PLA and PS sleeves on PET bottles and flasks, with the exception of sleeves with a perforation to facilitate separation of the decoration during collection and sorting.

² New 10 % penalty on cartons metallised on 100 % of the surface of all sides, which have less than 5 % of good orientation in sorting centres without allowing protection of the product. The penalty is low in the first year to alert and raise awareness among marketers of the problem generated by this type of packaging in the sorting centres and will be progressive.



continued... Level 3 penalties with a 100% rate		
Material	Penalty	Main Issues
Rigid plastics	Bottles, flasks and other rigid plastic packaging that cannot be detected by optical sorting containing carbon black	Loss of material during the sorting stage
Glass	Packaging made of glass other than soda-lime glass	Quality of recycled materials
	Soda-lime glass packaging combined with an infusible element (porcelain, ceramics, earthenware, etc.)	Damage to industrial equipment
	Glass packaging with steel closure system non-magnetic	Quality of the recycled material and operator safety.
Cardboard	Reinforced cardboard packaging	Damage to industrial equipment
	Paper and cardboard packaging printed with inks manufactured with added mineral oils ⁴	Quality of recycled material

Graduated Penalties (Source: CITEO Le tarif 2024 pour la réduction, le réemploi et le recyclage des emballages ménagers)

³ PET bottles with mixed lids (aluminium/plastic) that can be fully and necessarily separated to allow consumption of the product are not included in the list of maligned packaging.

⁴ Increase in the penalty on packaging containing mineral oil from 50 % in 2023 to 100 % in 2024, planned for one year so that marketers can run down their stocks following the ban on the presence of mineral oils in the inks used to print packaging from 2023 onwards

It should be noted that penalties are cumulative between the 3 levels (10 %, 50 % and 100 %), they are not cumulative within the same level.

Premiums

According to the CITEO rate list for 2024 a premium is applied to plastic packaging that incorporates post-consumer plastic material from the recycling of household, industrial or commercial packaging. Packaging made from production waste (e.g., waste from trial runs, non-compliant products) is not eligible for these basic or additional premiums. As chemical recycling is still under development and currently no process on an industrial scale in place, premiums are not yet subjected. The premiums listed below refer to recyclates from mechanical processes.

- Integration of **recycled PET (rPET)** into **PET packaging**: a premium of **0.05 €/kg**, if rPET comes from household, industrial or commercial waste; an additional premium of **0.35 €/kg** if rPET comes exclusively from the recycling of household packaging of pots and trays.
- Integration of **recycled PE (rPE)** into flexible **PE packaging** (mainly LDPE): a premium of **0.40 €/kg**, if rPE comes from household, industrial or commercial waste; an additional premium of **0.15 €/kg** if rPET comes exclusively from the recycling of household packaging.
- Integration of **recycled PE (rPE)** into **PE packaging**: a premium of **0.45 €/kg**, if rPE comes from household, industrial or commercial waste.
- Integration of **recycled PP (rPP)** into **PP packaging**: a premium of **0.45 €/kg**, if rPP comes from household, industrial or commercial waste.
- Integration of **recycled PS (rPS)** into **PS packaging**, including expanded polystyrene (EPS) into PS or EPS packaging: a premium of **0.55 €/kg**, if rPS or rEPS comes from household, industrial or commercial waste.



6.3 Ireland - Repak

Repak charges different fees depending on whether packaging can or cannot be recycled. Non-recyclables are charged independently of the type of material.

Material	Costs €/t 2023	Costs €/t 2024
Recycled Paper/Cardboard	29.54	40.64
Recycled Glass	10.86	11.71
Recycled Aluminium	57.86	26.64
Recycled Steel	80.26	59.47
Recycled Rigid Plastic	102.72	138.89
Recycled Flexible Plastic	102.72	138.89
Non Recycled Plastic	292.03	400.42
Beverage Plastic Bottles – PET	102.72	
Beverage Plastic Bottles – Other Plastics	102.72	138.89
Non Beverage Plastic Bottles	102.72	138.89
Recycled Wood	13.03	11.79
Recycled Composite	102.72	138.89
Non Recycled Composite	292.03	400.42
Non Recycled Other	292.03	213.62

Figure: Licence fees Ireland (Source: PRO Europe – Participation Costs Overview 2023)



6.4 Italy – CONAI Environmental Contribution

Through CONAI, the higher fees for separate waste collection, recycling and recovery of packaging waste are distributed to producers and users. The aim was to promote the use of more recyclable packaging by relating the contribution to the environmental impact at the end of the life cycle.

The more complex the sorting and recycling stages are, the more expensive the contribution becomes. Packages that cannot be recycled are rated the highest.

Since **January 2023 a further segmentation of plastic packaging** with 9 levels has been implemented:

For plastics, currently 9 levels are distinguished:

Material	Contribution €/t (from 1st January 2023)	Contribution €/t (from 1st July 2023)	Contribution €/t (from 1st October 2023)
Steel	5 €/t	5 €/t	5 €/t
Aluminium	5 €/t	5 €/t	7 €/t
Paper	Level 1 (Basic): 5 €/t	5 €/t	35 €/t
	Level 2 (CPL): 25 €/t	25 €/t	55 €/t
	Level 3 (mixed type C): 115 €/t	115 €/t	145 €/t
	Level 4 (Mixed type D): 245 €/t	245 €/t	275 €/t
Wood	8 €/t	8 €/t	8 €/t
Plastics	Level A1.1: 20 €/t	Level A1.1: 20 €/t	Level A1.1: 20 €/t
	Level A1.2: 60 €/t	Level A1.2: 90 €/t	Level A1.2: 90 €/t
	Level A2: 150 €/t	Level A2: 220 €/t	Level A2: 220 €/t
	Level B1.1: 20 €/t	Level B1.1: 20 €/t	Level B1.1: 20 €/t
	Level B1.2 : 20 €/t	Level B1.2 : 20 €/t	Level B1.2: 20 €/t
	Level B2.1: 350 €/t	Level B2.1: 350 €/t	Level B2.1: 350 €/t
	Level B2.2: 410 €/t	Level B2.2: 477 €/t	Level B2.2: 477 €/t
	Level B2.3: 555 €/t	Level B2.3: 555 €/t	Level B2.3: 555 €/t
Level C: 560 €/t	Level C: 560 €/t	Level C: 560 €/t	
Bioplastic	170 €/t	170 €/t	170 €/t
Glass	23 €/t	23 €/t	15 €/t

Figure: Environmental contribution amount per material (for updates please check <https://www.conai.org/en/businesses/environmental-contribution/>)



- **Level A1.1** includes rigid and flexible packages with an effective and consolidated industrial selection and recycling chain from the commerce and industry circuit;
- **Level A1.2** includes IBC drums and cisterns;
- **Level A2** includes flexible packaging with an effective and consolidated industrial sorting and recycling chain, such as liners and bags for industrial use, palletising hoods, shrink films for bundling;
- **Level B1.1** includes packages with an effective and consolidated sorting and recycling chain from mainly from the domestic circuit; **PET articles**
- **Level B1.2** includes packages with an effective and well-established industrial sorting and recycling chain, mainly from households; **articles in HDPE**
- **Level B2.1** is dedicated to other selectable/recyclable packages from households as well from the C&I circuit; **rigid PP monopolymer packaging**
- **Level B2.2** is dedicated to other sorted/recyclable packaging from households and/or C&I circuit; **flexible packaging in PE monopolymer** material other than those in Level A1.1 and A2
- **Level B2.3** is dedicated to packaging with experimental recycling chains in consolidation
- **Level C** includes packages for which there are no ongoing recycling activities or which cannot be sorted/recycled according to the current state of technology



6.5 Luxembourg – Valorplus

The Green Dot tariffs are calculated based of the collection and disposal costs and the income from the sale of the collected packaging materials. Beyond that, no incentive measures are in place.

Material	2023 €/kg excl. VAT	2024 €/kg excl. VAT
Glass	0.0161	0.0201
Paper/Cardboard (≥ 85%)	0.0444	0.0451
Drinking cardboard	0.3269	0.3744
Steel (≥ 50%)	0.0107	0.0180
Aluminium (≥ 50% and ≥ 50µ)	0.0286	0.0184
PET - Bottles and flasks - transparent - colourless or slightly blue	0.1226	0.1895
PET - Bottles and flasks - transparent - dark blue or green	0.3593	0.4323
Bottles and flasks - transparent - other colours	0.3821	0.3437
PET - Bottles and flasks - opaque	0.3853	0.3498
HDPE - Bottles, flasks and other rigid packaging	0.1538	0.1790
PE - Films	0.4292	0.5413
Bottles, flasks and other rigid packaging	0.2713	0.3400
PS - Rigid packaging, except EPS	0.4601	0.4891
Others recoverable	0.9628	1.1279
EPS	0.2123	0.1905
Others non recoverable	1.1624	1.2859

Figure: Licence fees Luxembourg (Source: PRO Europe – Participation Costs Overview 2023)



6.6 The Netherlands – Plastic fee modulation

Since 2019, there have been two tariffs: one for normal plastics and a lower tariff for good recyclable plastics. A new plastic tariff system will be introduced in 2024, in which a distinction will be made between rigid and flexible plastic packaging. It is already announced that the starting rates for plastic will increase in 2024 due to the redistribution of costs resulting from the expansion of fee modulation.

At the same time, Afvalfonds Verpakkingen introduces a fee modulation for highly recyclable plastic packaging with a discount on the plastic rate up to 0.5 €/kg.

Afvalfonds Verpakkingen uses the KIDV Recycle Check to determine the recyclability of the packages. For packages that meet the Recycle Check conditions a lower fee can be applied.

Material - Type / Rate	2022 €/kg excl. VAT	2023 €/kg excl. VAT	2024 €/kg excl. VAT
Glass	0.048	0.060	0.100
Paper/Cardboard	0.022	0.012	0.017
Plastic (regular fee)	0.700	1.050	n/a
Plastic (lower rate)	0.440	0.790	n/a
Plastic rigid			1.220
Plastic flexible/not specified			1.320
Biodegradable plastic	0.700	1.050	
Aluminium	0.160	0.160	0.200
Other metals	0.230	0.250	0.330
Wood	0.020	0.010	0.015
Beverage Cartons (Drink cartons)	0.640	0.700	0.840
Other material types	0.020	0.010	0.015
General rate	0.770	0.770	n/a

Figure: Source: Afvalfonds Verpakkingen - Summary of fees in Euro per kilogram of packaging material



6.7 Spain - Plastic tax

From 1.1.2023, **non-reusable packaging made of non-recycled plastic** placed on the market for the first time in Spain will be subject to a special tax. The plastic tax will be charged in the entire Spanish territory.

The following are subject to the plastic tax

- all non-returnable plastic packaging, whether it contains something or is empty
- semi-finished plastic products for the production of packaging (preforms, thermoplastic films)
- plastic products that enable packaging to be closed, marketed or presented

It follows from the broad definition of the packaging law that not only sales packaging (primary packaging) is taxed, but also grouped packaging (secondary packaging) as well as transport packaging (tertiary packaging).

Products consisting of more than one material are only taxed according to the amount of non-recyclable plastic contained.

The **tax rate is € 0.45 per kg of non-recycled plastic**. The tax obligation does not apply to imports and intra-Community acquisitions < 5 kg/month.

Moreover, on 29 December 2022, the Royal Degree 1055/2022 on Packaging and Packaging Waste has entered into force. The new degree covers all packaging, regardless of whether it involves sales packaging (primary), grouped packaging (secondary) or transport packaging (tertiary), regardless of format, size or material (plastic, metal, cardboard or wood). Starting in 2024, Ecoembes will establish a new ecomodulation model for the Green dot fees, based on the guidelines set out in Royal Degree 1055/2022 on Packaging and Packaging Waste. A reduced fee will apply for packaging that is easier to sort and recycle and contains recycled raw materials, while penalties will be imposed for other packaging; determined on the basic fees (B.F.) in 2024:

Material - Type / Rate	2024 Fees €/kg	Material - Type / Rate	2024 Fees €/kg
Steel		Film and flexible plastics	
Beverage cans made of steel	0.196	Flexible packaging	1.081
Other steel packaging	0.185	Flexible packaging – SUP	1.136
Aluminium		UNE bags	0.632
Beverage cans made of aluminium	0.062	Compostable packaging	0.544
Other aluminium packaging	0.048	Cardboard for food and beverages	
PET		No SUP packaging	0.550
≤ 3 l PET beverage bottles - SUP	0.600	SUP packaging	0.605
PET rigid packaging	0.521	Paper and cardboard	
PET rigid packaging - SUP	0.576	No SUP packaging	0.135
HDPE		SUP packaging	0.190
Rigid packaging	0.399	Ceramic	0.014
Rigid packaging - SUP	0.454	Wood and cork	0.007
Other rigid plastics		Other materials	1.081
Rigid packaging	0.721		
Rigid packaging - SUP	0.776		



Ecomodulation of Green Dot Fees 2024

Material (Fractions)	Discounted Fee 2 Attributes	Discounted Fee 1 Attribute	2024 Base Fee	Penalised Fee
Other Rigid Plastics	B.F. -3.2%	B.F. -1.6%	B.F.	B.F. +10%
HDPE	B.F. -11.9%	B.F. -5.95%	B.F.	B.F. +10%
Flexible Plastic	B.F. -1.2%	B.F. -0.6%	B.F.	B.F. +10%
PET Tray		B.F. -5.55%	B.F.	B.F. +10%
Non PET Tray	B.F. -1.13%	B.F. -0.57%	B.F.	B.F. +10%
Paper and Cardboard			B.F.	B.F. +10%

Penalties shall be set for the following disruptors, depending on the packaging and their base rate:

1. Paper and cardboard:

- Printing with inks containing more than 1 % by mass of mineral oils (MOSH and MOAH): 20 %, progressively increasing to 50 % within three years. This penalty shall apply only to the weight of the paperboard.
- Cardboard reinforced with materials other than paper and board based materials: 50 %.

2. Glass:

- Ceramic or non-magnetic steel closure system: 50 %.
- Manufacture with glass other than soda-lime glass: 50 %.
- Associated infusion element (porcelain, ceramic, stoneware, etc.): 50 %.

3. Rigid plastic:

- Of polyethylene or polypropylene with density greater than 1 g/cm³ : 10 %.
- Dark colours which are not detectable by optical sorting, and in particular containing carbon black: 50 %.

4. PET:

- Use of glass beads in bottles and jars: 50 %.
- Combined with polyethylene in trays: 50 %.
- Combined with aluminium, PVC or silicone in bottles, jars and rigid plastic, with density above 1 g/cm³ : 100 %.
- Opaque PET (mineral filler > 4 %) in bottles, jars and rigid plastic: 100 %.

5. PVC:

- In bottles and jars: 100 %.

Bonuses are set for:

- Packaging which is marked with the percentage of packaging material, including its components (minimum bonus of 10 %)
- A bonus shall be granted for plastic packaging incorporating at least an additional 10 % over and above the mandatory minimum content of recycled plastic, provided that the recycled plastic comes from packaging waste. The amount of the bonus shall be determined on the basis of the weight of the recycled plastic incorporated in the packaging. The use of recycled plastic from household packaging waste shall give rise to an additional bonus. The amounts of these bonuses shall be differentiated for the different types of plastic polymers in order to provide incentives for recycling.



6.8 UK - Plastic packaging tax

On 1 April 2022, a plastic packaging tax came into force that affects manufactures of plastic packaging, business customers of manufacturers and importers of plastic packaging, as well as consumers who buy plastic packaging or goods in plastic packaging.

The tax is charged to plastic packaging that does not contain at least 30% recycled plastic or any packaging which is not predominantly plastic by weight. For the purposes of the Plastic Packaging Tax, all plastic is assumed to be made using non-recycled (virgin) material, unless there is evidence that recycled material has been used.

The following applies:

- Recycled plastic is plastic that has been reprocessed from recovered material by using a chemical or manufacturing process. Mass balance calculation to prove use of chemically recycled plastic content is currently under consultation by authorities.
- Recovered material is pre-consumer plastic or post-consumer plastic.

The plastic packaging tax will be amended from £210.82 per tonne to £217.85 per tonne with effect from 1 April 2024. In case of multiple material packaging components, the total weight counts as plastic packaging, if plastic is the heaviest material.

Examples:

- A 10 gram carton is made up of 4 grams of plastic, 3 grams of aluminium and 3 grams of cardboard. All 10 grams will be considered a plastic packaging component, as plastic is the heaviest material.
- A packaging made up of 1 gram recycled plastic, 4 grams of virgin plastic, 2 grams of recycled aluminium and 3 grams of recycled cardboard will not meet the threshold for recycled plastic (Calculation in the example: 20%). The Plastic Packaging Tax is due on the entire 10 grams packaging.



7 Glossary

Overview of abbreviations (acronyms and technical terms)

Abbreviation	Explanation
Al	Aluminium
AlOx	Aluminium Oxide, is vapour-deposited onto the substrate to improve the barrier properties (e.g. chip bags).
ABL	Aluminium barrier laminate
AMP	Anhydride modified polyethylene
CaCO ₃	Calcium carbonate (lime) is a mineral filler used to save plastic
EuPIA GMP	EuPIA Good manufacturing Practice This Good Manufacturing Practice (GMP) assists in controlling food safety hazards in the design and manufacture of inks, varnishes and coatings designed to be printed onto Food Contact Materials (FCM inks) and formulated for use on either the non-food contact or the food contact surfaces of food packaging and articles intended to come into contact with food".
d	Density
EPS	Expanded Polystyrene, foamed PS, known under the trade names "Styropor", Telgopor (Spain), Frigolit (Sweden), etc.
EVOH	Ethylene-Vinyl Alcohol, barrier plastic that is extruded or laminated onto films and papers or carton layers
H2R	How2Recycle
IML	In-mould-label: printed plastic films are welded onto the substrate as cut-to-size labels. No bonding agents are needed.
LPB	Liquid packaging board, liquid composites with the structure paper/PE (e.g. milk cartons) or Paper/PE/Al (e.g. juices)
LWP	Light weight packaging, Sales packaging made of plastic, aluminium, tinplate and composite materials (excluding paper and glass)
NIR	Near Infrared, non-visible light spectrum between 780 and 2,500 nm. NIR-separators are used
OPE	Orientated Polyethylene, categorisation like PE
OPP	Orientated Polypropylene, categorisation like PP
OPRL	On Pack Recycling Label
OPS	Orientated Polystyrene, thermoformed PS
MDOPE	Mono directional orientated polyethylene
MPO	Mixed Polyolefins, generic term for PE and PP
PA	Polyamide, barrier plastic, e.g. Nylon
PA barrier layers	mainly mechanically separable in the recycling process (if used for PET bottles)
PA blend	mechanically inseparable as copolymer (if used for PET bottles)
PBL	Plastic barrier laminate

Abbreviation	Explanation
PBT	Polybutylene terephthalate
PE	Polyethylene, Polyethylene is the most widely used plastic. It is found in bags, pouches, as an inner and outer coating on liquid composites and paper packaging. Common types of PE are: PE-HD, PE-MD, PE-LD.
PE-HD (HDPE)	Polyethylene with high density
PE-MD	Polyethylene with medium density
PE-LD (LDPE)	Polyethylene with low density
PET	Polyethylene Terephthalate. The main application of PET is the production of blow-moulded bottles.
PET-A	Polyethylene Terephthalate, amorph
PET-C	Polyethylene Terephthalate, identical to PET-A, but higher crystallinity: used for thermoforming containers, bowls or trays as they are microwave-safe
PET-G	Polyethylene Terephthalate, glycol based
PE-X	Polyethylene, cross-linked, no thermoplastic properties
PU	Polyurethane
POM	Polyoxymethylene: high hardness and strength, often used for precision parts (components of pump heads) in the packaging sector
PVDC	Polyvinylidenechloride, barrier plastic: widely used in food packaging for products with high fat content and strong flavours and aromas due to excellent barrier properties.
PP	Polypropylene: important areas of application are packaging films as well as rigid packaging. Good barrier properties against grease and moisture.
PREP	Packaging Recyclability Evaluation Portal
Protective coatings	Coatings with food approval (such as corrosion protection for metal cans)
PS	Polystyrene: mainly used for food-packaging in rigid or foamed (EPS) form.
SiOx	Silicon Oxide: SiOx coatings are used as oxygen and water vapour barriers for films and bottles.
Stickies	Paper-technical term for adhesive impurities
Semi-Rigid packaging	As semi-rigid packaging behaves diffusely in the separation process (sorting), classification via flexibles (i.e. according to the stricter criteria) in the guide is generally recommended.
Tie layer	Tie layers are needed to bond dissimilar polymer layers (materials of different polarity). Process: coextrusion of multilayer films. An important tie layer resin is AMP; used to bond polyolefins to PA or EVOH.
TPE	Thermoplastic Elastomer
XPS	Extruded polystyrene



8 Annex

8.1 Annex I: Current situation regarding available recycling infrastructure (country-specific)

The implementation and expansion of recycling infrastructures varies greatly from one country to another and is even not harmonised within Europe. To meet the requirements of the DIN standard, it is necessary to consider the country-specific characteristics.

The Guide was built on this basis and includes **up-to-date recycling information** of these 3 requirements “collected, processed and returned to use” from **18 countries**:

- Australia
- Ireland
- Slovenia
- Austria
- Italy
- Shanghai
- Belgium
- Luxemburg
- Switzerland
- France
- The Netherlands
- Spain
- Germany
- Poland
- United Kingdom
- Hungary
- Portugal
- United States

The requirements for the **implementation of a recycling infrastructure** are described in the following steps...

Step 1	Implemented collection infrastructure	
Step 2	Diverted from the waste stream (= sorting)	
Step 3	Implemented recycling infrastructure (processed and returned to use)	

...whereby each country is subdivided according to its current status quo indicated by a colour scale:

Collection or recycling infrastructure available	Infrastructure in development / test phase	Infrastructure built up by ALDI
Collection or recycling infrastructure (with restrictions) available	No infrastructure implemented	No reliable information available

If no recycling infrastructure is implemented or if less than 20% of the population is connected to a separate collection system a red classification is given. Once the 20% threshold is exceeded, a recycling infrastructure in development is classified in orange. The same applies to developments or processes that are already being tested on an industrial scale. The green colour classification takes place as soon as more than 50% of the population is connected to a separate collection system; a light green classification indicates that the recycling infrastructure is not yet uniformly developed within the country.



The following questions must be answered:

Step 1 Implemented collection infrastructure



Is the packaging collected in the respective country?

EXAMPLE

It is quite possible that certain packaging is explicitly excluded from collection. Metallised bags, such as PP chip bags, are excluded from collection in Denmark, Luxembourg and Norway. In these countries, the packaging thus does not reach the first stage within the value chain.

Result: Chip bags cannot be claimed as recyclable for the above mentioned countries.

Step 2 Diverted from the waste stream (= sorting)



Is the packaging diverted from the material stream?

EXAMPLE

It is possible that packaging is collected, but not separated in the sorting plant. For example, in Spain rigid plastics are collected regardless of the polymer type, but there is no individual material fraction into which polypropylene (PP) is sorted. The first step was passed, the second was not.

Result: A package composed of PP cannot be claimed as recyclable in Spain.

Step 3 Implemented recycling infrastructure (processed and returned to use)



Is the collected and sorted package also recycled?

EXAMPLE

In Germany, PP-cups are collected, sorted and recycled to a high standard.

It is important to know the **differences between the individual countries** in the development of the recycling infrastructure, also to individually assess the relevance of a guideline requirement. In any case, it is necessary to differentiate on a nation-state basis.

The status quo of the implemented recycling infrastructure for each country is shown in the subsequent overview.

According to ALDI's recyclability definition, requirements of the guidelines, the classification of “no infrastructure implemented” applies as soon as a packaging cannot be made available in a country in a high-quality recycling process (Chapter 2).



Colour code:

	Collection or recycling infrastructure available		Infrastructure in development / test phase		Infrastructure built up by ALDI
	Collection or recycling infrastructure (with restrictions) available		No infrastructure implemented		No reliable information available

		ALDI Nord									
Packaging type	Material type	Belgium	Spain	France	Netherlands	Denmark	Poland	Turkey	Germany	Other	
Trays/shells	PET	Green	Red	Red	Yellow	Green	Yellow	Green	Red	Red	Red
	PE	Green	Green	Light Green	Yellow	Green	Yellow	Green	Green	Green	Green
	PP	Green	Red	Light Green	Yellow	Green	Yellow	Green	Red	Red	Green
	PS	Green	Red	Light Green	Yellow	Green	Yellow	Green	Red	Red	Light Green
	Aluminium	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green
Cans	Aluminium	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green
	Tinplate	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green
Buckets/canisters/jugs	PP	Green	Red	Green	Yellow	Green	White	Green	Red	Red	Green
	PE	Green	Green	Green	Yellow	Green	White	Green	Green	Green	Green
	PS	Green	Red	Light Green	Yellow	Green	Red	White	Red	Red	Light Green
Tubes	PP (PBL)	Green	Red	Light Green	Red	Green	White	Green	Red	Red	Green
	PE (PBL)	Green	White	Light Green	Red	Green	White	Green	Red	Red	Green
	ABL	Green	White	Red	Red	Green	Red	White	Red	Red	White
	Aluminium	Green	Green	Green	Green	Green	Yellow	Green	Green	Green	Green

		ALDI SOUTH											
Packaging type	Material type	Germany	Austria	Australia	Switzerland	UK	Hungary	Ireland	Italy	Czechia	USA	China	
Trays/shells	PET	Green	Red	Green	Yellow	Red	Green	Red	Red	Red	Green	Red	
	PE	Green	Green	Green	Yellow	Green	Green	Yellow	Green	Green	Light Green	Red	
	PP	Green	Green	Green	Yellow	Green	Green	Yellow	Green	Green	Light Green	Red	
	PS	Green	Light Green	Red	White	Red	Green	Red	Red	Red	Red	Red	
	Aluminium	Green	Green	Green	Green	Green	Green	Green	Green	Green	Light Green	Green	
Cans	Aluminium	Green	Green	Green	Green	Green	Green	Green	Green	Green	Light Green	Green	
	Tinplate	Green	Green	Green	Green	Green	Green	Green	Green	Green	Light Green	White	
Buckets/canisters/jugs	PP	Green	Green	Green	Yellow	Green	Yellow	Green	White	Green	Light Green	Red	
	PE	Green	Green	Green	Yellow	Green	Yellow	Green	White	Green	Light Green	Red	
	PS	Green	Light Green	Red	White	Red	Green	Red	Red	Red	Red	Light Green	
Tubes	PP (PBL)	Green	Green	Green	Yellow	Red	Green	Red	Red	Red	Red	Red	
	PE (PBL)	Green	Green	Green	Yellow	Red	Green	Red	Red	Red	Red	Red	
	ABL	Green	Light Green	Red	Yellow	Green	Green	Red	Red	Red	Red	Red	
	Aluminium	Green	Green	Green	Green	Green	Green	Green	Green	Green	White	Red	



8.2 Annex Essential technical facts and physical properties that influence recyclability

- NIR identifiability
- Magnetisability and other metallic properties
- Density of plastic materials
- Defibration properties of fibre-based materials
- Incompatibilities
- Fine screening

NIR identifiability

Targeted sortability is the basic **prerequisite for recyclability**. Plastics and paper-based packaging are automatically detected and sorted using state of the art near-infrared scanners.

NIR scanners measure the reflection spectrum of the material layers near the surface.

Several **causes** are known for **defect detection**:

- The **use of soot-based pigments** for dark colouring (black, dark blue, grey, brown) of plastics prevents material recognition.
- Large-area, **non-material labelling** can impair recognition of the basic structure.
- **Metallic or metallised layers** cannot be penetrated by the NIR.

However, simple laws or general guidelines often do not do justice to the complex interdependencies. The guideline often refers to the need for measurement if the packaging has properties that can impair NIR detectability.

Magnetisability and other metallic properties

The **ferromagnetic property** of a package/a product is usually a dominant property for its recyclability. In all standard recycling processes, this material property is **used as** one of the **first process stages for separation**. The use of ferromagnetic components in composite structures usually leads to sorting into the tinplate fraction. If tinplate/steel is a secondary material, this will lead to greatly reduced recyclability (e.g., composite can with tinplate base). The same applies when aluminium foil is used as a barrier layer. Metallisation, on the other hand, is not critical in this respect.

Density of plastic materials

All plastic recycling processes separate the individual types of plastic by exploiting the differences in density. It is important that the **polymer density is not fundamentally changed** by additives or multilayer structures. Separability of plastics according to their density is an essential basic requirement to produce high-quality recyclates. In recycling plants, the sorted plastics are separated from foreign polymers by means of float-sink separation. The separation of polyolefins (PE and PP) from PET or PS, for example, is carried out in the separating medium water. It is important for the recovery that the **polyolefin structure does not exceed a density of 0.995 g/cm³**. The separation of PS from plastics of higher density is carried out in salt solution at a separation density of 1.08 g/cm³. This results in the requirement to respect the typical density ranges in terms of design.



Defibration properties of fibre-based materials

The recyclability of paper-based packaging is largely determined by the potential for recovering the pulp fibres during wastepaper processing. In practice, this is done by means of water in the so-called pulping process. The **repulpability** and the quality of the dissolved pulp can be mainly influenced by the structural design, coatings, adhesives, and possible wet strengthening. **Folding boxes, corrugated board**, and other similar products **without hotmelt adhesives** as well as papers laminated on one side are a priori **considered to be uncritical**. When using hotmelt, the type of application must be considered. Sandwich constructions, dispersion-coated paper packaging, waxed papers and high-density fibre castings generally require individual verification to determine recyclability.

Incompatibilities

In the ALDI Guideline, “recycling-incompatible” is defined as packaging designs that contain **substances** or materials **that can lead to significant degradation** of the recyclate and even render it unusable.

For the purpose of simplicity, packaging designs are listed here that are compulsorily **rejected in their entirety** in established recycling processes, so that they are to be classified as a total loss in terms of recycling (e.g. masterbatches containing carbon black, large print areas with carbon black-based pigments, opaque PET bottles).

Fine screening

The primary function of fine screening in sorting is to **remove components that are harmful** to the plant (dirt, dust, glass splinters and organic components) from the process at an early stage. In addition, it is sometimes used to **simplify the sorting process**. In some cases, the screen sections of the fine screening are also historically conditioned. Irrespective of other design features of small-format packaging, the screen cut used must be taken into account for actual recycling (the message of the guide is of course not to make packaging larger, but to encourage those responsible for recycling to apply the state of the art).

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