ALDI´S INTERNATIONAL RECYCLABILITY GUIDELINE

Version 2.1 | September 2023

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REVISION HISTORY

Version 1 (May 2022) > Version 2.1 (September 2023)

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"	Updating 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

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 recyclability guideline, ALDI is fulfilling the need to create transparency on an international basis. This guideline **recommends 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**.

This "International Recyclability Guideline" was 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.

* "ALDI" refers to the ALDI SOUTH Group (hereinafter also referred to as "ALDI SOUTH") and the ALDI Nord Group (hereinafter also referred to as "ALDI Nord"). Both business groups are legally independent groups of retail companies trading under the ALDI brand. The "International Recyclability Guideline" is published on the websites of the ALDI companies.

2 HOW DOES ALDI DEFINE RECYCLABILITY?

The term "recyclability" is very broadly defined and is often interpreted differently in the ALDI countries. In this Guideline "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 Guideline focuses on recycling processes that **generate secondary raw materials**, which can replace the corresponding primary raw material, for example the recyclate 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 Guideline only considers mechanical recycling processes. Other processes, such as chemical recycling and new developments accompanying it, are closely monitored by ALDI.

This Guideline only refers to the topic of recyclability. Further aspects of ALDI's circular packaging approach, such as compostability or reusability are not within the scope of this guideline.

2.1 OXO-AND BIODEGRADABLE PLASTICS

Oxo-degradable plastics are defined by the European Standards Organisation (CEN) as polymers which have been chemically modified to precipate the oxidation and fragmentation of the material through oxygen, UV ligh 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 Guideline considers only mechanical recycling, therefore, biodegradable and compostable plastics are not considered recyclable in the sense of the Guideline. 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"** from agricultural plants or waste, such as b**io-based PET**, **bio-based PE** or **bio-based PP** are accepted by ALDI and are deemed recyclable as they are chemically identical to their fossil-based counterparts. In order to assess the availability of infrastructure for these bio-based drop-ins, see details on the fossil-based counterparts.

3 HOW TO READ AND APPLY THE PACKAGING MATERIAL GUIDE

Chapter 3.1 explains how to read and use ALDI's 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. ALDI's 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 ALDI'S 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		

Only Shanghai

✓ Packaging accepted due to:
- Available infrastructure
- Infrastructure developments

~ Packaging preliminarily accepted due to:
- 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:
- 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.

(i) ...

Information marks are used to draw attention to country specific characteristics in either national regulation, recycling labelling schemes, or special national collection, sorting and recycling requirements. **For packaging formats which are accepted (✓ or ~) these marks need to be taken into account.**

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 ALDI's acceptance overview.

3.2 HOW TO READ DfR-GUIDE

To develop ALDI's guideline 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**.

Deviations from individual standards are unavoidable. The ALDI guideline primarily considers the **physical recyclability based on scientifically founded knowledge**. If necessary, **differing classifications** of individual property characteristics are made in relevant guidelines for various reasons. This is always noted with an „**Exclamation mark**" if this deviating classification is either **legally binding** in individual countries or must be observed regionally within the framework of recognised **labelling systems** or in the area of **pricing/eco-modulated fees** for packs.

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 guideline 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).

Colour coding DfR	Meaning of the colouring
"Best case design" (recyclable components)	Listed materials shall be evaluated as recyclable (valuable) material.
Reduction of recyclability but compatible for recycling	Listed materials are compatible for recycling, however those **components reduces recyclability**.
Reduction of recyclability with limited recycling compatibility	Listed materials cannot be separated by established recycling steps, but they have only a negligible impact on recyclate properties. Those **components should be avoided or minimised**.
Reduction of recyclability and incompatible for recycling	Listed materials cannot be separated by established recycling processes and degrade the quality of the recyclates 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 guideline represents 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.	• use mono materials. • if several materials are used, these should be structured in such a way that on opening they already separate into material components by design.	• avoid wet strength papers in fibre-based packs.
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.	• use non pigment materials. • use NIR-detectable pigments for colouring.	• 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.	• choose recycling compatible barrier materials (for more detailed information see DfR-Guide).	• 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.	• use should be minimised (spot adhesions). • use of material identical IML (welded, no adhesive needed). • labelling adhesives should be easily and completely removable.	• 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.
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.	• use small labels. • make sure that the main body of the material is still recognised. • easy separation must be ensured.	• avoid adhesive paper labels or plastic labels that cannot be removed.

PACKAGING FEATURES	DESCRIPTION	DOS	DONT'S
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.	• use of inks should be minimised.	• avoid inks that bleed. • avoid inks containing components of the EuPIA exclusion list.
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.	• recycling compatible additives should be used (for more detailed information see DfR-Guide). • the general density must be respected*.	• 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.	• use same material as the body of the packaging.	• 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.	• 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 Guideline considers the most common packaging formats:

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

such as

Beverage bottles

Non-beverage bottles

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord	ALDI SOUTH
Packaging type		
	✓	
	Belgium: 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%. **France:** PET-bottle/vial combined with aluminium or silicone elements (with density > 1 g/cm³) are considered as disruptive packaging leading to progressive penalties. **Australia:** Dimension of these packaging types shall not exceed 231 mm in two dimension and labels must not cover more than 50% of surface area (PREP). **UK:** Not detachable labels/sleeves made out a different polymer than the bottle should not cover more than 40% of the total surface area (OPRL). **Shanghai:** PET bottles containing oils (cooking oils) are manually sorted out and incinerated.	
	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".	

In practice recyclable above ... mm																		
																		Only Shanghai
	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.																	

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.

DESIGN-FOR-RECYCLING GUIDE FOR PET-BOTTLES TRANSPARENT

Colour code:

"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	PET-A (if applicable PEF) is used for the bottle body.	With the exception of Austria, no recycling stream exists for opaque PET bottles. In France, penalties for opaque PET-bottles with mineral fillers > 4%.
Colours	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.	
Barriers/ Coatings	No barriers are used (common for water and soft drinks). Clear plasma coatings (SiOx-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.	
Fillers	Only compatible additives, such as clarifiers, are used. UV stabilisers, AA blockers and nano-composites show a limited recycling compatibility.	

CLOSURE		Country specifics
Material	Caps materials with a density < 1 g/cm ³ 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.	In US, steel is considered incompatible without differentiation (ferrous/non-ferrous).
Seals	Seals are made from the same material as the caps: PP, PE-HD. The use of silicones should be avoided. Not compatible with recycling and strictly to be avoided are PVC, aluminium and silicones (silicones with a density > 1 g/cm³).	In France, penalties for bottles combined with aluminium, PVC or silicone with d > 1 or containing glass balls.
Functional closures	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).	As above for US.

DECORATION		Country specifics
Printing/ Inks	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 bleeds, both lead to discolouration.	
Sleeves/ Labels	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.	In France, penalties for bottles and dispenser bottles with an unperforated Sleeve (PET-G, PLA or PS). In US, paper labels are considered as disruptive in this context.
Adhesives	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)

such as

Beverage bottles

Non-beverage bottles

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord	ALDI SOUTH
Packaging type		
	✓	
	Belgium: 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% **Luxembourg:** Black plastics are excluded from collection. **Australia:** Coloured PET (except for transparent light blue) is classified "on notice or further action" in the SUP Action Plan. Dimension of these packaging types shall not exceed 231 mm in two dimension and labels must not cover more than 50% surface area (PREP). **UK:** Not detachable labels/sleeves made out a different polymer than the bottle should not cover more than 40% of the total surface area (OPRL). **Shanghai:** PET bottles containing oils (cooking oils) are manually sorted out and incinerated.	
	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".	

Packaging type																		
																		Only Shanghai
	✕																	
	France: Penalties for opaque PET-bottles with mineral fillers > 4%. **UK:** Whilst OPRL is recognising opaque PET bottles to be recyclable, there is no recycling infrastructure available.																	

In practice recyclable above ... mm																		
																		Only Shanghai
	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.																	

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.

DESIGN-FOR-RECYCLING GUIDE FOR PET-BOTTLES COLOURED (TRANSPARENT & OPAQUE)

Colour code:

"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	PET-A (if applicable PEF) is used for the bottle body.	In France, penalties for opaque PET-bottles with mineral fillers > 4%.
Colours	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.	
Barriers/ Coatings	No barriers are used (common for water and soft drinks). Clear plasma coatings (SiOx-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.	
Fillers	Only compatible additives, such as clarifiers, are used. UV stabilisers, AA blockers and nano-composites show a limited recycling compatibility.	

CLOSURE		Country specifics
Material	Caps materials with a density < 1 g/cm ³ 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.	In US, steel is considered incompatible without differentiation (ferrous/non-ferrous).
Seals	Seals are made from the same material as the caps: PP, PE-HD. The use of silicones should be avoided. Not compatible with recycling and strictly to be avoided are PVC, aluminium and silicones (silicones with a density > 1 g/cm³).	In France, penalties for bottles combined with aluminium, PVC or silicone with d > 1 or wcontaining glass balls.
Functional closures	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).	As above for US.

DECORATION		Country specifics
Printing/ Inks	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.	
Sleeves/ Labels	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	In France, penalties for bottles and dispenser bottles with an unperforated Sleeve (PET-G, PLA or PS). In US, paper labels are considered as disruptive in this context.
Adhesives	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

such as

Cups

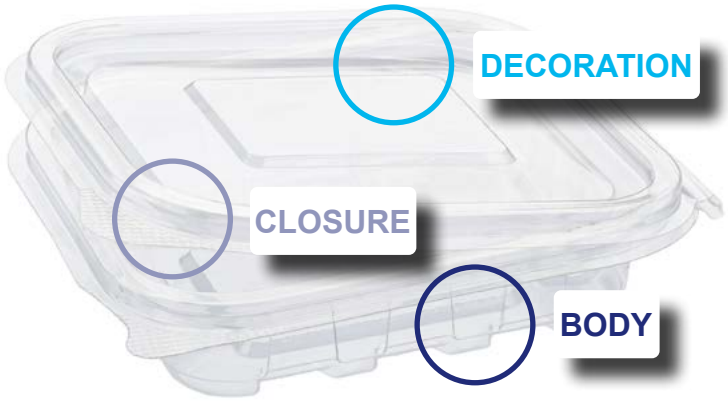
Pots/trays/ blisters

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord	ALDI SOUTH
Packaging type		
	✓	
	Australia: Dimension of these packaging types shall not exceed 231 mm in two dimension and labels must not cover more than 50% of surface area (PREP). PET sealing films on PET trays/cups/ blister are deemed separate/standalone component and therefore not recyclable. ⓘ **UK:** Black plastics are excluded from collection. ⓘ	
	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". 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.	

In practice recyclable above ... mm																		
																		Only Shanghai
	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.																	

DESIGN-FOR-RECYCLING GUIDE FOR PET OTHERS



Colour code:

"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	PET-A (if applicable PEF) is used for the packaging body. PE-Sealing-Layer	
Colours	Only transparent colouring: clear and light-blue colours are preferred (highest economic value).	
Barriers/ Coatings	No barriers are used. Clear plasma coatings (SiOx-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	Only compatible additives, such as clarifiers, are used. UV stabilisers, Nanocomposites and oxyven scavenger show a limited recycling compatibility.	In France, a malus is charged for using mineral fillers > 4%.

CLOSURE *(for rigid cover and sealing/lidding film)*		**Country specifics**
Material	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. *If instead of or in addition to a rigid closure, a sealing/lidding film is used, see next section (Seals).*	
Seals	Sealing films / Lidding films are made of mono- or multilayer films (density < 1 g/cm³) Unprinted Mono-PET films (if applied on a PET tray) Peel structures tested for recycling compatibility are used. The use of silicones should be avoided. Not compatible with recycling and strictly to be avoided are printed sealing/lidding films (with a density > 1g/cm³) PVC, aluminium and silicones (silicones with a density > 1 g/cm³).	
Functional closures	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).	

DECORATION		**Country specifics**
Printing/ Inks	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.	In US, paper labels are considered as disruptive in this context.
Sleeves/ Labels	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.	
Adhesives	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 PACKAGES (RIGID)

such as

Bottles

Cups

Pots/ trays

Buckets/canisters/ jugs

ALDI'S ACCEPTANCE OVERVIEW

Packaging type	ALDI Nord	ALDI SOUTH
	✓	
	Belgium: For plastic cans with a metal bottom or a metal top a dissuasive rate applies and the highest fee must be paid. **Luxembourg:** Black plastics are excluded from collection. **Australia:** Dimension of these packaging types shall not exceed 231 mm in two dimension and labels must not cover more than 50% of surface area (PREP). **UK:** Black plastics are excluded from collection. Not detachable labels/sleeves made out a different polymer than the main body should not cover more than 40% of the total surface area (OPRL). **Shanghai:** Pharmaceutic bottles are excluded from recycling; considered as hazardous waste.	
	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".	

In practice recyclable above ... mm																		
																		Only Shanghai
	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.																	

DESIGN-FOR-RECYCLING GUIDE FOR PE PACKAGES (RIGID)

Colour code:

"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	PE-HD is used for the bottle body.	In France, penalties for bottles and dispenser bottles that is undetectable by optical sorting.
Colours	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).	
Barriers/ Coatings	No barriers are used. Clear plasma coatings (SiOx-Barriers) 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.	
Fillers	Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. Mineral fillers, such as Talc, $CaCO_3$ and TiO_2, are compatible for PE recycling, if an overall blend density is of < 1 g/cm³ is given.	

Fillers	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	Polymer identical caps with a density < 1 g/cm ³ 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.	In the UK and Ireland metal and glass parts in pumps are deemed not recyclable, according to the On-pack recycling label.
Seals	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.	
Functional closures	All components of functional closures are made of PE-HD. 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.	

DECORATION		Country specifics
Printing/ Inks	Direct printing shows a limited recycling compatibility, nevertheless EuPIA GPM must be considered. Not compatible with recycling and strictly to be avoided are inks that bleed.	In US, paper labels are considered as disruptive in this context.
Sleeves/ Labels	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.	
Adhesives	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 PACKAGES (RIGID)

such as

Bottles

Cups

Pots/ trays

Buckets/canisters/ jugs

ALDI'S ACCEPTANCE OVERVIEW

Packaging type	ALDI Nord	ALDI SOUTH
	✓	
	Belgium: For plastic cans with a metal bottom or a metal top a dissuasive rate applies and the highest fee must be paid. **Australia:** Dimension of these packaging types shall not exceed 231 mm in two dimension and labels must not cover more than 50% of surface area (PREP). **UK:** Black plastics are excluded from collection. Not detachable labels/sleeves out of a different polymer than main body should not cover more than 40% of the total surface area (OPRL).	
	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". 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.	

Only Shanghai

In practice recyclable above ... mm																		
																		Only Shanghai
	40	50	40	50-60	20/ <60	80	50	20	50	50	n.a.	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.																	

DESIGN-FOR-RECYCLING GUIDE FOR PP PACKAGES (RIGID)

Colour code:

"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	PP is used for the body. 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.	In France, penalties for rigid plastic packaging that is undetectable by optical sorting.
Colours	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).	
Barriers/ Coatings	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.	
Fillers	Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. Mineral fillers, such as Talc, $CaCO_3$ and TiO_2, are compatible for PP recycling, if an overall blend density is respected.	

Fillers	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
Material	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.	In the UK and Ireland metal and glass parts in pumps are deemed not recyclable, according to the On-pack recycling label.
Seals	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.	
Functional closures	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).	

DECORATION		Country specifics
Printing/ Inks	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 inks containing components of the EuPIA exclusion list, as well as bleeding inks.	
Sleeves/ Labels	Labels or IML are made of PP (the lack of adhesives has a positive effect on recycling). Labels or IML made of PE or paper respect a coverage on face of less than 70%. Absorbent pads in trays/bowls must be completely removable. PE/PP label with densities > 0.95 g/cm³, cups with cardboard wrappers show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are PET sleeves with densities < 1 g/cm³.	
Adhesives	Water-soluble adhesive applications are used. Its use is minimised and the removability respected. 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 PACKAGES

such as

Bottles Cups Trays/ shells Buckets/canisters/ jugs

ALDI'S ACCEPTANCE OVERVIEW

Packaging type	ALDI Nord							ALDI SOUTH										
																		Only Shanghai
	✓	✗	✗	✓	✗	✗	✗	✓	✓	✗	~	✗	✗	✗	✗	✗	✗	✗
	France: The French Regulation (Climate law August 2021) ban the PS packaging that are not recyclable by 2025. **Australia:** Current PS recycling will be phased out by 2025 as part of the SUP Action Plan due to the low volumes and low economic value.																	
	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". ALDI's acceptance criteria of using PS packaging is currently very fragmanted in the ALDI operating countries, since the recycling infrastructure is very diverse.																	

In practice recyclable above ... mm																		
																		Only Shanghai
	40	50	40	50-60	20/ <60	80	50	20	50	50	n.a.	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.																	

DESIGN-FOR-RECYCLING GUIDE FOR PS PACKAGES

Colour code:

"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	PS is used for the body. Not compatible with recycling are multilayer-cups with a density from 1.0 to 1.08g/cm³.	France: The French Regulation (Climate law August 2021) ban the PS packaging that are not recyclable by 2025.
Colours	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.	
Barriers/ Coatings	Mono-layer material (PS) and no barriers are used. EVOH and PA barrier layers are compatible for recycling.	
Fillers	Only compatible additives (thermal stabilisers, UV stabilisers, antistatic agents, lubricants, pigments, impact modifiers, chemical blowing agents) are used. Mineral fillers, such as Talc, $CaCO_3$ and TiO_2, 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	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.	
Seals	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	Additional components, such as lidding films or slip-on lids, are made of the same material type as the body (OPS).	

DECORATION		Country specifics
Printing/ Inks	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 inks containing components of the EuPIA exclusion list.	
Sleeves/ Labels	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 show a limited recycling compatibility.	
Adhesives	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

such as

Films/ pouches

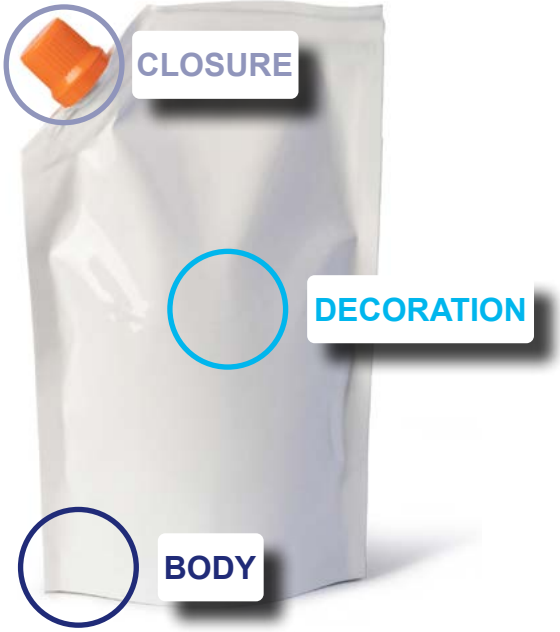
Tubes

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord								ALDI SOUTH									
Packaging type																		Only Shanghai
	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	✓	✓	✓	✓	✓	✓	✓	✓
	Luxembourg: Multilayer packaging, such as coffee-, crisps- and pet-food-bags, are excluded from collection. **Australia:** Recycling tubes only applicable for monomaterials. **UK:** Min. 90% PE; metallisation no more than 0.1 micron (OPRL).																	
	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".																	

In practice recyclable above ... mm																		
																		Only Shanghai
	40	50	40	50-60	20/ <60	80	50	20	50	50	n.a.	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.																	

DESIGN-FOR-RECYCLING GUIDE FOR PE-BASED FILMS/POUCHES



Colour code:

"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	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.	In Germany, there are exemptions to PA for coextruded PE films (minimum standard).
Colours	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).	
Barriers/ Coatings	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-, PVDC, PVC-, PVOH-, aluminium film-layer, as well as non-polymer-barriers (except SiOx/AlOx/metallisation).	In Germany, there are exemptions to PA for coextruded PE films (minimum standard).

Fillers	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.	In France, a malus is charged for using mineral fillers > 4%.

CLOSURE		Country specifics
Material	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.	
Seals	Seals with a density < 1 g/cm³ are used: PE-HD, PE-MD, PE-LD.	
Functional closures	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
Printing/ Inks	Direct printing is compatible for recycling. EuPIA GPM must be respected. Not compatible with recycling are inks those bleeds.	
Sleeves/ Labels	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 (d > 1 g/cm³) that cannot be removed under cold wash-off conditions (40°C), metal film labels.	
Adhesives	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 (d > 1 g/cm³) that cannot be removed under cold wash-off conditions (40°C).	

4.8 PP-BASED FILMS/POUCHES

such as

Films/ pouches

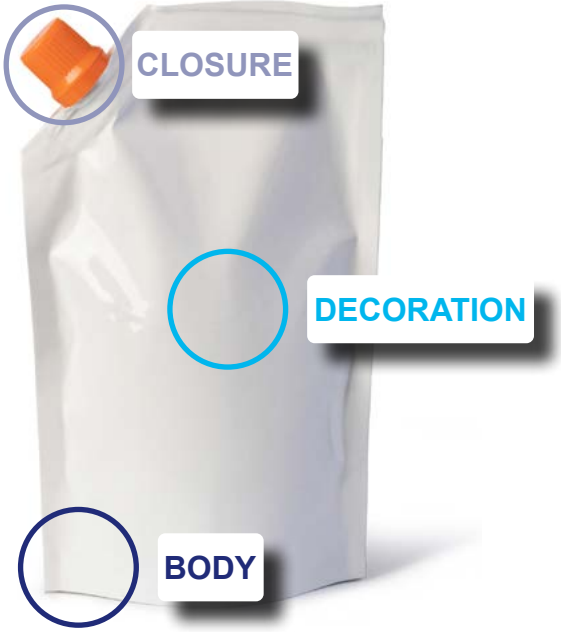
Tubes

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord									ALDI SOUTH								
Packaging type																		Only Shanghai
	~	~	~	~	~	~	~	✓	✓	~	~	✓	~	~	✓	~	~	~
	Australia: Recycling tubes only applicable for monomaterials. **UK:** Min. 90% PP; metallisation no more than 0.1 micron (OPRL). **US:** Whenever, PE flexible solutions are possible transferring to this material is preferred.																	
	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". 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.																	

In practice recyclable above ... mm																		
																		Only Shanghai
	40	50	40	50-60	20/ <60	80	50	20	50	50	n.a.	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.																	

DESIGN-FOR-RECYCLING GUIDE FOR PP-BASED FILMS/POUCHES



Colour code:

"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	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.	
Colours	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).	
Barriers/ Coatings	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-, PVDC, PVC-, PVOH-, aluminium film-layer, as well as non-polymer-barriers (except SiOx/AlOx/metallisation).	

Fillers	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	

CLOSURE		Country specifics
Material	Polymer identical caps with a density < 0.995 g/cm ³ 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.	
Seals	Seals of PP with a density < 0.995 g/cm³ are used.	
Functional closures	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.	

DECORATION		Country specifics
Printing/ Inks	Direct printing is compatible for recycling. EuPIA GPM must be respected. Not compatible with recycling are inks those bleeds.	
Sleeves/ Labels	Unnecessary decorations should be avoided. Labels made of PP are compatible for recycling. HD-PE- and MD-PE-labels, as well as paper labels are compatible for recycling. LD-PE labels show a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are adhesive paper labels and plastic labels (d > 1 g/cm³) that cannot be removed under cold wash-off conditions (40°C), metal film labels.	
Adhesives	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 (d > 1 g/cm³), where adhesives cannot be removed under cold wash-off conditions (40 °C).	

4.9 LIQUID PACKAGING BOARDS

such as

Liquid boards

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord								ALDI SOUTH									
Packaging type																		Only Shanghai
	✓																	
	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".																	

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.

DESIGN-FOR-RECYCLING GUIDE FOR LIQUID PACKAGING BOARDS

Colour code:

"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	Body is made from PE/cardboard or PE/cardboard/aluminium. Not compatible with recycling are wet strength papers with limited pulpability.	
Colours	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.	
Barriers/ Coatings	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.	

Fillers	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.	

CLOSURE		Country specifics
Material	Poly-Al compatible plastic closures (HD-PE/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).	The European SUP Directive instructs Member States to prohibit products made from oxo-degradable plastics.
Seals	Non-paper components are minimised and easy to separate from the fibrous material.	
Functional closures	Functional closures, such as dosing aids, are made of Poly-Al compatible (HD-PE/PP) material.	

DECORATION		Country specifics
Printing/ Inks	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.	In France, penalties for paper and cardboard printed with inks using mineral oils.
Sleeves/ Labels	Recycling compatible labels (plastic labels) are used.	
Adhesives	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

such as

Tinplate cans

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord								ALDI SOUTH									
Packaging type																		Only Shanghai
	✓																	
	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".																	

DESIGN-FOR-RECYCLING GUIDE FOR TINPLATE CANS

Colour code:

"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	Tinplate (mono layer material) is used for the body.	
Colours	Protective coatings are minimised and as conventional lacquer finishes compatible for recycling. Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list, as well as carbon black.	
Barriers/ Coatings	Mono-layer material (Tinplate) is used.	
Fillers	Not relevant.	

CLOSURE		Country specifics
Material	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	Plastic components (closures and valve caps) cause a limited recycling compatibility.	

DECORATION		Country specifics
Printing/ Inks	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	Unnecessary decorations are avoided. Paper labels or paper banderoles are used.	
Adhesives	Not relevant.	

4.11 ALUMINIUM PACKAGES

such as

Cans

Trays/ shells

Tubes (all aluminium tubes)

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord	ALDI SOUTH
Packaging type		Only Shanghai
	✓	
	Belgium: > 50 µm	
	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".	

DESIGN-FOR-RECYCLING GUIDE FOR ALUMINIUM PACKAGES

Colour code:

"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	Aluminium (mono layer material) is used for the body. Aluminium-composites show a limited recycling compatibility and should be avoided.	
Colours	Not compatible with recycling and strictly to be avoided are colours containing components of the EuPIA exclusion list.	
Barriers/ Coatings	Mono-layer material (Alu) with minimisation of lacquer layers. Protective coatings are minimised and as conventional lacquer finishes compatible for recycling.	
Fillers	Not relevant.	

CLOSURE		Country specifics
Material	Closures are made of aluminium. Plastic components (closures and valve caps) are minimised and easy to separate from the metal body.	
Seals	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).	
Functional closures	Plastic components (closures and valve caps) cause a limited recycling compatibility. Foreign objects such as "widget" nitrogen balls or valve caps should be avoided	Excluded from collection in: Netherlands.

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
Printing/ Inks	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.	In Germany higher fees are charged for composite packages.
Sleeves/ Labels	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%.	
Adhesives	Not relevant.	

4.12 PAPER-BASED PACKAGES: FOLDING BOXES BAGS, POUCHES, COMPOSITES

such as

Paper/ cardboard

Paper/cardboard coated

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord								ALDI SOUTH									
Packaging type																		Only Shanghai
	✓																	
	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".																	

Packaging type																		
																		Only Shanghai
	✓	✓	✓	~	✓	~	~	✓	✓	✓	✗	✓	~	~	~	~	✓	~
	Belgium: Laminated cardboard packaging, such as crisps and dried milk tubes or boxes that contain less than 85% paper fibre, are considered as obstructive packaging and will be banned in the future. **Spain:** Metallised or plasticised paper is excluded from collection. **Poland:** Coated paper is excluded from collection. **Austria:** As long as the paper content exceeds 80% and the papers are not coated on one or both sides with paraffin or wax, they are to be assigned to the tariff category "Paper household" and to the separate collection for paper, cardboard, paperboard and corrugated board. **Australia:** PE (HDPE, LDPE, LLDPE), PP (PP, OPP, BOPP) or PET one-sided coatings and laminates can be used if less than 5% each (15% cumulatively) (PREP). **UK:** Tolerance levels for barrier coatings on card are 15% under 120gsm and 10% over 120gsm; lamination only on one side (OPRL). **US:** Clay coated paper is recyclable in the US. Double sided plastic coated rigid paper is not recyclable (H2R).																	
	The packaging is accepted, when 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".																	

The share of materials within a composite packaging can have direct impact on the calculation of licensing fees. An overview of classifications of such material thresholds are provided in Chapter 5. Please be aware that those thresholds do not affect the technical recyclability of composite packaging per se.

DESIGN-FOR-RECYCLING GUIDE FOR PAPER-BASED PACKAGES (FOLDING BOXES, BAGS, POUCHES, COMPOSITES)

Colour code:

"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	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.	
Colours	Colours are minimised and are in line with the EuPIA exclusion list. Colours containing components of the EuPIA exclusion list.	
Barriers/ Coatings	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	In Belgium laminated cardboard packaging containing less than 85% fibers are considered as obstructive packaging (higher fees are charged).

Fillers	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.	

CLOSURE		Country specifics
Material	No non-paper components are used. Non-paper components are minimised and easy to separate from the fibrous material. The use of magnetic closures should be avoided.	
Seals	Non-paper components are minimised and easy to separate from the fibrous material.	
Functional closures	Functional closures, such as dosing aids, are made of the same material as the main body.	

DECORATION		Country specifics
Printing/ Inks	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.	In France, penalties for paper and cardboard printed with inks using mineral oils.
Sleeves/ Labels	Labels should be avoided as far as possible. Recycling compatible paper labels are used. Plastic labels show a limited recycling compatibility.	
Adhesives	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

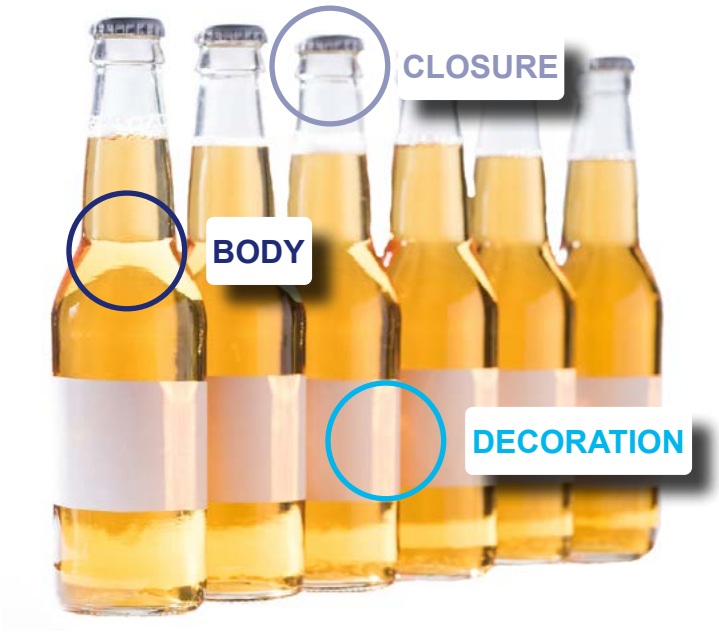
such as

Bottles Jars

ALDI'S ACCEPTANCE OVERVIEW

	ALDI Nord	ALDI SOUTH
Packaging type		
	✓	
	ⓘ **France:** Soda-lime glass packaging combined with infusible element (porcelain, ceramics, earthenware) is subjected to penalties. **Australia:** Clear, transparent amber and green glass is recyclable; Black, dark blues, ceramics and heat treated glass not recyclable. ⓘ	
	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".	

DESIGN-FOR-RECYCLING GUIDE FOR GLASS PACKAGES



Colour code:

"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	Container is made of transparent/translucent soda-lime-glass. For opal glass, the probability of being recycled is low, but does not represent an incompatibility Borosilicate glasses are only compatible to a limited extent depending on their heat resistance. Not compatible with recycling and strictly to be avoided are lead crystal, borosilicate glasses with high heat resistances.	
Colours	Standard glass colours in white, green and brown are used. Transparency must be ensured. Dark translucent colours have a limited recycling compatibility. Not compatible with recycling and strictly to be avoided are opaque colours shades, as well as surfaces with metallic effects.	
Barriers/ Coatings	No protective lacquers or protective films are used. Not compatible with recycling and strictly to be avoided are protective lacquers or protective coatings, that would interfere with the processing (cullet production).	
Fillers	Not relevant.	

CLOSURE		Country specifics
Material	Closures are made of metal (tinplate or aluminium). Closures made of plastics should be avoided. Not compatible for recycling and strictly to be avoided are non-ferromagnetic metal and ceramic closures.	
Seals	Non-glass and non-metal components are minimised and easy to separate from the glass container. Moulded materials (unrelated to glass) and ceramic attachments are not compatible for recycling. Not compatible for recycling are ceramic attachments.	
Functional closures	Functional closures are made of metal (tinplate or aluminium). Not compatible for recycling and strictly to be avoided are swing stopper with non-ferromagnetic metal components.	

DECORATION		Country specifics
Printing/ Inks	No coating lacquers are used. Coating lacquers are minimised and recycling compatible (transparency, cullet production). Not compatible with recycling and strictly to be avoided are lacquers leading to opacities (full-surface, opaque finishes) or low cullet rates.	
Sleeves/ Labels	Recycling compatible labels (paper or plastics) are used. Self-adhesive labels, permanent adhesive labels, bottles with textiles or net sleeves cause a limited recycling compatibility.	
Adhesives	Adhesives are minimised and label removability is respected. 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 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
• 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	• 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.

Packaging formats such as: Filling material (e.g. for non-food products), or ...

Bottles

Canisters/ Jugs

Pots/Trays/ Blisters

Cups

Tubes

Flexible foils/bags

	ALDI Nord	ALDI SOUTH
Packaging materials		
Plastics: PVC, PVDC EPS PLA PA PC PET (only flexibles*) Polymer structure with Aluminium layer (e.g. ABL tubes)	✕	✕
	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.** The listed packaging formats may be accepted and recyclable in the future, provided the infrastructure in our operating markets develop. 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 Jute Earthenware Wood Cellulose Textile (cotton, nylon, polyester)	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.

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)	2.0517 €/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 INDIVIDUAL 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 packaging:

- Plastic cans with metal bottom or top
- Oxo degradable 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;
- Laminated plastic packaging with aluminium film (beverages, fruit and vegetables, prepared dishes, pet food, maintenance products and body care);
- **Laminated cardboard packaging** of chips and milk powders with metal or plastic bottom or top

For **plastic cans with a metal bottom** or top and **oxo-degradable packaging** the dissuasive rate applies immediately. For the other three listed packaging types a tempory exemption is made and a transitional period (necessary for technical conversions) was granted. Companies had to prove by the end of 2022 that they have started the transition process of the obstructive packaging and are exempt from paying the dissuasive rate for two years.

The highest fee (**2.8965 EUR/kg** excl. VAT) has to be paid for those types of packaging.

GREEN DOT RATES 2023 PER MATERIAL (EXTRACT)

MATERIAL - RECYCLED	RATE (€/kg) excl. VAT
Glass	0.0581
Paper-cardboard (> 85%)	0.0781
Steel (> 50%)	0.0140
Beverage cartons	0.6170
PET – bottles and flasks (transparent colourless)	0.3125
PET – bottles and flasks (transparent blue)	0.4336
PET – rigid packaging other than bottles and flasks (transparent)	**0.7431**
HDPE – Bottles, flasks and other rigid packaging	0.4226
PP – Bottles, flasks and other rigid packaging	0.6314
PS – Hard packaging, except for EPS	0.3832
PE – films	1.2854
Other plastics – Films, except for compostable, aluminium laminates and plastic films containing at least 95% PE	1.3757
Valorised materials; PET trays opaque, EPS, compostable plastics (e.g., PLA), aluminium laminates, fibre based composites (< 85 % total paper fibre), wood, cork, etc.	2.0517
Obstructive packaging	**Rate (EUR/kg) excl. VAT**
Household packaging that obstruct the collection, sorting or recycling	**2.7514**

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

6.2 FRANCE - THE BONUS/PENALTY SYSTEM (CITEO)

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 2023 based on material families

MATERIAL	RATE IN ct. €/kg
Steel	4.99
Aluminium	13.03
Paper/cardboard	17.07
Food and beverage cartons (Brick)	25.82
Glass	1.27
Clear PET bottles and dispenser bottles (B&DB)	33.04
PE bottles and dispenser bottles	35.95
PP bottles and dispenser bottles	35.95
Dark/coloured PET bottles and dispenser bottles	35.78
Rigid PE packaging (except B&DB)	35.95
Rigid PP packaging (except B&DB)	35.95
Rigid PET packaging (except B&DB)	38.91
Flexible PE packaging	42.21
PS rigid packaging	45.44
Flexible PP packaging	48.74
Composite packaging or other plastic resins except PVC	55.28
Packaging containing PVC	65.36
Other materials	
Unprocessed materials from renewable resources and sustainably managed resources with recycling stream or organic recovery under development (wood, cork)	37.58
No stream but suitable for energy recovery (textiles, other materials, etc.)	49.02
No stream and unsuitable for energy recovery (earthenware, porcelain, ceramics)	57.19

Figure: Differentiated rates by material (Source: CITEO The 2023 rate for recycling household packaging)

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.

MATERIAL	PENALTY	MAIN ISSUES
Level 1 penalties with a 10% rate		
Rigid plastics	Bottles, dispenser bottles and other rigid plastic packaging with a density lower than 1	Loss of material
Rigid PET plastics	Bottles, dispenser bottles and other rigid plastic packaging with rigid plastic of d > 1	Loss of material
PET bottles and dispenser bottles (New 10% penalty with an increase to 50% scheduled for 2024.)	PET bottles and dispenser bottles with an unperforated PETG, PLA or PS sleeve	Loss of material and quality of recycled material
Level 2 penalties with a 50% rate		
Glass	Glass packaging with a non magnetic steel closure system	Quality ofrecycled material, damage to industrial equipment and operator safety
Rigid plastics	Bottles, dispenser bottles and other dark rigid plastic packaging that is undetectable by optical sorting	Loss of material during the sorting stage
PET bottles and dispenser bottles	PET bottles and dispenser bottles containing glass balls	Quality of recycled materials and damage to industrial equipment
Paper/cardboard packaging	Paper/cardboard packaging printed with inks manufactured using mineral oils	Quality of recycled materials
Level 3 penalties with a 100% rate		
Rigid PET packaging	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 d > 1	Quality of recycled materials and damage to industrial equipment
PVC bottles and dispenser bottles	Plastic packaging included in the national sorting instructions but not recyclable and not recoverable	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
Cardboard	Reinforced cardboard packaging	Damage to industrial equipment

Figure: Graduated Penalties (Source: CITEO The 2023 rate for recycling household packaging)

It should be noted that the penalties cumulate between each level of penalty.

Premiums

According to the CITEO rate list for 2023 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
Recycled Paper/Cardboard	29.54
Recycled Glass	10.86
Recycled Aluminium	57.86
Recycled Steel	80.26
Recycled Rigid Plastic	102.72
Recycled Flexible Plastic	102.72
Non Recycled Plastic	**292.03**
Beverage Plastic Bottles – PET	102.72
Beverage Plastic Bottles – Other Plastics	102.72
Non Beverage Plastic Bottles	102.72
Recycled Wood	13.03
Recycled Composite	102.72
Non Recycled Composite	**292.03**
Non Recycled Other	**292.03**

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.

From **January 2023 a further segmentation of plastic packaging** with 9 levels come into force:

MATERIAL	CONTRIBUTION €/t (from 1st July 2022)	CONTRIBUTION €/t (from 1st January 2023)	CONTRIBUTION €/t (from 1st July 2023)
Steel	8 €/t	5 €/t	5 €/t
Aluminium	7 €/t	5 €/t	5 €/t
Paper	Level 1 (Basic): 5 €/t Level 2 (CPL): 25 €/t Level 3 (mixed type C): 115 €/t Level 4 (Mixed type D): 245 €/t	5 €/t 25 €/t 115 €/t 245 €/t	5 €/t 25 €/t 115 €/t 245 €/t
Wood	9 €/t	8 €/t	8 €/t
Plastics	Level A1: 60 €/t Level A2 : 150 €/t Level B1: 20 €/t Level B2: 410 €/t Level C: 560 €/t	Level A1.1: 20 €/t Level A1.2: 60 €/t Level A2: 150 €/t Level B1.1: 20 €/t Level B1.2 : 20 €/t Level B2.1: 350 €/t Level B2.2: 410 €/t Level B2.3: 555 €/t Level C: 560 €/t	Level A1.1: 20 €/t Level A1.2: 90 €/t Level A2: 220 €/t Level B1.1: 20 €/t Level B1.2: 20 €/t Level B2.1: 350 €/t Level B2.2: 477 €/t Level B2.3: 555 €/t Level C: 560 €/t
Bioplastic	294 €/t	170 €/t	170 €/t
Glass	29 €/t	23 €/t	23 €/t

* Planned increase as of July 2023

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

For plastics, currently 9 levels are distinguished:

- **Level A1.1 i**ncludes 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	2021 €/kg excl. VAT	2022 €/kg excl. VAT	2023 €/kg excl. VAT
Glass	0.0192	0.0230	0.0161
Paper/Cardboard (≥ 85%)	0.0786	0.0457	0.0444
Drinking cardboard	0.3721	0.3690	0.3269
Steel (≥ 50%)	0.0470	0.0162	0.0107
Aluminium (≥ 50% and ≥ 50µ)	0.0541	0.0526	0.0286
PET - Bottles and flasks - transparent - colourless or slightly blue	0.3316	0.2515	0.1226
PET - Bottles and flasks - transparent - dark blue or green	0.3316	0.4424	0.3593
Bottles and flasks - transparent - other colours	0.3316	0.5862	0.3821
PET - Bottles and flasks - opaque	0.3316	0.5862	0.3853
HDPE - Bottles, flasks and other rigid packaging	0.3652	0.2750	0.1538
PE - Films	0.6285	0.4495	0.4292
Bottles, flasks and other rigid packaging	0.6285	0.3441	0.2713
PS - Rigid packaging, except EPS	0.6285	0.4469	0.4601
Others recoverable	0.6285	0.9406	0.9628
EPS			0.2123
Others non recoverable	0.7009	1.0421	1.1624

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. The lower fee applies for rigid plastic packaging that is sorted and recycled without impediments and with a positive market value that leads in lower net costs for the Packaging Waste Fund "Afvalfonds Verpakkingen".

The fees are set each year. For 2023 the **lower fee** has been set at **0.79 €/kg**. This represents a discount of 0.26 €/kg (by 25%, respectively) on the **regular plastic fee** of **1.05 €/kg**.

Afvallfonds 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	2021 €/kg excl. VAT	2022 €/kg excl. VAT	2023 €/kg excl. VAT
Glass	0.056	0.048	0.060
Paper/Cardboard	0.022	0.022	0.012
Plastic (regular fee)	0.670	0.700	1.050
Plastic (lower rate)	0.410	0.440	0.790
Biodegradable plastic	0.670	0.700	1.050
Aluminium	0.110	0.160	0.160
Other metals	0.230	0.230	0.250
Wood	0.020	0.020	0.010
Beverage Cartons (Drink cartons)	0.470	0.640	0.700
Other material types	0.020	0.020	0.010
General rate	n/a	0.770	0.770

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 collective 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), collective or grouped packaging (secondary) or transport packaging (tertiary), regardless of format, size or material (plastic, metal, cardboard or wood).

A bonus-penalty system is anchored to modulate the financial contribution to collective extended producer responsibility programmes.

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/cm^3: 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
- Recovered material is pre-consumer plastic or post-consumer plastic

The tax is charged at a rate of **£200 per tonne**.

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
CaCO3	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
OPP	Orientated Polypropylene
OPRL	On Pack Recycling Label
OPS	Orientated Polystyrene, thermoformed PS
MPO	Mixed Polyolefins, generic term for PE and PP
PA	Polyamide, barrier plastic, e.g. Nylon

ABBREVIATION	EXPLANATION
PBL	Plastic barrier laminate
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	Polyethylene with low density
PEF	Polyethylene Furanoate. PEF is a polymer that can be an alternative for PET, partly or fully bio-based
PET	Polyethylene Terephthalate. The main application of PET is the production of blow-moulded bottles.
PET-A	Polyethylene Terephthalate, amorph
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	Polyvinylidenchloride, 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
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
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

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
- Austria
- Belgium
- France
- Germany
- Hungary
- Ireland
- Italy
- Luxemburg
- The Netherlands
- Poland
- Portugal
- Slovenia
- Shanghai
- Switzerland
- Spain
- United Kingdom
- 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 package 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 package 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 this guideline, the classification in "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

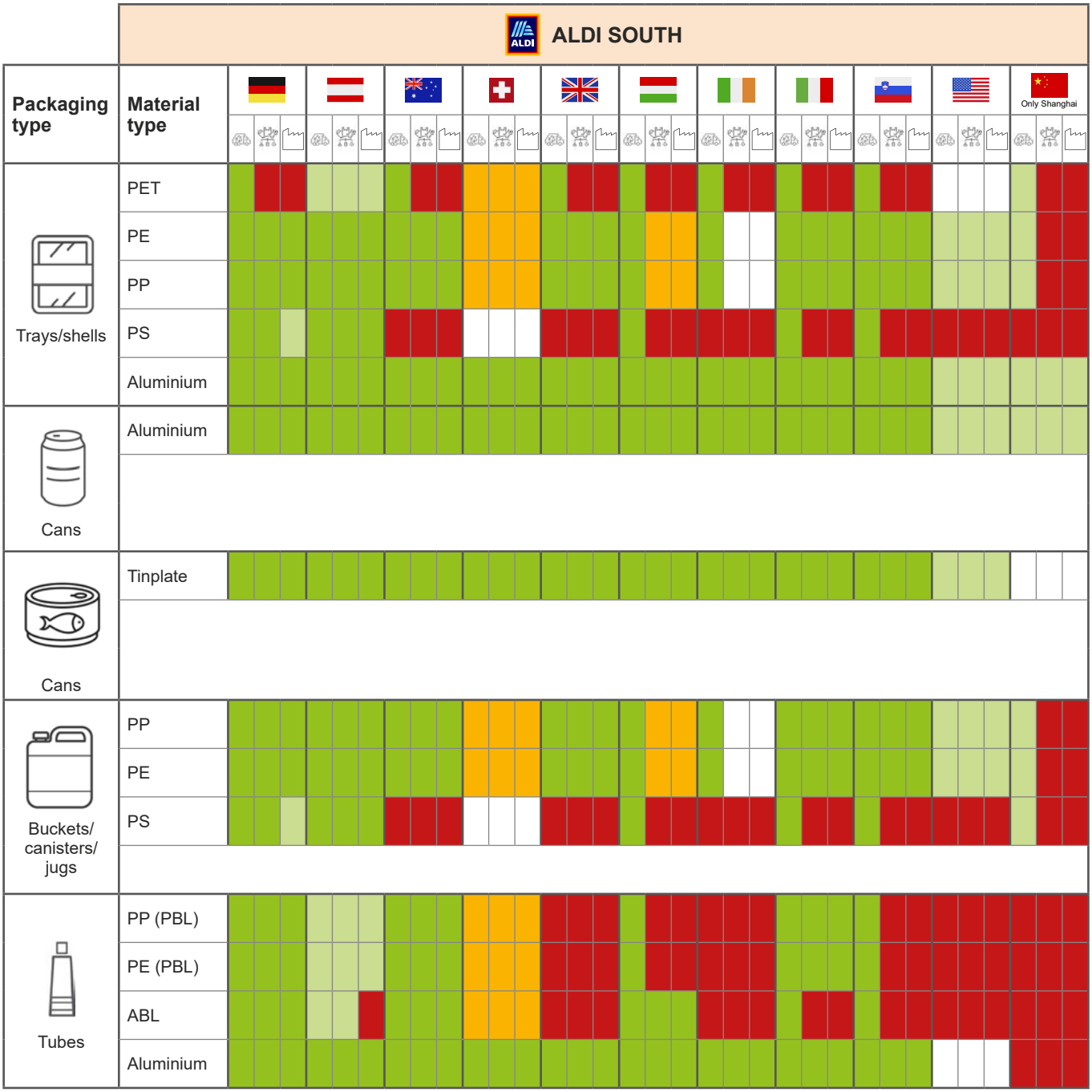
ALDI Nord

	Packaging type	Material type																									
Rigid and semi-rigid packs	Beverage bottle	PET clear, light blue																									
		PET coloured, transparent																									
		PET opaque																									
		PE-HD																									
		Glass																									
	Non-beverage bottle	PET clear																									
		PET coloured, transparent																									
		PET opaque																									
		PE																									
		PP																									
		PS																									
		Glass																									
	Jars	Glass																									
	Cups	PET																									
		PE																									
		PP																									
		PS																									

ALDI SOUTH
Only Shanghai
Packaging type
Material type
Beverage bottle
PET clear, light blue
PET coloured, transparent
PET opaque
PE-HD
Glass
Non-beverage bottle
PET clear
PET coloured, transparent
PET opaque
PE
PP
PS
Glass
Jars
Glass
Cups
PET
PE
PP
PS

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

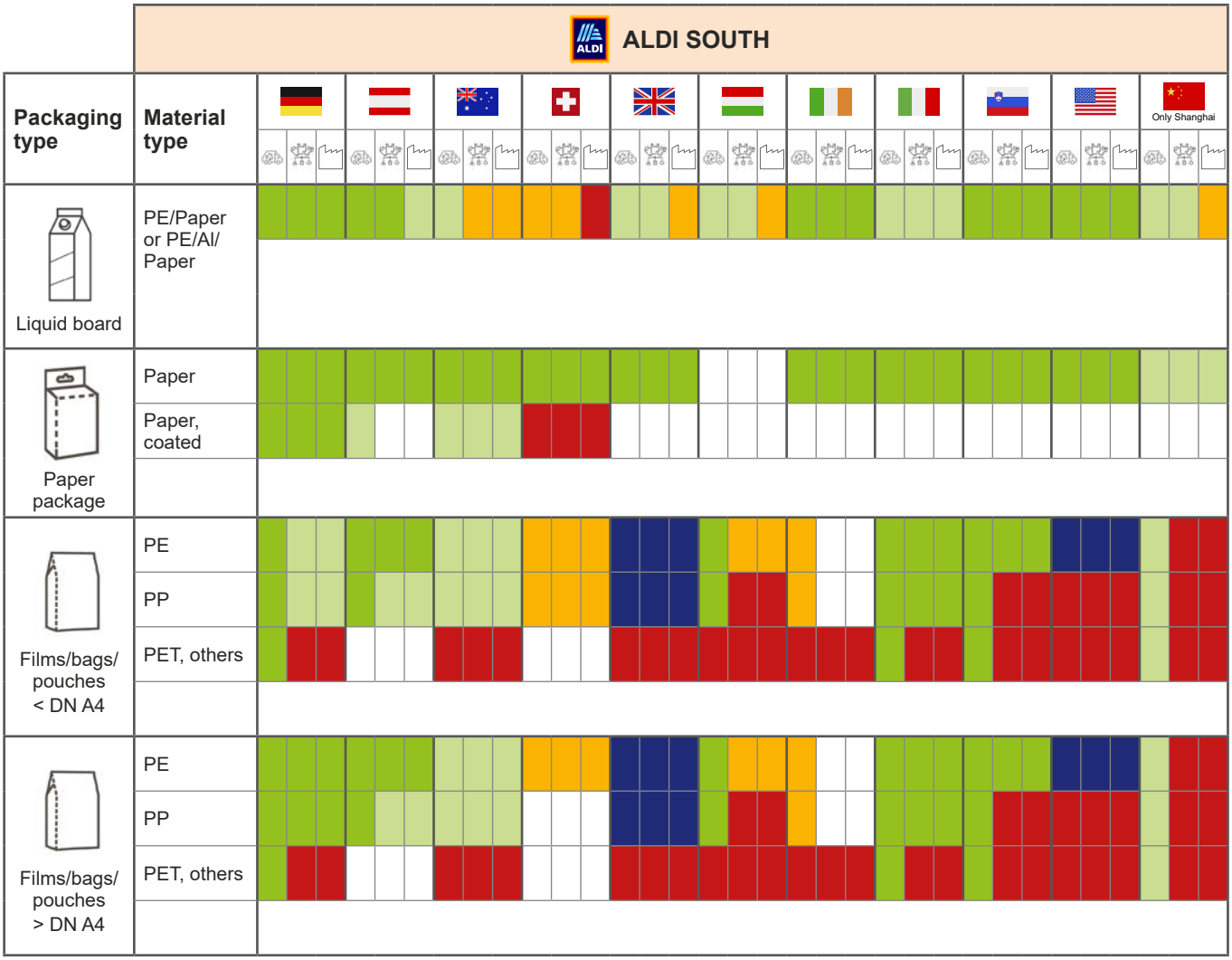

ALDI SOUTH
Only Shanghai
Packaging type
Material type
Trays/shells
PET
PE
PP
PS
Aluminium
Cans
Aluminium
Cans
Tinplate
Buckets/ canisters/ jugs
PP
PE
PS
Tubes
PP (PBL)
PE (PBL)
ABL
Aluminium

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																									
Rigid and semi-rigid packs	Liquid board	PE/Paper or PE/Al/ Paper																									
	Paper package	Paper																									
		Paper, coated																									
Flexible packs	Films/bags/ pouches < DN A4	PE																									
		PP																									
		PET, others																									
	Films/bags/ pouches > DN A4	PE																									
		PP																									
		PET, others																									


ALDI SOUTH
Only Shanghai
Packaging type
Material type
Liquid board
PE/Paper or PE/Al/ Paper
Paper package
Paper
Paper, coated
Films/bags/ pouches < DN A4
PE
PP
PET, others
Films/bags/ pouches > DN A4
PE
PP
PET, others

8.2 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. carbon black, 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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