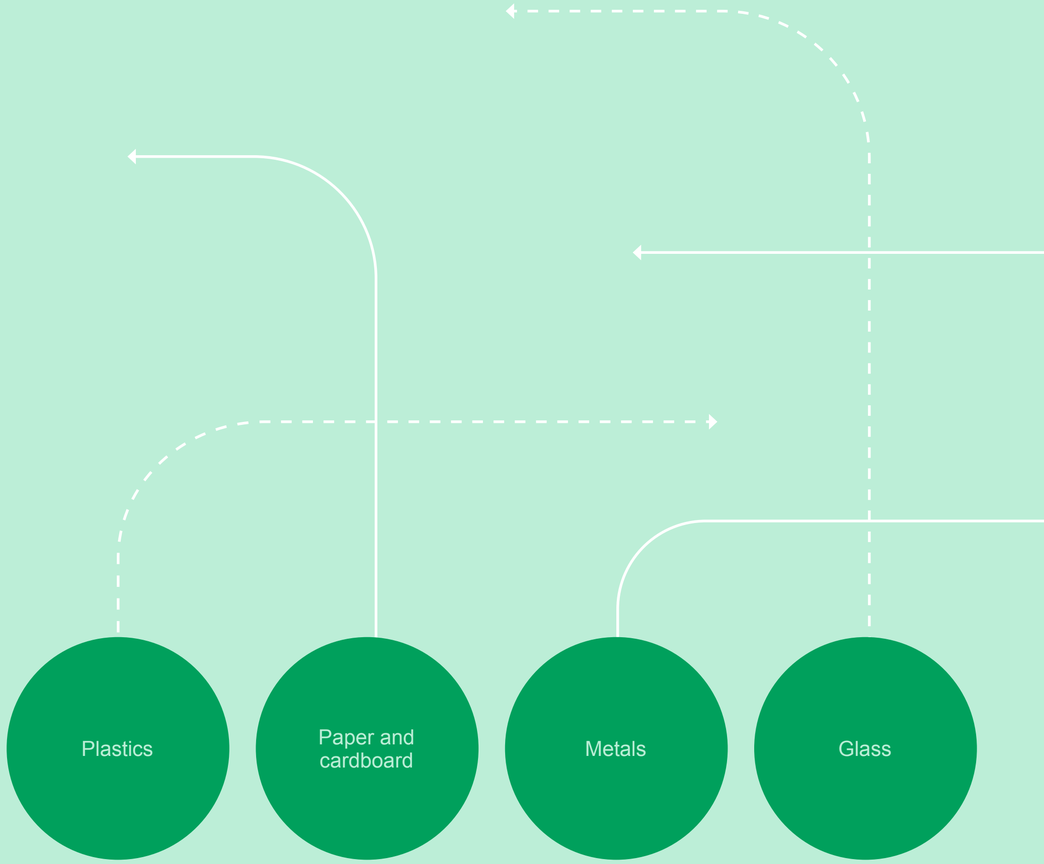
Éco Entreprises Québec

Packaging Recyclability Guidelines



OCTOBER, 2024

VERSION 1

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This is an interactive document. The top toolbar and contents buttons allow you to navigate through the different sections.

Disclaimers

This non-prescriptive guide was developed by Éco Entreprises Québec (ÉEQ) based on consensus drawn from international guides on recyclability. The content is intended as a synthesis of the existing knowledge on recyclability at the time of publication, taking into account the sorting, processing, and recycling infrastructures in Quebec. As curbside recycling modernizes, recycling infrastructures will expand and new recycling streams will be established. This guide will occasionally be updated from time to time to reflect these changes. The recyclability guidelines (RGs) will also be updated where necessary as knowledge of packaging materials evolves.

> This first version of the guidelines covers packaging only, not printed paper.

The RGs provide an overview of the potential ways that design can influence the behaviour of different packaging materials as they pass through the curbside recycling system. They aim to guide producers on best practices in packaging and printed paper ecodesign to maximize recyclability potential.

The RGs should not be seen as an obstacle to innovation. They aim to provide guidelines for the development of new technologies in line with the modernization of recycling infrastructures.

The reader is expressly advised of the following:

- ÉEQ does not manufacture, distribute, or supply any products, including packaging and printed paper. ÉEQ accepts no responsibility for the use of the RGs, including, but not limited to, any decisions regarding recyclability. For some materials, testing will be needed to determine how they perform in industrial infrastructure or the value chain.
- The RGs are a simplification of the practices of various players in the value chain. The simplification is meant for readers who are unfamiliar with the topic. As such, it does not account for the great variability of practices in the field and omits several more technical aspects.
- The RGs may not be used for marketing or certification purposes, including declaring that packaging or printed paper complies with the RGs.
- ÉEQ does not warrant that the contents of the RGs are accurate, comprehensive, or up to date. In particular, but without limitation, ÉEQ does not warrant that the RGs will remain up to date with the latest knowledge in the field. Readers are invited to have all information relevant to their packaging and printed paper design independently cross-checked by experts.

Objectives of the guide

Under the principle of extended producer responsibility (EPR), producers are at the heart of the curbside recycling system. From the perspective of the circular economy, they are fully responsible for the packaging and printed paper they put on the market, from design to recycling.

The purpose of this guide is to:

- → Ensure a better match between the materials put on the market and the recycling channels that are developing
- → Improve the quality and increase the value of recovered materials
- → Promote the achievement of the recovery and recycling targets set out in the Regulation respecting a system of selective collection of certain residual materials, CQLR, c. Q-2, r. 46.01 (the SC Regulation) for certain materials, i.e., cardboard, printed paper, fibre containers and packaging, rigid PET and HDPE plastics, other rigid plastics, flexible plastics, glass, ferrous metals, and aluminum.

In order to improve understanding of recyclability and enable producers, as well as business partners, to assess the recyclability potential of packaging, this guide:

- → Proposes a definition of recyclability that aligns with those of international bodies and includes four characteristics
- → Details the recycling process, with simplified illustrations and easy-to-understand explanations of how packaging is sorted (at the sorting centre), processed, and recycled
- → Demonstrates the real impact of design choices by presenting the challenges posed by certain packaging characteristics during the sorting, processing, and recycling stages
- → Offers design-for-recycling guidelines specific to different packaging materials

All the elements of this guide are also aimed at minimizing end-of-life management issues; increasing material recycling rates; and guiding producers in the selection of packaging, the improvement of existing packaging, and the design of new packaging.

Target audience

The guide is primarily aimed at producers who put packaging and printed paper on the market.

By extension, ecodesign and recyclability also affect several other players in the packaging and printed paper value chain:

- Packaging manufacturers, suppliers, and distributors
- Curbside recycling players (collectors, sorting centres, voluntary drop-off points and ecocentres, processors, recyclers)
- Employer and industry associations and other organizations
- Creative and marketing agencies
- Printers
- Research sector (research centres, CCTT)
- Ecodesign consultants and packaging specialists

Definition of recyclability

A number of international groups have proposed definitions of packaging and printed paper, such as the World Packaging Organization (international), the Ellen MacArthur Foundation (international), the Association of Plastic Recyclers (North America), and RecyClass (Europe), to name but a few. The definition of recyclability set forth by ÉEQ takes into account the common factors of these international standards, while respecting the regulatory requirements established by the SC Regulation:

> "**Ecodesigned** packaging and printed paper that are **collected** in the recovery bin[1], **sorted** at a sorting centre, and **recycled through an established market**."

Packaging and printed paper recyclability is based on thefollowing four characteristics:

Ecodesigned

The packaging and printed paper are obtained by applying ecodesign strategies so that it has greater recycling potential at the end of its life.

Collected

The packaging and printed paper are put in recovery bins so it can be diverted from the waste stream. To achieve this, it is not only necessary for all citizens to have access to a curbside recycling, but also for them to participate actively and appropriately in packaging and printed paper recovery. This participation can be encouraged by information, awareness, and education (IAE) campaigns aimed at the general public (such as Bac Impact), as well as by programs to label sorting instructions directly on packaging.

Sorted

The packaging and printed paper are sent to a sorting centre, where it undergoes various separation stages (depending on the existing sorting technologies) in order to produce bales of recovered materials that meet industry needs and standards based on established performance criteria (bale size, weight, and density, as well as permitted contamination levels).

Recycled

The packaging and printed paper are recycled through an **established** recycling and processing market, which uses state-of-the-art technologies to ensure that the collected materials meet industry needs and standards (purity, pigmentation, contamination, etc.). Established markets are essential if recycled materials from curbside recycling are to be used to replace virgin materials in the manufacture of new packaging, printer paper or other products. The established market, in turn, depends on a range of factors such as the quality and availability of recycled material, demand for recycled content, and price.

1 Certain types of packaging cannot be put in a recovery bin because they can present problems during collection or sorting. For this type of packaging, the collection method is voluntary drop-off, for example at an ecocentre.

Recyclability basics

Ecodesign proposes three main strategies for reducing the environmental impact of packaging and printed paper reduction, procurement, and recyclability. The aim of recyclability is to design packaging whose end-of-life recycling potential has been considered from the outset while still protecting and preserving consumer goods.

Packaging recyclability is a complex subject, but it is important to understand the fundamentals. This guide covers:

- The basics of the materials collection stage
- The main sorting stages in the sorting centre, as well as the issues surrounding packaging
- The main processing and recycling stages for each material (plastics, paper and cardboard, aluminum, ferrous metals, and glass), as well as the challenges encountered at these stages

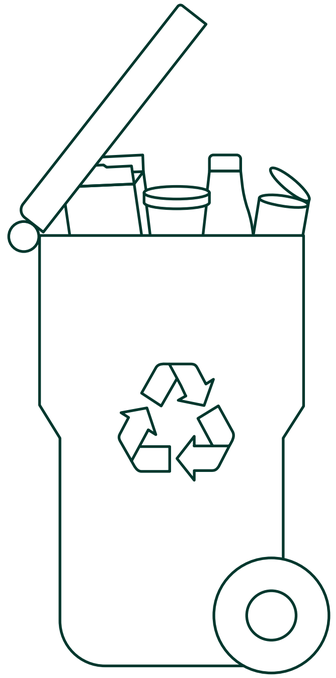
This general understanding of the curbside recycling system will allow packaging and printed paper ecodesign to be employed more thoughtfully to improve the quality of recovered materials and support the development of outlets.

Collection

Everywhere in Quebec, packaging and printed paper are collected in recovery bins. Some materials are not accepted in recovery bins because they can pose challenges during collection or sorting. These materials are typically dropped off at locations like ecocentres.

According to the list of accepted/rejected materials as of January 1, 2025, at present, two materials may only be recovered at drop-off points:

- **Empty aerosol containers:** have the potential to explode in collection trucks and sorting centres when compacted (especially if they are not completely empty) and may contaminate other materials
- **Polystyrene protectors:** crumbles into small beads in the collection truck due to compaction and friction, and can crumble during the sorting stages as well.

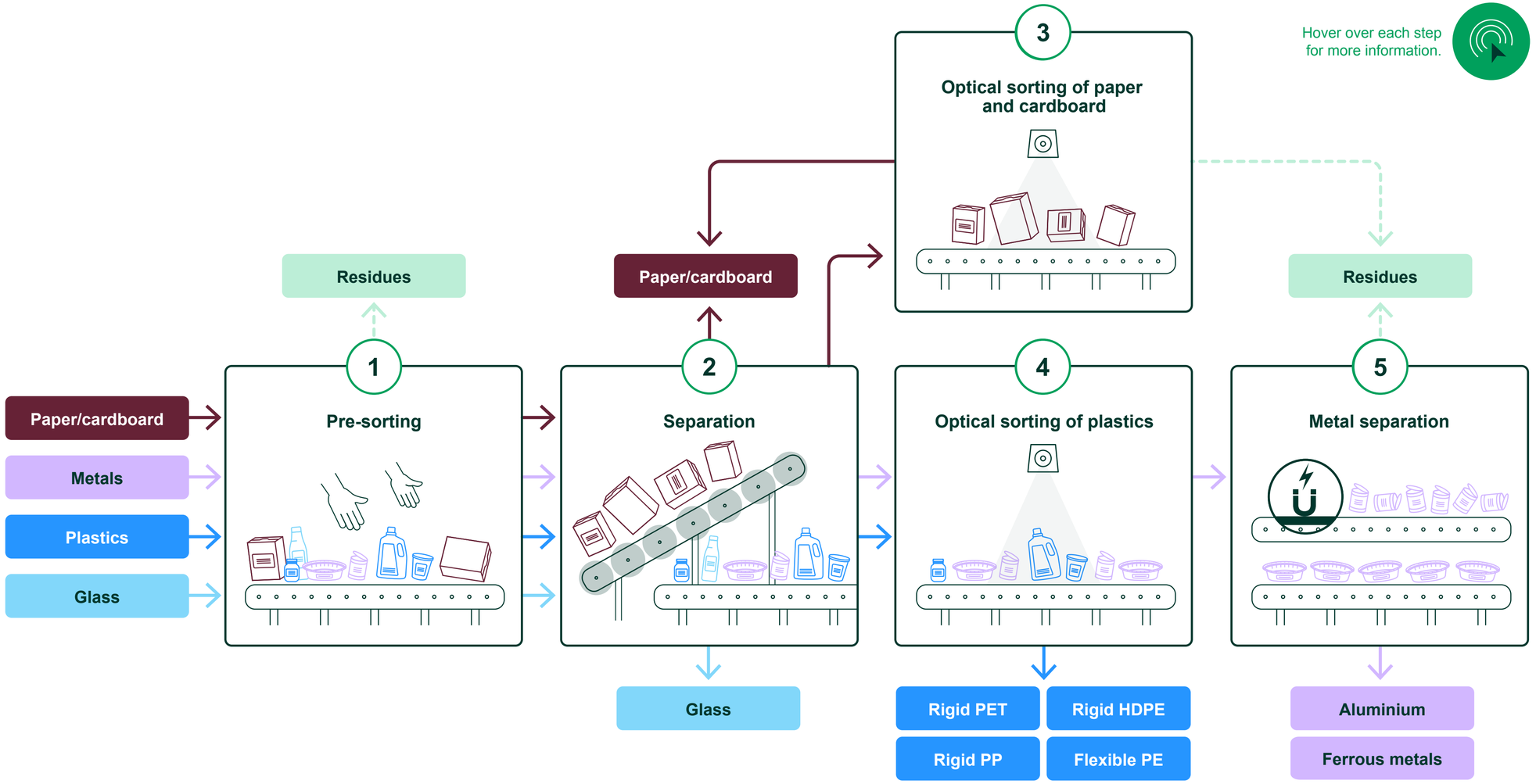


Sorting

To fully understand recyclability, we need to start by understanding how packaging travels through the sorting centre once it is collected. In general, the process for sorting materials (paper and cardboard, metals, plastics, and glass) has five (5) main steps[2]:

1. Pre-sorting
2. Separation
3. Optical sorting of paper and cardboard (mixtef fibres)
4. Optical sorting of plastics
5. Metal separation

Once these five (5) sorting stages have been completed, the sorted materials are baled. These bales are then sold to processors or recyclers, where they undergo further processing to prepare them to be partially or fully incorporated into new packaging or other products.



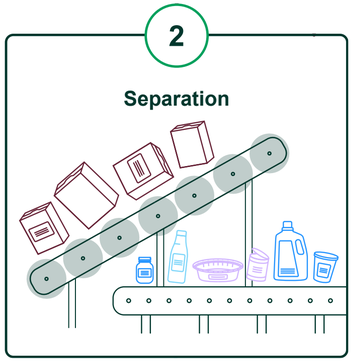
2 See the disclaimer on practice simplification.

3 Eddy current is used to separate aluminum by taking advantage of the material's electrical conductivity to induce temporary magnetism.

Sorting challenges

A general understanding of the sorting process and the technologies used in the sorting centre makes producers and manufacturers of packaged products aware of the complexity of this process. Certain packaging characteristics pose concrete challenges at certain stages of the sorting centre; this proves the importance of packaging design choices in the sorting process and the need to adjust design and production practices.

Here are a few examples of these challenges.

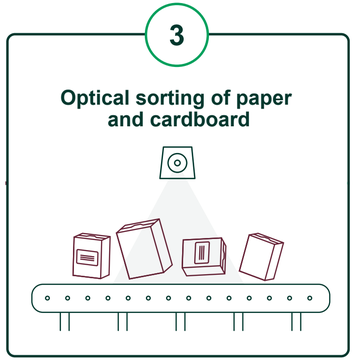


Size of packaging and associated components[4]

Packaging and associated components that are too small pass through the equipment during the separation stage, contaminating the glass separation line or being discarded

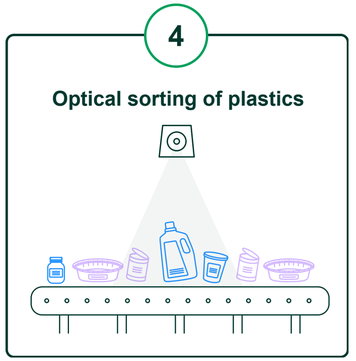
Plastic films

Because they are 2D, plastic bags and films end up in the paper/cardboard stream at the separation stage, becoming contaminants. Additional sorting equipment, such as optical sorting, is needed to separate them from paper/cardboard. Furthermore, optical sorting can only identify the outer layer of laminated films.



Pigmentation

The carbon black pigments used in some black plastic packaging, as well as undetectable dark pigments, interfere with their separation. The pigments absorb light, preventing traditional optical sorters from identifying them. Pigmentation also affects the quality of the recycled resin.



Label surface area coverage

The optical sorting stage aims to identify the predominant material of the packaging body, i.e., the material to be recycled. Labels that cover most or all of a container (such as sleeve labels) and are made of a different material than the container may prevent the optical sorter from reading the container properly, thus directing it to the wrong sorting line.

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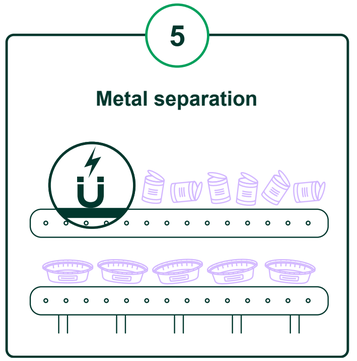


Packaging with metal components

Some multi-material packaging with metal components (such as cardboard tubes with metal lids and bottoms) can lead to material losses. Since metal separation can be done at several points during packaging sorting, metal components can be captured by magnets if they contain ferrous metals or by eddy current if they contain aluminum, even if the packaging is mostly made of cardboard or plastic. However, if the packaging is directed towards the metal stream, only the metal will be recycled; the other materials risk being lost or ultimately discarded.

4 Associated components include caps and other closures, films, security seals, adhesive tapes, windows, etc.

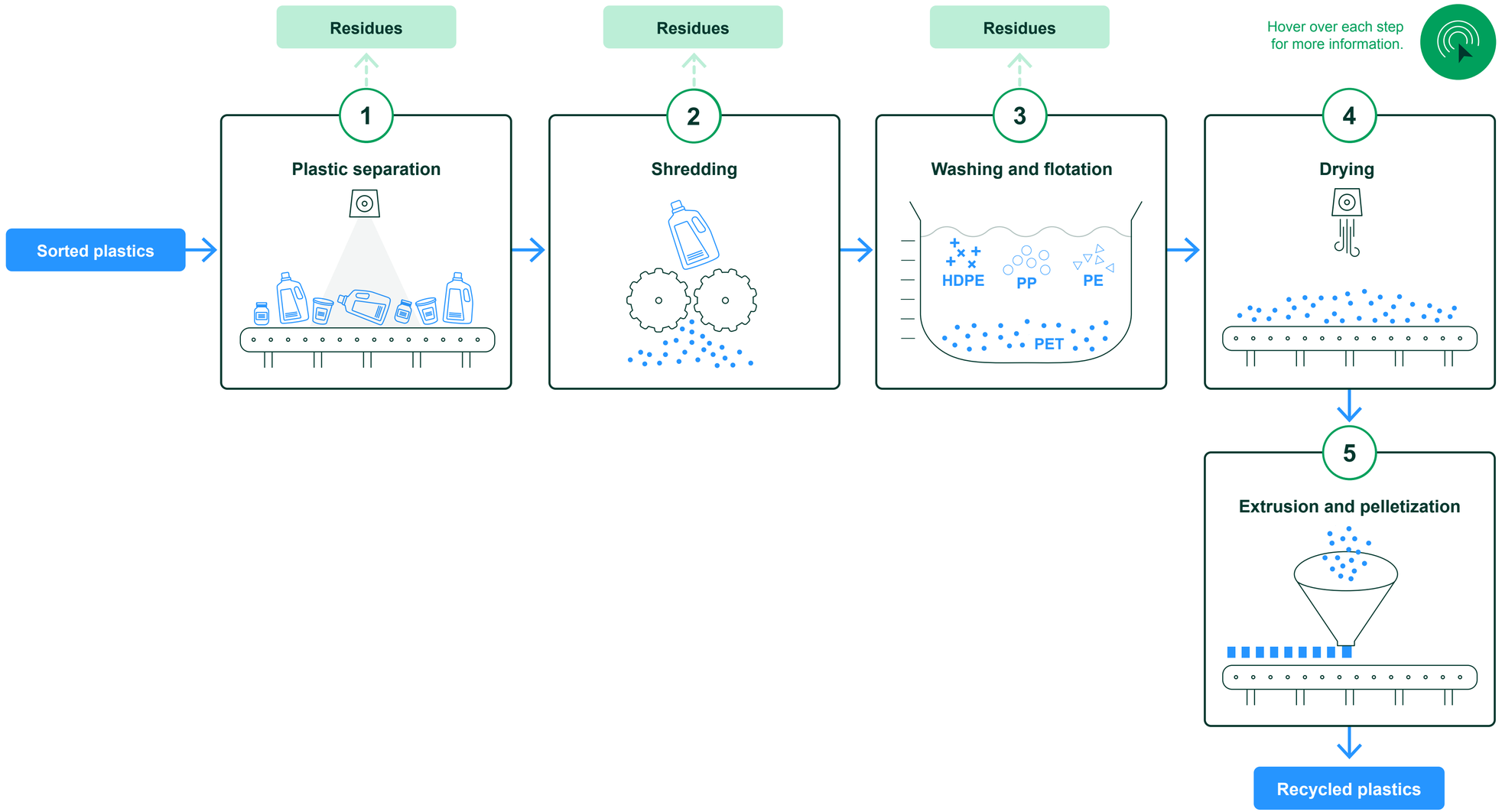
Processing and recycling

The bales of material from the sorting centres are sent to processors or recyclers, who then carry out the next processing steps to produce recycled materials[5].

Plastics

For plastics, the processing and recycling process is generally divided into five main stages.

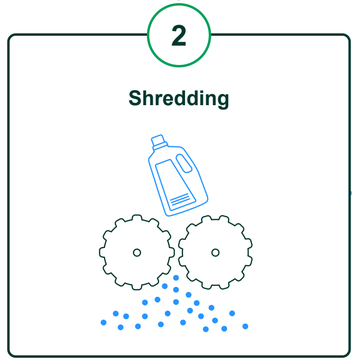
1. Plastic separation
2. Shredding
3. Washing and flotation
4. Drying
5. Extrusion and pelletization



5 See the disclaimer on pratice simplification.

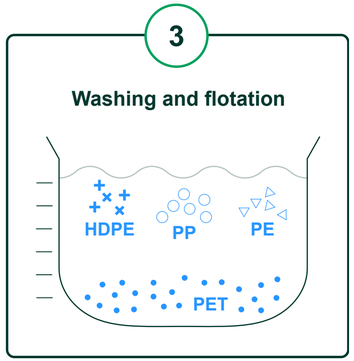
Challenges

The design choices for plastic packaging pose challenges at different stages of the processing and recycling process.



Metal components

Metal components, such as springs or ball bearings in spray cans, can damage shredding equipment.



Non-separable labels and associated components

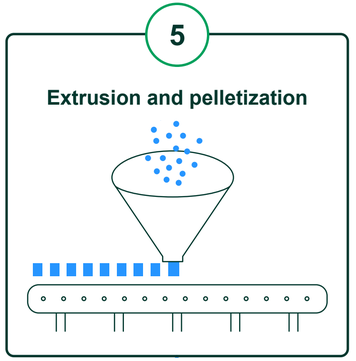
Labels and associated components that are made of a different resin or material from the main packaging, and that cannot be separated, become contaminants. They may affect the yield and quality of the recycled resin due to factors like pigmentation and difference in melting temperature.

Paper/cardboard labels

During the washing and flotation stage, paper/cardboard labels on plastic packaging are transformed into suspended fibres (pulp), requiring filtering and treatment of the tank water. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.

Density-changing coatings, barriers, and additives

Certain coatings and substances that serve as barriers (e.g., oxygen or moisture barriers) in packaging, as well as certain additives in plastic resins, can change the resins' density. This can cause issues at the flotation stage; for instance, if a polyolefin (HDPE, PP, or PE) would normally float but an additive causes it to sink instead, it will not be separated properly and will end up being discarded.



Packaging composed of multiple resins with different melting temperatures

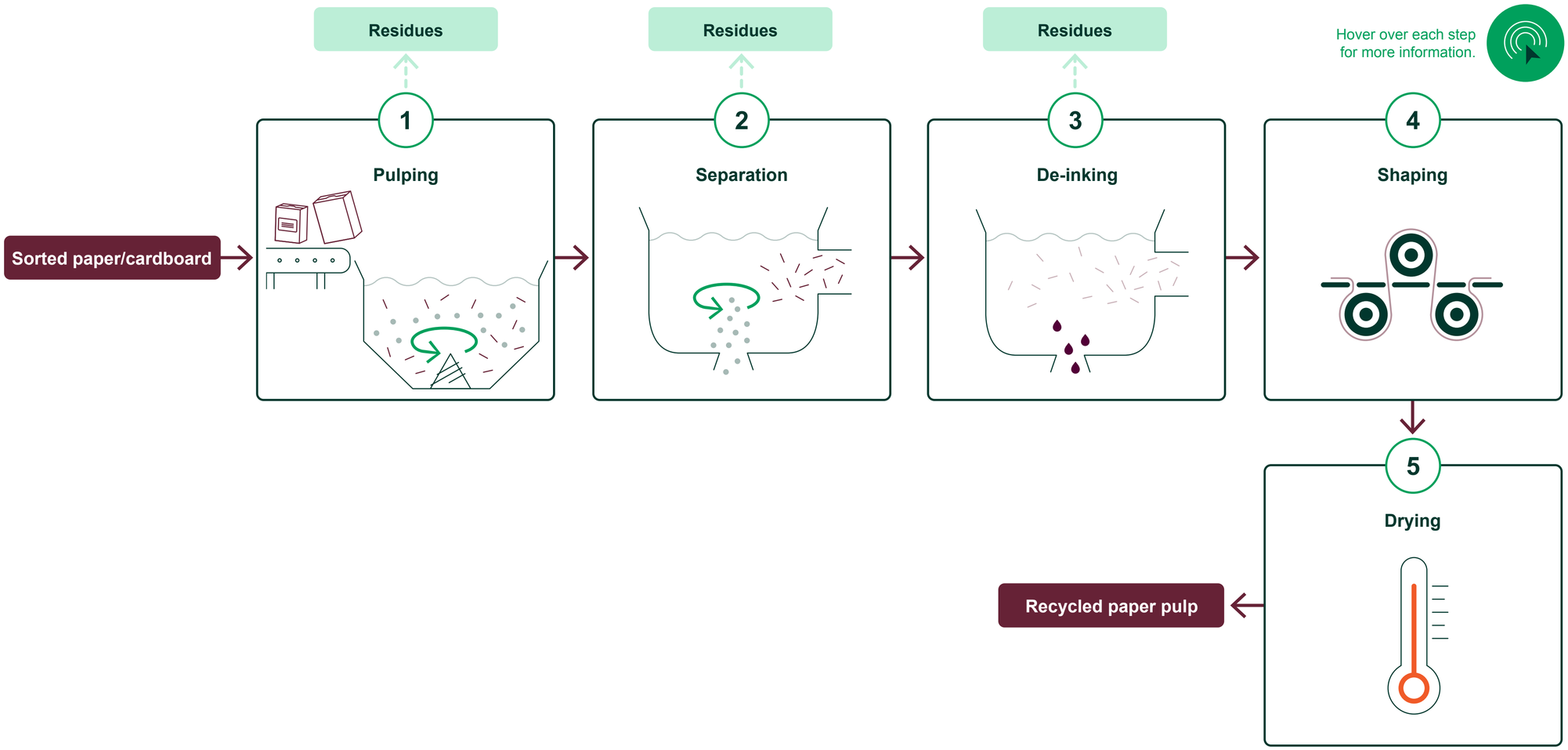
Packaging with coatings, barriers, and additives that do not change the density of the resin will be an issue at the extrusion stage rather than the washing and flotation stage. For example, multi-material packaging is problematic as it is made up of several layers of resins, each with different melting temperatures. During the extrusion process, if a resin is heated above its melting point, it may lose some of its physical, chemical, or mechanical properties, lowering the quality of the recycled material.

Processing and recycling

Paper and cardboard

For packaging made from paper and cardboard, the processing and recycling process involves re-pulping bales of paper and cardboard from sorting centres to produce recycled fibre. This is generally a five-step[6] process.

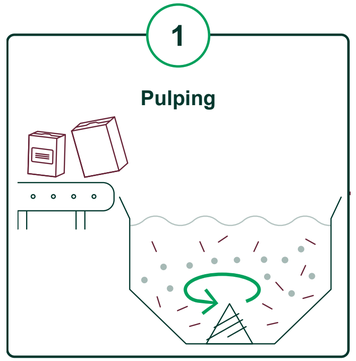
1. Pulping
2. Separation
3. De-inking
4. Shaping
5. Drying



6 The number of steps varies depending on the material, the processor, and the recycler.

Challenges

The design choices made for paper and cardboard packaging also affect the production of recycled fibre at the end of its life.

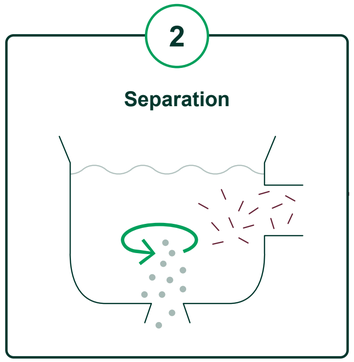


Unpulpable elements

Elements made of material that cannot be pulped, such as plastic or metal, separate during the pulping stage and are discarded, taking attached fibres with them, leading to fibre loss.

Loss of fibres

As with unpulpable elements, liners, barriers, and labels attached with adhesives come loose during the pulping stage and are discarded, taking attached fibres with them.

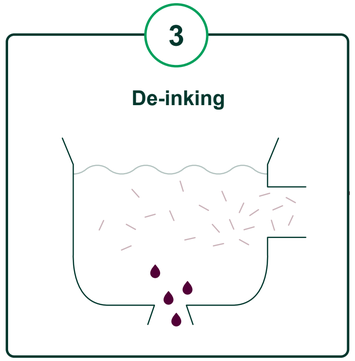


Loss of fibres

As with unpulpable elements, liners, barriers, and labels attached with adhesives come loose during the pulping stage and are discarded, taking attached fibres with them.

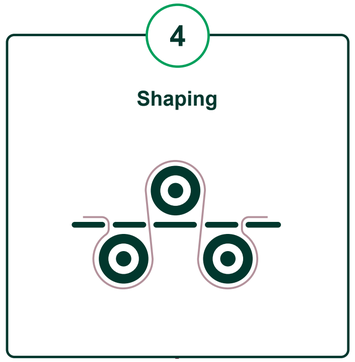
Residual contaminants

Some elements, such as label adhesives, can dissolve or remain suspended in water, becoming residual contaminants that affect the performance of equipment (drainage, shaping, etc.) and the quality of the recycled fibre. Other residual contaminants, such as PFAS (perfluoroalkyl and polyfluoroalkyl substances—“forever pollutants” used as water and grease barriers) can also pose health and safety issues.



Ink quantity

Packaging made from paper and cardboard sometimes contains a large quantity of ink, which can affect the colour of the recycled fibre. Depending on the nature of the recovered material and the outlet, a de-inking step may be necessary to emove inks and pigments.



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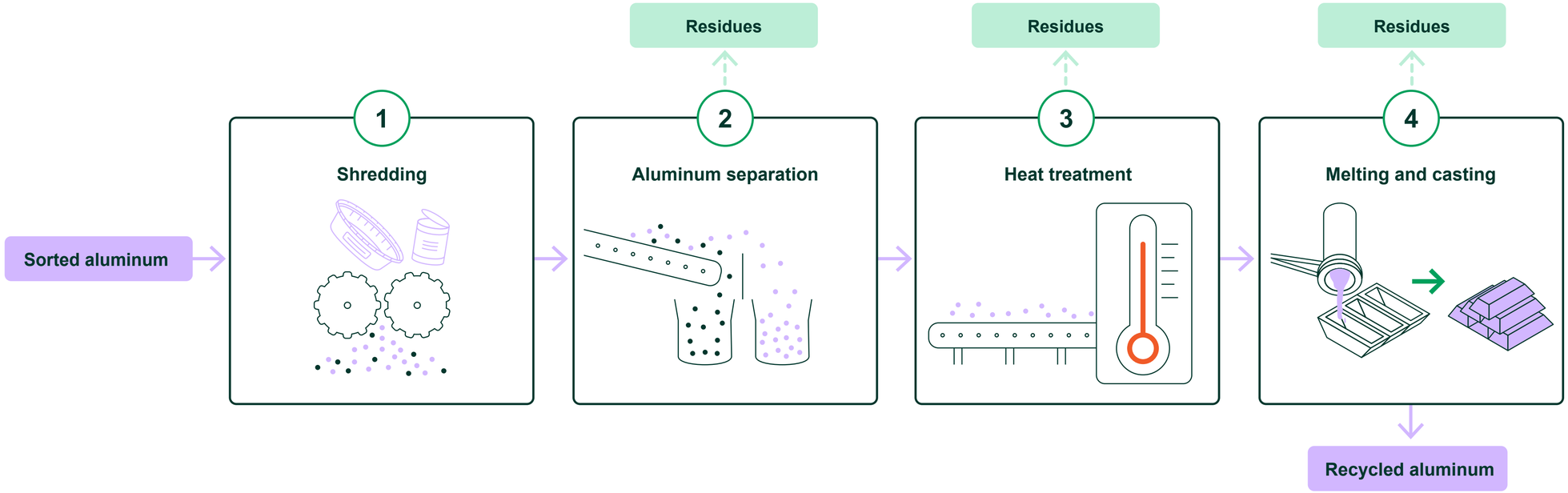
Processing and recycling

Aluminium

For aluminum packaging, the processing and recycling process is divided into four main stages.

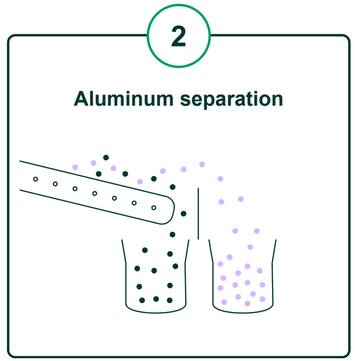
1. Shredding
2. Aluminum separation
3. Heat treatment
4. Melting and casting

Hover over each step for more information.



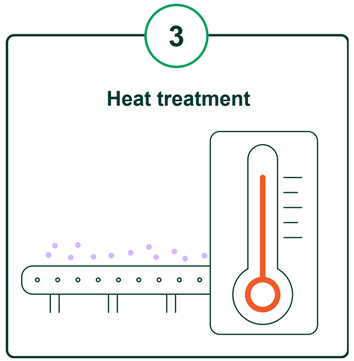
Challenges

The design choices made for aluminum packaging also affect the production of recycled aluminum at the end of its life.



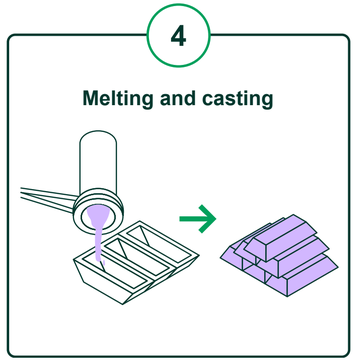
Other non-ferrous metals

Other non-ferrous metals can be found in aluminum bales, since they are also captured by the eddy current. Although they do not come from packaging, non-ferrous metals such as copper and zinc are difficult to separate from aluminum at the separation stage and are not compatible with its recycling.



Plastic labels and associated components

During the processing and recycling process, plastic residues can build up in equipment, increasing the risk of fire as plastic is flammable at high temperatures.



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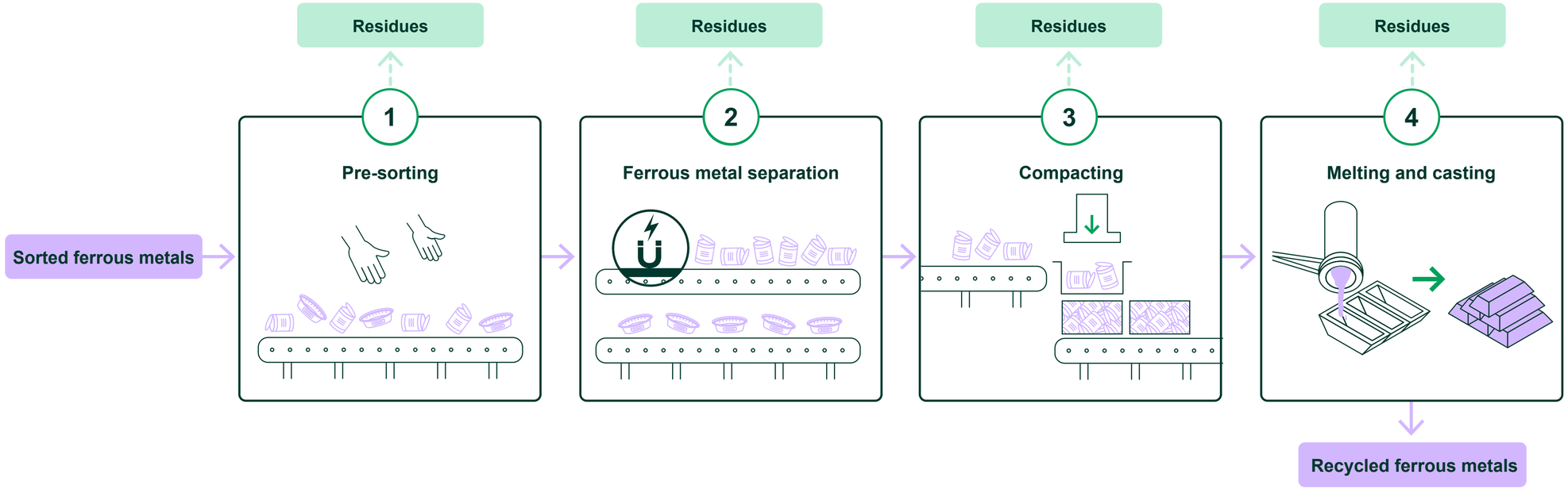
Processing and recycling

Ferrous metals

For packaging made of ferrous metals, the processing and recycling process is divided into four main stages.

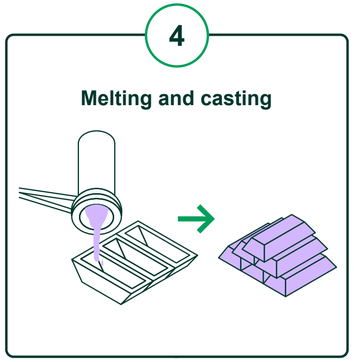
1. Pre-sorting
2. Ferrous metal separation
3. Compacting
4. Melting and casting

Hover over each step for more information.



Challenges

The design choices made for ferrous material packaging also have an impact on the production of recycled material at the end of its life.



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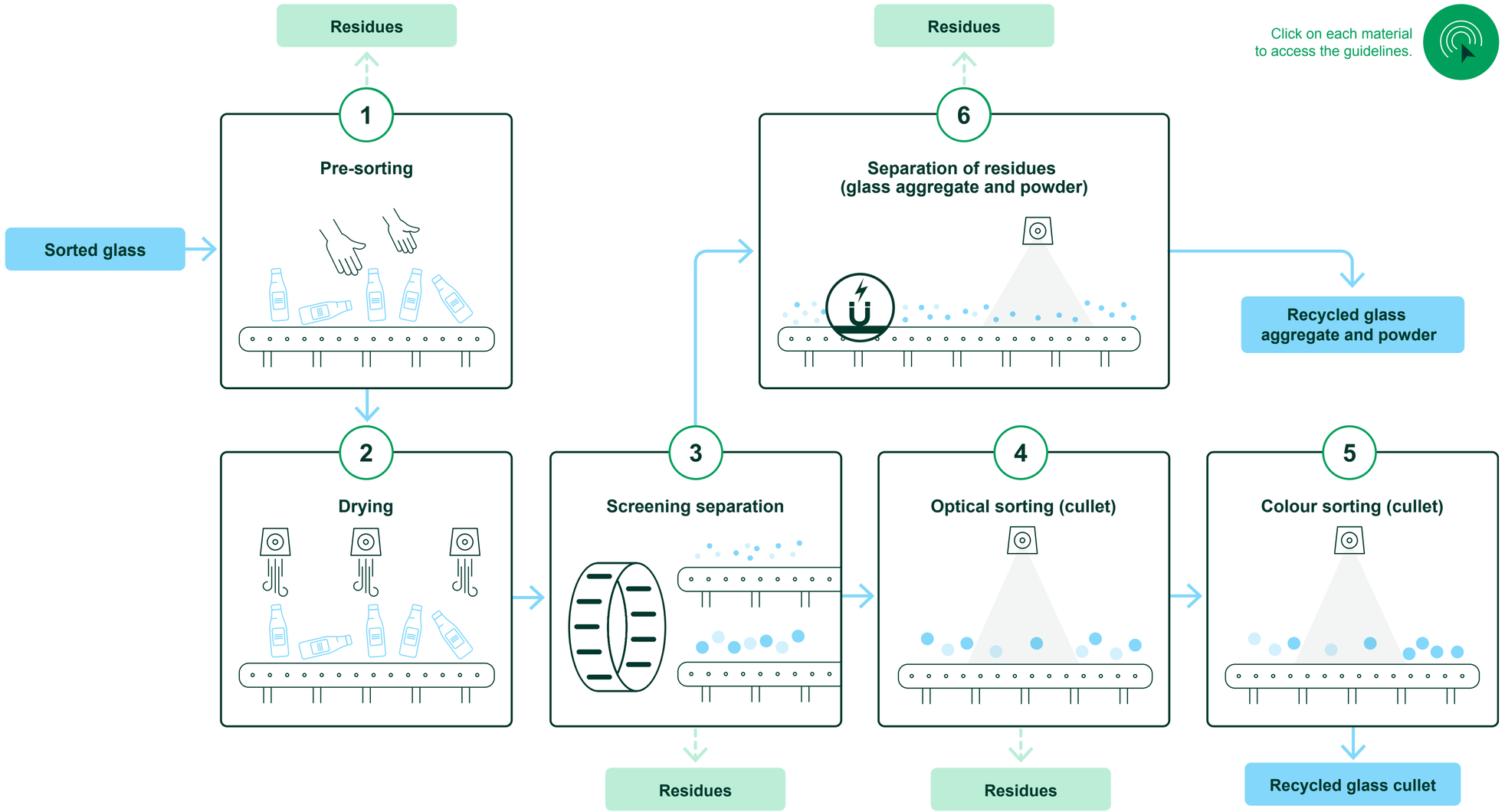
Processing and recycling

Glass

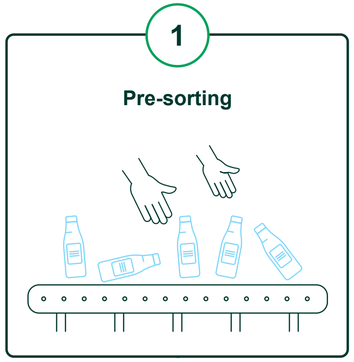
For glass, the processing and recycling process is divided into six main stages.

1. Pre-sorting
2. Drying
3. Screening separation
4. Optical sorting (cullet)
5. Colour sorting (cullet)
6. Separation of residues (glass aggregate and powder)



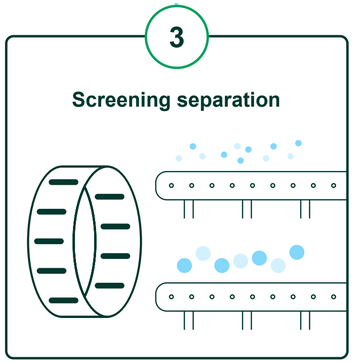
Challenges

Certain characteristics of glass packaging pose challenges at different stages of packaging and recycling.



Label adhesives

In addition to the pre-sorting and screening stages, some processors and recyclers include a friction removal stage for labels, the success of which depends on the adhesives used. If the labels do not come off easily, they can lead to glass loss and lower the quality of the recycled glass.



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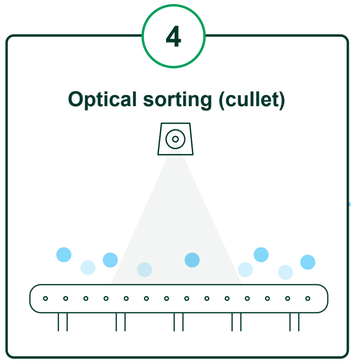
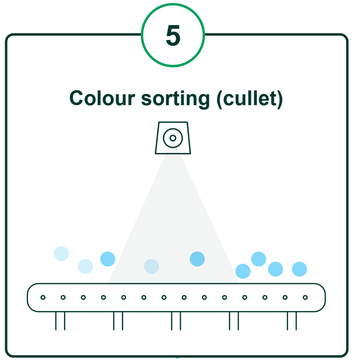


Opaque or painted glass

Optical and colour sorting use the translucency of glass to differentiate it from infusible materials such as ceramics and porcelain. Opaque and painted glass are likely to be rejected.

Infusible materials

Infusible materials like ceramics, porcelain, and Pyrex are not compatible with glass recycling, as they cannot be melted. Most glass refining steps are density-based, which means that most infusible materials remain in the glass during the separation stages. If they are not removed during the sorting, processing, and recycling process, they will lower the quality of the recycled glass.



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Infusible materials like ceramics, porcelain, and Pyrex are not compatible with glass recycling, as they cannot be melted. Most glass refining steps are density-based, which means that most infusible materials remain in the glass during the separation stages. If they are not removed during the sorting, processing, and recycling process, they will lower the quality of the recycled glass.

Recyclability guidelines

The RGs are designed to help producers choose and design packaging within their organization. Since they are covered by the SC Regulation, they are responsible for the packaging choices they put on the market, from design to end-of-life management through recycling. By providing specific guidelines for certain packaging materials, the RGs aim to increase recyclability potential and improve the materials recovered in the curbside recycling system. These tips highlight packaging features and material combinations that align with best practices, as well as those that are likely to hinder sorting, processing, and recycling. The RGs are a guide that proposes several courses of action for packaging designed with the circular economy in mind.

Using the RGs, producers can:

- Choose from a variety of options for packaging with greater recyclability potential
- Improve their existing packaging by identifying challenges and evaluating performance from a recyclability standpoint
- Design new packaging using the guidelines as a tool for drafting specifications or designs

Methodology

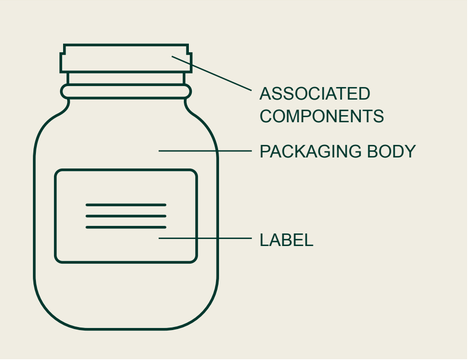
The packaging RGs are based on an analysis of several international guides, cited in the bibliography, which address packaging recyclability by proposing design guidelines.

- **Plastic packaging:** Unsurprisingly, several international guides deal with plastic packaging. They agree on several areas. ÉEQ's RGs are primarily based on the APR Design® Guide for Plastics Recyclability by the Association of Plastics Recyclers (APR), a well-known organization for the North American market. Since November 2023, the APR has also been working with RecyClass (Design for Recycling Guidelines), a major European reference for plastics recyclability, to harmonize their guidelines. ÉEQ also called on the expertise of Lichens, an external consultant specializing in recyclability, and checked with certain sorting centres, processors, and recyclers to determine how the RGs fit with the sorting, processing, and recycling infrastructures in Quebec.
- There are fewer guides for paper and cardboard packaging, and most existing guides are European. To validate the information, ÉEQ worked with an external consultant specializing in recyclability, and checked with certain research centres, sorting centres, processors, and recyclers.
- Guides for aluminum, ferrous metal, and glass packaging are even scarcer, but the existing guides have been used to create a knowledge base that has been supplemented by some processors and recyclers.

The study of numerous recyclability guides has also led to the development of the RGs' methodology. Analysis of a packaging's recyclability must take into account all its component characteristics, which can be divided into three categories:

- **Packaging body**: Includes materials, pigmentations, dimensions, barriers and coatings, additives, and direct printing (for flexible packaging, the category also includes lamination and closure adhesives).
- **Label**: Includes materials, surface area coverage, adhesives, and inks.
- **Associated components**: Includes caps and other closures, films, security seals, adhesive tapes, windows, etc.

The packaging characteristics in each category are then ranked based on three levels of sorting, processing, and recycling challenges.



Category	Packaging body	Label	Associated components
Preferred	The element poses no particular challenges for sorting, processing, and recycling		
Detrimental	The element complicates sorting or lowers production yield. These elements are tolerated, but need improvement		
Non-recyclable	The element renders the packaging non-recyclable according to ÉEQ's definition of packaging recyclability, i.e., the element that cannot be sorted, affects the quality of the recycled material, or poses environmental or health and safety challenges		

Specific guidelines for packaging materials

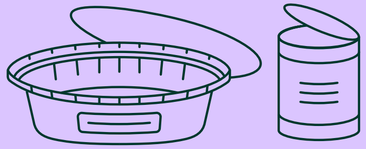
The RGs are detailed by type of packaging material. Each section includes design statements that are qualified as **preferred** if they pose no challenge to recycling, **detrimental** if they complicate recyclability, or render the packaging **non-recyclable**. All statements are accompanied by a brief explanation. Each section also includes a summary table.

Click on each material to access the guidelines.

Plastics

- → Rigid PET
- → Rigid HDPE
- → Rigid PP
- → Flexible PE

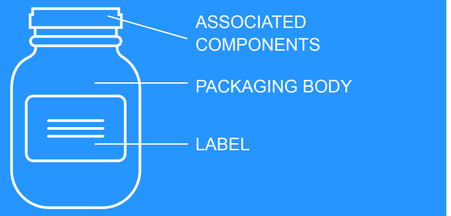
Paper and cardboard



Metals

- → Aluminium
- → Ferrous metals

Glass



Rigid PET plastic

(polyethylene terephthalate)

Based on the APR Design® Guide for Plastics Recyclability

*APR-RD
(Recognition Directory)
The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

The market for transparent (unpigmented) recycled PET is the most developed. Here are some tips for increasing the value of recovered PET.

General

Non-recyclable

PVC (and PVDC) and PLA (and other degradable or oxo-degradable plastics)

- *Those plastics contaminate recyclable materials and lower the quality of the recycled materials to the point where the packaging is unrecyclable.*

* PVC and PLA (and other degradable plastics) are also subject to a penalty.

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials (as defined in the summary table)

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered resin.*

Unpigmented resin or resin with small amounts of translucent blue or green pigment

- *The market is most developed for transparent (unpigmented) recycled PET; pigmentation affects the quality of the recycled resin.*

Packaging with at least two sides larger than 2” (5 cm)

- *In the sorting centre, packaging or associated components that are too small will pass through the separation equipment and could end up in the residues stream or contaminate the glass stream.*

3D shape

- *At the sorting centre, 2D packaging risks following the same path as paper/cardboard at the separation stage. It can become a contaminant that requires additional separation steps.*

Additives that do not change the density of the PET (+ APR-RD*)

- *During the recycling process, PET packaging is shredded, then the plastic flakes are immersed in a washing and flotation tank to separate them from labels and associated components made from other resins, depending on their density. Additives that do not change the PE density allow it to be properly separated.*

Minimal direct printing (+ APR-RD*)

- *The market for transparent (unpigmented) recycled PET is the most developed, and direct printing affects the colour of the recycled resin. Minimal direct printing means limiting it to production dates, expiry dates, and batch numbers.*

Detrimental

Pigmentation that is translucent (other than light blue or light green), dark but detectable, opaque, or white

- *The market is most developed for transparent (unpigmented) recycled PET. Translucent pigmentation other light blue or green, detectable dark pigmentation, opaque pigmentation and white pigmentation affect the quality of the recycled resin.*

Optical brightener

- *Optical brightener, a whitening or colour correction agent, do not separate from PET and can alter the quality of the recycled resin.*

Direct printing other than production dates, expiry dates, and batch numbers

- *The market for transparent (unpigmented) recycled PET is the most developed, and direct printing affects the colour of the recycled resin. Minimal direct printing means limiting it to production dates, expiry dates, and batch numbers.*

Rigid PET plastic (polyethylene terephthalate)

Packaging body

Non-recyclable

Carbon black and other undetectable pigmentation

- *Plastic packaging that uses carbon black pigments or undetectable dark pigments cannot be sorted properly in the sorting centre, as these pigments absorb light, preventing traditional optical sorters from identifying them.*

PET/PE lamination (e.g., trays made from thermoformed PET)

- *During the recycling process, PET packaging is shredded into flakes, which are then immersed in a tank of water for washing and flotation. This step not only detaches the labels and associated components, but also separates the resins by density. PET/PE lamination is problematic because the density of PET changes when it is laminated to PE, preventing it from being separated properly.*
- *Barriers or coatings that cannot be separated from PET can also pose challenges during the extrusion and pelletization stages and lower the quality of the recycled resin (e.g., PE can cause clear PET to yellow).*

Additives that change the density of the PE

- *During the recycling process, PET packaging is shredded into flakes, which are then immersed in a tank of water for washing and flotation. This step not only detaches the labels and associated components, but also separates the resins by density. Additives that change the density of PET to <1 g/cm³ prevent it from being properly separated.*

Degradable and oxo-degradable additives

- *Degradable and oxo-degradable additives contaminate recyclable materials and alter the recycled materials to the point where the packaging is unrecyclable.*

Label

Preferred

Labels made from PET (e.g., CPET) with flaking ink

- *The market is most developed for transparent (unpigmented) recycled PET. To prevent pigments from affecting the quality of the recycled resin, the ink on the (C)PET label must be able to flake off during the recycling process for easy removal.*

If PET is not an option, favour separable labels made of PP or PE with a density lower than 1 g/cm³ and a water-soluble adhesive (+ APR-RD*)

- *At the washing and flotation stage, PP and PE labels with water-soluble adhesive detach and can be easily removed, as they have a different density than PET.*

Labels with minimal surface area coverage

- *Labels that cover most or all of a container (such as sleeve labels) and are made of a different material than the container may prevent the optical sorter from identifying the material of the packaging body, thus directing it to the wrong sorting line (see summary table for targeted label surface area coverage according to packaging volume).*

Detrimental

Labels made of other polymers with a density greater than 1 g/cm³

- *During the recycling process, PET packaging is shredded into flakes, which are then immersed in a tank of water for washing and flotation. This step not only detaches the labels and associated components, but also separates the resins by density. If the label is made of other polymers with the same density as PET, it won't be separated properly and will contaminate the PET.*

Paper labels

- *During the washing and flotation stages, paper labels dissolve into suspended fibres, requiring the tank water to be filtered and treated. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.*

Non-recyclable

PETG labels

- *The presence of PETG can cause plastic flakes to stick together during the processing and recycling process, and can cause recycled transparent PET to yellow.*

Associated components

Preferred

Associated components made of PET that is transparent (unpigmented) or has small amounts of translucent blue or green pigment

- *The market is most developed for transparent (unpigmented) recycled PET; pigmentation affects the quality of the recycled resin. Associated components made of PET are easier to recycle, and therefore improve the yield of the recycling process.*

If PET is not an option, favour separable PP or PE associated components with a density lower than 1 g/cm³ (+ APR-RD*)

- *At the washing and flotation stage, the PP or PE associated components must have a different density than PET and use a water-soluble adhesive so that they detach from the packaging body for easy removal. This avoids creating contaminants that lower the quality of the recycled resin.*

Rigid PET plastic (polyethylene terephthalate)

Associated components

Detrimental

Associated components made of other polymers with a density greater than 1 g/cm³

- *During the recycling process, PET packaging is shredded into flakes, which are then immersed in a tank of water for washing and flotation. This step not only detaches the labels and associated components, but also separates the resins by density. If the associated component is made of other polymers with the same density as PET, it won't be separated properly and will contaminate the PET.*

Metal associated components

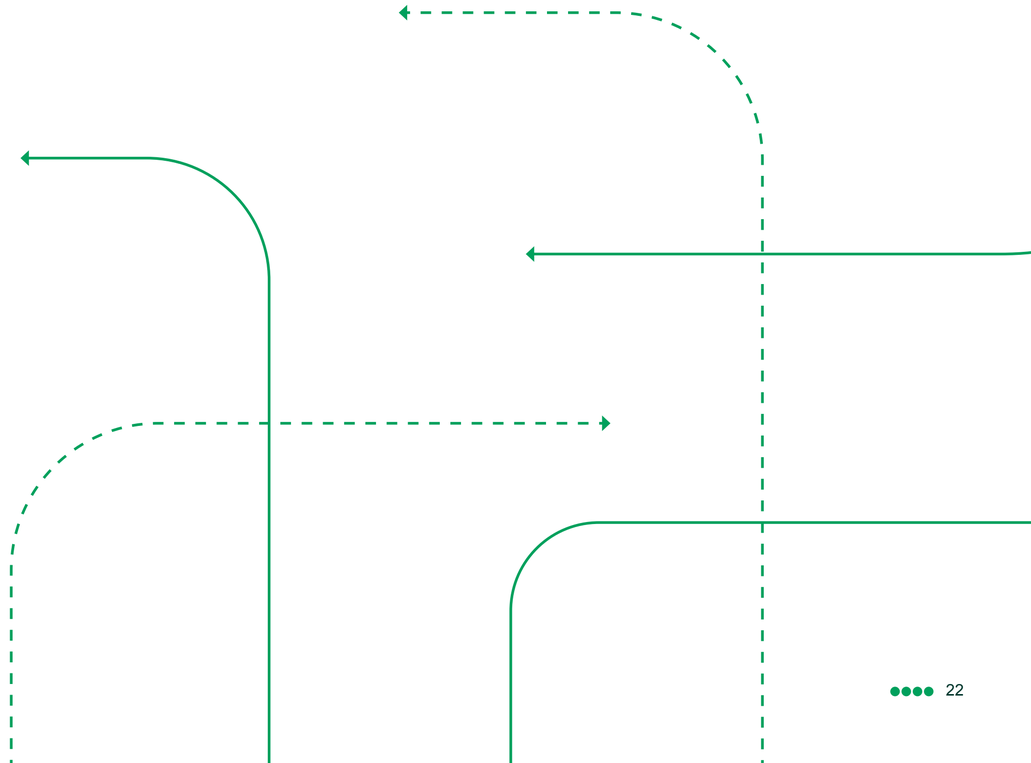
- *Associated components made of metal can cause sorting errors if picked up by the magnets or eddy current. At the processing and recycling stage, metal components can also damage shredding equipment, lower the quality of the recycled PET, and cause problems during extrusion.*

Paper associated components

- *During the washing and flotation stages, paper associated components dissolve into suspended fibres, requiring the tank water to be filtered and treated. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.*

Radio frequency identification (RFID) devices

- *Radio frequency identification devices are contaminants that can complicate processing and recycling stages and alter the yield and quality of the recycled resin.*



Rigid PET plastic (polyethylene terephthalate)

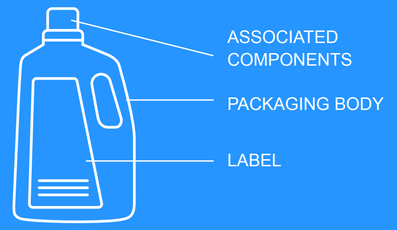
Summary table

APR-RD (Recognition Directory): The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

N/A: Not applicable

TBD: To be determined, meaning that current knowledge does not allow us to classify packaging features in this category.

Category	Packaging body						Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Materials	Adhesive	Ink	Closures, films, security seals, etc.
Preferred	Monomaterials: – PET density >1 g/cm³ – Melting temperature between 225 °C (437 °F) and 255 °C (491 °F)	Clear transparent (no pigmentation) Translucent light blue or light green pigmentation	>2” (>5 cm) on at least 2 sides 3D shape	+ APR-RD	Additives that do not change PET density + APR-RD	Minimal direct printing limited to production dates, expiry dates, and batch numbers + APR-RD	Made of PET (e.g., CPET) (with flaking ink) PP and PE with a density of <1 g/cm³ (with water-soluble adhesive) Surface area coverage: – ≤550 ml: ≤55% of the bottle surface – >550 ml: ≤75% of the bottle surface + APR-RD	No adhesive Water-soluble adhesives + APR-RD	Flaking ink (PET or CPET label) + APR-RD	Clear transparent (unpigmented) or translucent light blue and green PET PP and PE with a density <1 g/cm³ designed to be completely removed from the packaging after use + APR-RD
Detrimental	N/A	Translucent pigmentation other than light blue or green Dark pigmentation detectable by NIR reflection (optical sorting) Opaque pigmentation White pigmentation	N/A	TBD	Optical brightener (whitening or colour correction agent)	Direct printing other than production dates, expiry dates, and batch numbers	Other polymers with a density >1 g/cm³ Paper/cardboard	TBD	TBD	Other polymers with a density >1 g/cm³ that are not designed to be removed from the packaging after use Paper/cardboard Aluminum or other metal Radio frequency identification (RFID) devices
Non-recyclable	PET density <1 g/cm³ (including XPET) Melting temperature <225 °C (437 °F) or >255 °C (491 °F) PET/PE lamination (e.g., thermoformed trays made from PET)	Carbon black or other dark pigmentation not detectable by NIR reflection (optical sorting)	<2” (<5 cm) on 2 or more sides	TBD	Additives that change PET density to <1 g/cm³ Degradable and oxo-degradable additives	N/A	PETG PVC and PVDC PLA and other degradable and oxo-degradable plastics	TBD	TBD	PVC and PVDC PLA and other degradable and oxo-degradable plastics



Rigid HDPE plastic

(high-density polyethylene)

Based on the APR Design® Guide for Plastics Recyclability

*APR-RD
(Recognition Directory)
The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

Here are some tips for increasing the value of recovered HDPE.

General

Non-recyclable

PVC (and PVDC) and PLA (and other degradable or oxo-degradable plastics)

- *Those plastics contaminate recyclable materials and lower the quality of the recycled materials to the point where the packaging is unrecyclable.*

* PVC and PLA (and other degradable plastics) are also subject to a penalty.

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials (as defined in the summary table)

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered resin*

No pigmentation or detectable pigmentation

- *Since the recycling process may include separating transparent resins from coloured ones, but does not include sorting by colour, the colour of the recycled HDPE will be a mixture of all the colours present. Recycled resins without pigment are more valuable, but if pigmentation is necessary, opt for detectable pigments that allow optical sorters in the sorting centres to identify and sort them.*

Packaging with at least two sides larger than 2” (5 cm)

- *In the sorting centre, packaging or associated components that are too small will pass through the separation equipment and could end up in the residues stream or contaminate the glass stream.*

3D shape

- *At the sorting centre, 2D packaging risks following the same path as paper/cardboard at the separation stage. It can become a contaminant that requires additional separation steps.*

Where barriers are required, EVOH is thepreferred choice within the APR’s guidelines (+ APR-RD*)

- *In small quantities, EVOH is compatible with HDPE recycling. However, at too high a level, EVOH alters the mechanical properties of recycled resin, limiting its incorporation into new products.*

Additives that do not change the density of the PE (+ APR-RD*)

- *During the recycling process, PE packaging is shredded, then the plastic flakes are immersed in a washing and flotation tank to separate them from labels and associated components made from other resins, depending on their density. Additives that do not change the PE density allow it to be properly separated.*

Non-recyclable

HDPE lamination with PLA (and other degradable and oxo-degradable plastics), PVC (and PVDC), PS, and PET

- *These multi-layer combinations contaminate the recyclable materials, lowering the quality of the recycled resin and even rendering the packaging non-recyclable.*

Carbon black and other undetectable pigmentation

- *Plastic packaging that uses carbon black and other undetectable pigmentation cannot be sorted properly in the sorting centre, as these pigments absorb light, preventing traditional optical sorters from identifying them.*

Additives that change the density of HDPE

- *During the recycling process, HDPE packaging is shredded into flakes, which are then immersed in a tank of water for washing and flotation. This step not only detaches the labels and associated components, but also separates the resins by density. Additives that change the PE density to >1 g/cm³ prevent it from separating properly.*

Degradable and oxo-degradable additives

- *Degradable and oxo-degradable additives contaminate recyclable materials and alter the recycled resin to the point where the packaging is unrecyclable.*

Rigid HDPE plastic (high-density polyethylene)

Label

Preferred

Labels made of PE or small labels made of PP[7] with a density lower than 1 g/cm³

- *PE labels and small PP labels (to minimize the amount of PP) with water-soluble adhesive are compatible with HDPE recycling. Using a water-soluble adhesive means not only that the labels will come off during the washing and flotation stages, but also that the adhesive will not interfere with other recycling stages or the quality of the recycled resin.*

If PE or PP cannot be used, favour separable labels made of other polymers with a density greater than 1 g/cm³ (+ APR-RD*)

- *At the washing and flotation stage, labels made from other polymers with a different density than HDPE must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Labels with minimal surface area coverage

- *Labels that cover most or all of a container (such as sleeve labels) and are made of a different material than the container may prevent the optical sorter from identifying the material of the packaging body, thus directing it to the wrong sorting line (see summary table for targeted label surface area coverage according to packaging volume).*

Detrimental

Large PP labels

- *Too much PP could alter the quality of the recycled PE.*

Non-separable labels made of other polymers with a density greater than 1 g/cm³

- *At the washing and flotation stage, labels made from other polymers with a different density than PP must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Paper/cardboard labels

- *During the washing and flotation stages, paper/cardboard labels dissolve into suspended fibres, requiring the tank water to be filtered and treated. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.*

Associated components

Preferred

Associated components made of PE or small associated components made of PP[8] with a density lower than 1 g/cm³

- *PE associated components and small PP associated components (to minimize the amount of PP) with water-soluble adhesive are compatible with HDPE recycling. Using a water-soluble adhesive means not only that the associated components will come off during the washing and flotation stages, but also that the adhesive will not interfere with other recycling stages or the quality of the recycled resin.*

If PE or PP cannot be used, favour completely separable associated components made of other polymers with a density greater than 1 g/cm³ (+ APR-RD*)

- *At the washing and flotation stage, associated components made from other polymers with a different density than PE must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Detrimental

Large PP associated components

- *Too much PP could alter the quality of the recycled PE.*

Non-separable associated components made of other polymers with a density greater than 1 g/cm³

- *At the washing and flotation stage, associated components made from other polymers with a different density than PP must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Paper/cardboard associated components

- *During the washing and flotation stages, paper/cardboard associated components dissolve into suspended fibres, requiring the tank water to be filtered and treated. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.*

Radio frequency identification (RFID) devices

- *Radio frequency identification devices are contaminants that can complicate processing and recycling stages and alter the yield and quality of the recycled resin.*

Non-recyclable

Non-separable or welded associated components

- *Unless they are made of the same material of the packaging body, non-separable or welded components contaminate recyclable materials and alter the quality of the recycled resin, or even render the packaging non-recyclable.*

7-8 The goal is to minimize the amount of PP in the PE packaging recycling process. Too much PP could alter the quality of the recycled PE.

APR-RD (Recognition Directory): The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

N/A: Not applicable

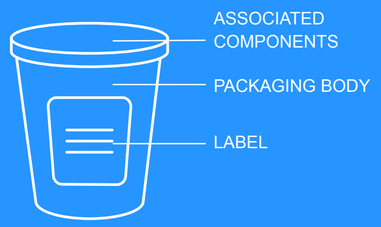
TBD: To be determined, meaning that current knowledge does not allow us to classify packaging features in this category.

Rigid HDPE plastic (high-density polyethylene)

Summary table

Category	Packaging body						Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Materials	Adhesive	Ink	Closures, films, security seals, etc.
Preferred	Monomaterials: – PE density <0,97 g/cm³	No pigmentation Pigmentation detectable by NIR reflection (optical sorting)	>2” (>5 cm) on at least 2 sides 3D shape	EVOH, within the APR's guidelines + APR-RD	Additives that do not change PE density + APR-RD	+ APR-RD	PE or small PP[9] labels with a density <1 g/cm³ Other polymers with a density >1 g/cm³ (with water-soluble adhesive) Surface area coverage: – ≤550 ml: ≤55% of the bottle surface – >550 ml: ≤75% of the bottle surface + APR-RD	Water-soluble adhesives + APR-RD	+ APR-RD	PE or small PP[10] associated components with a density <1 g/cm³ Other polymers with a density >1 g/cm³ that are designed to be completely removed from the packaging after use
Detrimental	N/A	N/A	N/A	TBD	TBD	TBD	PP (other than small labels) Other polymers with a density >1 g/cm³ (with water-insoluble adhesives Paper/cardboard	TBD	TBD	PP (other than small associated components) Other polymers with a density >1 g/cm³ that are not designed to be completely removed from the packaging after use Paper/cardboard Radio frequency identification (RFID) devices
Non-recyclable	PE density >1 g/cm³ HDPE lamination with PLA (and other degradable and oxo-degradable plastics), PVC (PVDC), PS, and PET	Carbon black or other pigmentation not detectable by NIR reflection (optical sorting)	<2” (<5 cm) on 2 or more sides	TBD	Additives that change PE density to >1 g/cm³ Degradable and oxo-degradable additives	TBD	PVC and PVDC PLA and other degradable and oxo-degradable plastics	TBD	TBD	PVC and PVDC PLA and other degradable and oxo-degradable plastics Not separable or welded associated components

9-10 The goal is to minimize the amount of PP in the PE packaging recycling process. Too much PP could alter the quality of the recycled PE.



Rigid PP plastic[11]

(polypropylene)

Based on the APR Design® Guide for Plastics Recyclability

*APR-RD
(Recognition Directory)
The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

Here are some tips for increasing the value of recovered PET.

General

Non-recyclable

PVC (and PVDC) and PLA (and other degradable or oxo-degradable plastics)

- *Those plastics contaminate recyclable materials and lower the quality of the recycled materials to the point where the packaging is unrecyclable.*

* PVC and PLA (and other degradable plastics) are also subject to a penalty.

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials (as defined in the summary table)

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered resin.*

No pigmentation or detectable pigmentation

- *Since the recycling process does not include sorting by colour, the colour of the recycled PP will be a mixture of all the colours present. Recycled resins without pigment are more valuable, but if pigmentation is necessary, opt for detectable pigments that allow optical sorters in the sorting centres to identify and sort them.*

Packaging with at least two sides larger than 2″ (5 cm)

- *In the sorting centre, packaging or associated components that are too small will pass through the separation equipment and could end up in the residues stream or contaminate the glass stream.*

3D shape

- *At the sorting centre, 2D packaging risks following the same path as paper/cardboard at the separation stage. It can become a contaminant that requires additional separation steps.*

Where barriers are required, EVOH is thepreferred choice within the APR's guidelines (+ APR-RD*)

- *In small quantities, EVOH is compatible with PP recycling. However, at too high a level, EVOH alters the mechanical properties of recycled resin, limiting its incorporation into new products.*

Additives that do not change the density of the PP (+ APR-RD*)

- *During the recycling process, PP packaging is shredded, then the plastic flakes are immersed in a washing and flotation tank to separate them from labels and associated components made from other resins, depending on their density. Additives that do not change the PP density allow it to be properly separated.*

Non-recyclable

PP lamination with PLA (and other degradable and oxo-degradable plastics), PVC (and PVDC), PS, and PET

- *These multi-layer combinations contaminate the recyclable materials, lowering the quality of the recycled resin and even rendering the packaging non-recyclable.*

Carbon black and other undetectable pigmentation

- *Plastic packaging that uses carbon black and other undetectable pigmentation cannot be sorted properly in the sorting centre, as these pigments absorb light, preventing traditional optical sorters from identifying them.*

Additives that change the density of the PP

- *During the recycling process, PP packaging is shredded, then the plastic flakes are immersed in a washing and flotation tank to separate them from labels and associated components made from other resins, depending on their density. Additives that change the PP density to >1 g/cm³ prevent it from separating properly.*

Degradable and oxo-degradable additives

- *Degradable and oxo-degradable additives contaminate recyclable materials and alter the recycled resin to the point where the packaging is unrecyclable.*

11 APR takes an interest in flexible PP and has just added this material to the APR Design® Guide. As a result, ÉEQ may also add flexible PP in the future.

Rigid PP plastic (polypropylene)

Label

Preferred

Labels made of PP or small labels made of PE[12] with a density lower than 1 g/cm³

- *PP labels and small PE labels (to minimize the amount of PE) with water-soluble adhesive are compatible with PP recycling. Using a water-soluble adhesive means not only that the labels will come off during the washing and flotation stages, but also that the adhesive will not interfere with other recycling stages or the quality of the recycled resin.*

If PE or PP cannot be used, favour separable labels made of other polymers with a density greater than 1 g/cm³ (+ APR-RD*)

- *At the washing and flotation stage, labels made from other polymers with a different density than PP must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Labels with minimal surface area coverage

- *Labels that cover most or all of a container (such as full sleeve labels) and are made of a different material than the container may prevent the optical sorter from identifying the material of the packaging body, thus directing it to the wrong sorting line (see summary table for targeted label surface area coverage according to packaging volume).*

Detrimental

Large PE labels

- *Too much PE could alter the quality of the recycled PP.*

Non-separable labels made of other polymers with a density greater than 1 g/cm³

- *At the washing and flotation stage, labels made from other polymers with a different density than PP must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Paper/cardboard labels

- *During the washing and flotation stages, paper/cardboard labels dissolve into suspended fibres, requiring the tank water to be filtered and treated. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.*

Associated components

Preferred

Associated components made of PP or small associated components made of PE[13] with a density greater than 1 g/cm³

- *PP associated components and small PE associated components with water-soluble adhesive are compatible with PP recycling. Using a water-soluble adhesive means not only that the associated components will come off during the washing and flotation stages, but also that the adhesive will not interfere with other recycling stages or the quality of the recycled resin.*

If PE or PP cannot be used, favour completely separable associated components made of other polymers with a density greater than 1 g/cm³

- *At the washing and flotation stage, associated components made from other polymers with a different density than PP must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Detrimental

Large PE associated components

- *Too much PE could alter the quality of the recycled PP.*

Non-separable associated components made of other polymers with a density greater than 1 g/cm³

- *At the washing and flotation stage, associated components made from other polymers with a different density than PP must use a water-soluble adhesive so that they detach from the packaging body for easy removal.*

Paper/cardboard associated components

- *During the washing and flotation stages, paper/cardboard associated components dissolve into suspended fibres, requiring the tank water to be filtered and treated. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.*

Radio frequency identification (RFID) devices

- *Radio frequency identification devices are contaminants that can complicate processing and recycling stages and alter the yield and quality of the recycled resin.*

Non-recyclable

Non-separable or welded associated components

- *Unless they are made of the same material of the packaging body, non-separable or welded components contaminate recyclable materials and alter the quality of the recycled resin, or even render the packaging non-recyclable.*

12-13 The goal is to minimize the amount of PE in the PP packaging recycling process. Too much PE could alter the quality of the recycled PP.

Rigid PP plastic (polypropylene)

Summary table

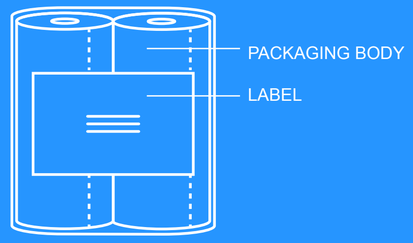
APR-RD (Recognition Directory): The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

N/A: Not applicable

TBD: To be determined, meaning that current knowledge does not allow us to classify packaging features in this category.

Category	Packaging body						Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Materials	Adhesive	Ink	Closures, films, security seals, etc.
Preferred	Monomaterials: – PP density <0,97 g/cm³	No pigmentation Pigmentation detectable by NIR reflection (optical sorting)	>2” (>5 cm) on at least 2 sides 3D shape	EVOH, within the APR’s guidelines + APR-RD	Additives that do not change PP density (<1 g/cm³) + APR-RD	TBD	PP or small PE labels[14] with a density <1 g/cm³ Other polymers with a density >1 g/cm³ (with water-soluble adhesive) Surface area coverage: – ≤550 ml: ≤55% of the bottle surface – >550 ml: ≤75% of the bottle surface + APR-RD	Water-soluble adhesives + APR-RD	+ APR-RD	PP or small PE associated components[15] with a density <1 g/cm³ Other polymers with a density >1 g/cm³ that are designed to be completely removed from the packaging after use
Detrimental	N/A	N/A	N/A	TBD	TBD	TBD	PE (other than small labels) Other polymers with a density >1 g/cm³ (with water-insoluble adhesive) Paper/cardboard	TBD	TBD	PE (other than small associated components) Other polymers with a density >1 g/cm³ that are not designed to be completely removed from the packaging after use Paper/cardboard Radio frequency identification (RFID) devices
Non-recyclable	PE density >1 g/cm³ PP lamination with PLA (and other degradable and oxo-degradable plastics), PVC (PVDC), PS, and PET	Carbon black or other pigmentation not detectable by NIR reflection (optical sorting)	<2” (<5 cm) on 2 or more sides	TBD	Additives that change PP density to >1 g/cm³ Degradable and oxo-degradable additives	TBD	PVC and PVDC PLA and other degradable and oxo-degradable plastics	TBD	TBD	PVC and PVDC PLA and other degradable and oxo-degradable plastics Not separable or welded associated components

14-15 The goal is to minimize the amount of PE in the PP packaging recycling process. Too much PE could alter the quality of the recycled PP.



Flexible PE plastic

(Polyethylene)

Based on the APR Design® Guide for Plastics Recyclability

*APR-RD
(Recognition Directory)
The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

Here are some tips for increasing the value of recovered PE.

General

Non-recyclable

PVC (and PVDC) and PLA (and other degradable or oxo-degradable plastics)

- *Those plastics contaminate recyclable materials and lower the quality of the recycled materials to the point where the packaging is unrecyclable.*

* PVC and PLA (and other degradable plastics) are also subject to a penalty.

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials (as defined in the summary table) (+ APR-RD*)

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered resin.*

No pigmentation, slightly translucent pigmentation, or white pigmentation

- *For flexible PE, the market for transparent (no pigmentation), slightly translucent pigmentation, and white pigmentation is the most developed. Since the recycling process does not include sorting by colour, the colour of the recycled flexible PE will be a mixture of all the colours present. To increase the value of the recovered flexible PE, pigmentation should be avoided (except for white) or at least kept to a minimum.*

Packaging without barriers and coatings, but when needed, favour aluminum oxide (AlOx) or silicone oxide (SiOx)[16] within the APR's guidelines (+ APR-RD*)

- *Monomaterials are always preferred, as they increase the yield of the recycling process (because they are easier to recycle) and improve the quality of the recycled resin. However, if barriers and coatings are needed, aluminum oxide (AlOx) or silicone oxide (SiOx) should be favoured, as they do not cause any problems during the sorting, processing, and recycling of flexible PE.*

Additives that do not change PE density (+ APR-RD*)

- *In the recycling process, flexible PE packaging is shredded into flakes, which are then immersed in a water tank for washing and flotation. This step not only detach the labels and associated elements, but also separates them based of the fact that each resin has a different density. Additives that do not change the density of the PE ensure that it is properly separated.*

Minimal direct printing (+ APR-RD*)

- *For flexible PE, the market for transparent (no pigmentation), slightly translucent pigmentation, and white pigmentation is the most developed. Direct printing affects the colour of the recycled PE. Minimal direct printing means limiting it to production dates, expiry dates, and batch numbers.*

Packaging without lamination adhesive, but when needed, favour lamination and sealing adhesives within the APR's guidelines (+ APR-RD*)

- *If lamination and sealing adhesives are necessary, they should be used within the APR's guidelines to prevent issues during the sorting, processing, and recycling of flexible PE.*

Detrimental

PE content >80% and <90% of total packaging weight

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered resin.*

Dark pigmentation detectable

- *For flexible PE, the market for transparent (no pigmentation), slightly translucent pigmentation, and white pigmentation is the most developed. Since the recycling process does not include sorting by colour, the colour of the recycled flexible PE will be a mixture of all the colours present. To increase the value of the recovered flexible PE, pigmentations should be avoided (except for white) or at least kept to a minimum.*

Direct printing other than production dates, expiry dates, and batch numbers

- *For flexible PE, the market for transparent (no pigmentation), slightly translucent pigmentation or white pigmentation is the most developed. Direct printing affects the colour of the recycled PE. Minimal direct printing means limiting it to production dates, expiry dates, and batch numbers.*

16 The preferred barriers and coatings for soft PE do not currently include EVOH, as tolerance thresholds have not yet been determined.

Flexible PE plastic (polyethylene)

Packaging body

Non-recyclable

PE lamination with PLA (and other degradable and oxo-degradable plastics), PVC (and PVDC), PET, paper/cardboard, and aluminum

- *These multi-layer combinations contaminate the recyclable materials, lowering the quality of the recycled resin and even rendering the packaging non-recyclable.*

Carbon black and other undetectable pigmentation

- *Plastic packaging that uses carbon black pigments or undetectable dark pigments cannot be sorted properly in the sorting centre or by the processor or recycler, as these pigments absorb light, preventing traditional optical sorters from identifying them.*

PVDC barriers and coatings

- *PVDC contaminates the recyclable materials, lowering the quality of the recycled resin and even rendering the packaging non-recyclable*

Additives that change the density of the flexible PE

- *During the recycling process, PET packaging is shredded into flakes, which are then immersed in a tank of water for washing and flotation. This step not only detaches the labels and associated components, but also separates the resins by density. Additives that change the PE density to >1 g/cm³ prevent it from separating properly.*

Degradable and oxo-degradable additives

- *Degradable and oxo-degradable additives contaminate recyclable materials and alter the recycled materials to the point where the packaging is unrecyclable.*

Label

Preferred

PE labels (+ APR-RD*)

- *PE labels with APR-recognized ink and adhesive are compatible with flexible PE recycling.*

Detrimental

Paper/cardboard labels

- *During the washing and flotation stages, paper/cardboard labels are transformed into suspended fibres, requiring the tank water to be filtered and treated. Some fibres may also stick to the plastic flakes and lower the quality of the recycled material at the extrusion stage.*

Non-recyclable

Metal labels

- *Labels made of metal can cause sorting errors if picked up by the magnets or eddy current. At the processing and recycling stage, metal labels can also damage shredding equipment, lower the quality of the recycled flexible PE, and cause problems during extrusion.*

Associated components

Preferred

PE associated components

- *Associated components made of PE with water-soluble adhesives are compatible with PE recycling. Using a water-soluble adhesive means not only that the associated components will come off during the washing and flotation stages, but also that the adhesive will not interfere with other recycling stages or the quality of the recycled resin.*

Non-recyclable

Metal associated components

- *Associated components made of metal can cause sorting errors if picked up by the magnets or eddy current. At the processing and recycling stage, metal associated components can also damage shredding equipment, lower the quality of the recycled PET, and cause problems during extrusion.*

Flexible PE plastic (polyethylene)

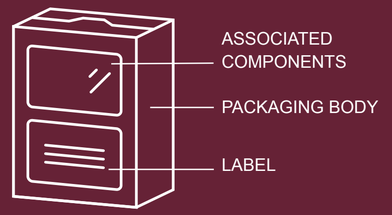
Summary table

APR-RD (Recognition Directory): The APR Design® Recognition Directory regroup various available options of pigmentations, barriers and coating, additives, direct printing, labels, adhesives, inks and associated components (https://plasticsrecycling.org/apr-design-hub/apr-design-recognitions-directory/)

N/A: Not applicable

TBD: To be determined, meaning that current knowledge does not allow us to classify packaging features in this category.

Category	Packaging body							Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Adhesive	Materials	Adhesive	Ink	Closures, films, security seals, etc.
Preferred	Monomaterials: – PE density <1 g/cm³ – PE ≥90% of the total weight of the flexible packaging or APR-RD	No pigmentation or slightly translucent pigmentation White pigmentation	TBD	No barriers or coatings Aluminum oxide (AlOx) and silicon oxide (SiOx) within the APR's guidelines + APR-RD	Additives that do not change PE density + APR-RD	Minimal direct printing limited to production dates, expiry dates, and batch numbers + APR-RD	No lamination or with lamination or sealing adhesive within the APR's guidelines + APR-RD	PE (with APR-recognized adhesive and ink) + APR-RD	+ APR-RD	+ APR-RD	PE
Detrimental	PE content >80% and <90% of total packaging weight	Dark pigmentation detectable by NIR reflection (optical sorting)	TBD	TBD	TBD	Direct printing other than production dates, expiry dates, and batch numbers	TBD	Paper/cardboard	TBD	TBD	TBD
Non-recyclable	PE density >1 g/cm³ PE lamination with PLA (and other degradable and oxo-degradable plastics), PVC (PVDC), PET, paper/cardboard, and aluminum	Carbon black or other pigments not detectable by NIR reflection (optical sorting)	TBD	PVDC	Additives that change PE density to >1 g/cm³ Degradable and oxo-degradable additives	TBD	TBD	PVC and PVDC PLA and other degradable and oxo-degradable plastics Metal	TBD	TBD	Metal



Paper and cardboard

Here are some tips for increasing the value of recovered paper and cardboard.

General

Non-recyclable

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials

- *Monomaterials increase recycling yields (by facilitating sorting, processing, and recycling) and improve the quality of the recovered material.*

Packaging with at least two sides larger than 2” (5 cm)

- *In the sorting centre, packaging or associated components that are too small will pass through the separation equipment and could end up in the residues stream or contaminate the glass stream.*

Packaging with limited barriers and coatings

- *Barriers and coatings come off during the pulping stage and are discarded, taking attached fibres with them, leading to fibre loss.*

Non-recyclable

Wax barriers or coatings (e.g., waxed paper or cardboard)

- *When wax is applied as a barrier or coating, the paper or cardboard cannot be pulped. At the pulping stage, waxed paper and cardboard will not break down into fibres suspended in water and will be discarded.*

Label

Preferred

Pulpable[17] paper/cardboard labels with water-soluble adhesive

- *Pulpable paper labels attached with water-soluble adhesive are compatible with paper and cardboard recycling. Using a water-soluble adhesive means not only that the labels will come off during the flotation stage, but also that the adhesive will not interfere with other recycling stages or the quality of he recycled material.*

Detrimental

Labels made from unpulpable materials

- *Labels made from unpulpable materials, such as plastic or metal, come off during the pulping stage and are discarded, taking attached fibres with them.*

Associated components

Preferred

Pulpable[18] paper/cardboard associated components with water-soluble adhesive

- *Pulpable paper/cardboard associated components attached with water-soluble adhesive are compatible with paper and cardboard recycling. Using a water-soluble adhesive means not only that the associated components will come off during the pulping stage, but also that the adhesive will not interfere with other recycling stages or the quality of the recycled material.*

Detrimental

Associated components made from unpulpable materials

- *Associated components made from unpulpable materials, such as plastic or metal (including adhesive tapes, films, security seals, windows, etc.), come off during the pulping stage and are discarded, taking attached fibres with them.*

17-18 The ability of paper and cardboard to be shredded through friction, becoming fibres suspended in water.

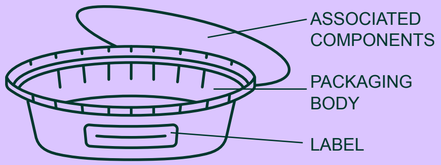
Paper and cardboard

Summary table

N/A: Not applicable

TBD: To be determined, meaning that current knowledge does not allow us to classify packaging features in this category.

Category	Packaging body						Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Materials	Adhesive	Ink	Closures, windows, adhesive tapes, etc
Preferred	Monomaterials	TBD	>2” (>5 cm) on at least 2 sides	Minimal barriers and coatings	TBD	N/A	Pulpable paper/cardboard (with water-soluble adhesives)	Water-soluble adhesives	TBD	Pulpable paper/cardboard (with water-soluble adhesives)
Detrimental	TBD	N/A	N/A	TBD	TBD	N/A	Unpulpable materials (plastics or metals)	Water-insoluble adhesives	N/A	Unpulpable materials, especially plastic or metal (including adhesive tape, films, seals, windows, etc.)
Non-recyclable	TBD	TBD	<2” (<5 cm) on 2 or more sides	Wax Environmentally persistent substances (e.g., PFAS)	Environmentally persistent substances (e.g., PFAS)	TBD	N/A	N/A	TBD	N/A



Aluminum

Here are some tips for increasing the value of recovered aluminum.

General

Non-recyclable

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered material.*

Packaging with at least two sides larger than 2” (5 cm)

- *In the sorting centre, packaging or associated components that are too small will pass through the separation equipment and could end up in the residues stream or contaminate the glass stream.*

Direct printing

- *Aluminum containers with direct printing are easier to recycle, since the inks will be managed at the heat treatment stage and when the recycled aluminum is melted.*

Non-recyclable

Other non-ferrous metals

- *Non-ferrous metals such as copper and zinc are difficult to separate from aluminum at the separation stage and are not compatible with its recycling.*

Label

Preferred

Paper/cardboard labels

- *Paper/cardboard labels are compatible with the thermal processes of aluminum recycling plants.*

Detrimental

Plastic labels

- *During the processing and recycling stages, plastic residues can build up in equipment, increasing the risk of fire.*

Associated components

Preferred

Aluminum associated components

- *Associated components made of aluminum increase the yield of the recycling process (because they are easier to recycle) and improve the quality of the recycled material. Do not use non-ferrous metals such as copper and zinc, as they are difficult to separate from aluminum at the separation stage and are not compatible with its recycling.*

Detrimental

Plastic associated components

- *During the processing and recycling stages, plastic residues can build up in equipment, increasing the risk of fire.*

Non-recyclable

Other associated components made of nonferrous metals

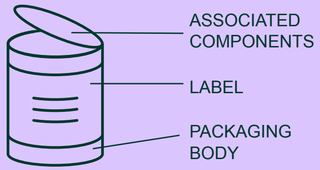
- *Non-ferrous metals such as copper and zinc are difficult to separate from aluminum at the separation stage and are not compatible with its recycling.*

Aluminum

Summary table

N/A: Not applicable

Category	Packaging body						Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Materials	Adhesive	Ink	Closures, films, security seals, etc.
Preferred	Monomaterials	N/A	>2” (>5 cm) on at least 2 sides	N/A	N/A	Direct printing	Paper/cardboard	N/A	N/A	Aluminium
Detrimental	N/A	N/A	N/A	N/A	N/A	N/A	Plastic	N/A	N/A	Plastic
Non-recyclable	Other non-ferrous metals	N/A	<2” (<5 cm) on 2 or more sides	N/A	N/A	N/A	N/A	N/A	N/A	Other non-ferrous metals



Ferrous metals

Here are some tips for increasing the value of recovered ferrous metals.

General

Non-recyclable

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered resin.*

Packaging with at least two sides larger than 2” (5 cm)

- *In the sorting centre, packaging or associated components that are too small will pass through the separation equipment and could end up in the residues stream or contaminate the glass stream.*

Label

Preferred

Paper/cardboard labels

- *Paper/cardboard labels are compatible with the thermal processes of metal recycling plants.*

Detrimental

Plastic labels

- *During the processing and recycling stages, plastic residues can build up in equipment, increasing the risk of fire.*

Associated components

Preferred

Ferrous metal associated components

- *Associated components made of ferrous metals increase the yield of the recycling process (because they are easier to recycle) and improve the quality of the recycled material.*

Detrimental

Plastic associated components

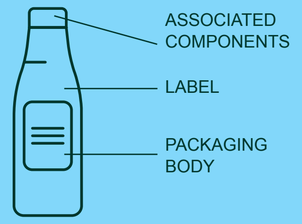
- *During the processing and recycling stages, plastic residues can build up in equipment, increasing the risk of fire.*

Ferrous metals

Summary table

N/A: Not applicable

Category	Packaging body						Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Materials	Adhesive	Ink	Closures, films, security seals, etc.
Preferred	Monomaterials	N/A	>2” (>5 cm) on at least 2 sides	N/A	N/A	N/A	Paper/cardboard	N/A	N/A	Ferrous metals
Detrimental	N/A	N/A	N/A	N/A	N/A	N/A	Plastic	N/A	N/A	Plastic
Non-recyclable	N/A	N/A	<2” (<5 cm) on 2 or more sides	PVC and PVDC	N/A	N/A	N/A	N/A	N/A	N/A



Glass

Here are some tips for increasing the value of recovered glass.

General

Non-recyclable

Toxic or environmentally persistent substances (e.g., PFAS)

- *Toxic or environmentally persistent substances, as described in the Prohibition of Certain Toxic Substances Regulations (GC, 2012) and the Canadian Environmental Protection Act (GC, 1999), can give rise to environmental or health and safety issues.*

Packaging body

Preferred

Monomaterials (soda-lime glass)

- *Monomaterials increase recycling yield (by facilitating sorting, processing, and recycling) and improve the quality of the recovered glass.*
- *Soda-lime glass (composed of calcium and sodium silicates) is the most common glass used in packaging. Other glass compositions require technically complex separation to avoid complications in the process and a lower-quality end product.*

Packaging body

Glass with no pigmentation (transparent) or translucent green or amber pigmentation

- *The market is most developed for transparent (no pigmentation) and translucent green and amber glass. The transparency and translucency of glass enable it to be distinguished from infusibles such as ceramics and porcelain during optical sorting.*

Minimal direct printing

- *The market is most developed for transparent (no pigmentation) and translucent green and amber glass. Direct printing affects the colour of the recycled glass. Minimal direct printing means limiting it to production dates, expiry dates, and batch numbers.*

Detrimental

Opaque pigmentation and painted glass

- *Optical and colour sorting use the transparency and translucency of glass to differentiate it from infusible materials such as ceramics and porcelain. For this reason, it's best to avoid opaque pigmentation and painted glass, which are likely to be rejected*

Non-recyclable

Borosilicate glass or glass containing a high proportion of heavy metals

- *Borosilicate glass, which has a higher melt strength, as well as glass containing a high proportion of heavy metals (e.g. crystal) are not compatible with soda-lime glass recycling. They would require technically complex separation to avoid impacting the process and the quality of the finished product. In addition, heavy metals pose environmental and health & safety issues.*

Pigmentations containing heavy metals

- *Heavy metals pose environmental, health, and safety challenges.*

Label

Detrimental

Adhesives that do not allow the label to peel off by friction

- *Some processors and recyclers include a friction removal stage for labels, the success of which depends on the adhesives used. If the labels do not come off easily, they can lead to glass loss and lower the quality of the recycled glass.*

Associated components

Preferred

Separable plastic or metal associated components

- *To avoid affecting the quality of the recycled glass, the associated components must be able to be separated and removed during the sorting, processing, and recycling process.*

Detrimental

Non-separable plastic or metal associated components

- *If the associated components are not separated and removed during the sorting, processing and recycling process, they will affect the quality of the recycled glass.*

Non-recyclable

Associated components made of infusibles (Pyrex, ceramic, porcelain)

- *Infusibles are not compatible with glass recycling, as they cannot be melted. If they are not removed during the sorting, processing, and recycling process, they will lower the quality of the recycled glass.*

Glass

Summary table

N/A: Not applicable

TBD: To be determined, meaning that current knowledge does not allow us to classify packaging features in this category.

Catgory	Packaging body						Label			Associated components
	Materials	Pigmentation	Dimensions	Barriers and coatings	Additives	Direct printing	Materials	Adhesive	Ink	Closures, films, security seals, etc.
Preferred	Monomaterials: – soda-lime glass (calcium and sodium silicates)	Pigmentation-free Translucent pigmentation (green and amber preferred)	N/A	N/A	N/A	Minimal direct printing limited to production dates, expiry dates, and batch numbers	TBD	TBD	N/A	Plastics and metals that can be separated during sorting, processing, or recycling
Detrimental	N/A	Opaque pigmentation Painted glass	N/A	N/A	N/A	Direct printing other than production dates, expiry dates, and batch numbers	TBD	Adhesives that do not allow the label to peel off by friction	N/A	Plastics and metals that cannot be separated during sorting, processing, or recycling
Non-recyclable	Borosilicate glass (higher melting temperature) Glass containing a high proportion of heavy metals (e.g., crystal)	Pigmentations containing heavy metals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Infusibles: Pyrex, ceramic, porcelain

Glossary

2D
Two-dimensional.

3D
Three-dimensional.

Aggregate (glass)
Smaller pieces of glass.

AlOx
Aluminum oxide.

APR
The Association of Plastic Recyclers.

Associated components
Associated components include caps and other closures, films, security seals, adhesives tapes, windows, etc.

Optical brightener
Whitening or colour correction agent.

Bale
Package of sorted materials that leaves a sorting centre.

Borosilicate (glass)
A more heat-resistant type of glass, used to make items like laboratory equipment (beakers, test tubes, etc.).

Circular economy
A system of production, exchange, and consumption based on strategies that optimize resource use at every stage of the product life cycle, with the aim of reducing environmental impact and improving individual and communal well-being (translated from OQLF, 2023).

Contaminant
Unwanted elements that affect the sorting, processing, recycling, and value of ecycled materials.

CPET
Crystalline polyethylene terephthalate.

Cullet (glass)
Larger pieces of glass.

Curbside recycling
Also called “curbside collection.” A recovery method that collects residual materials for reuse. Curbside recycling is carried out by voluntary drop-off at a collection point (point of sale, drop-off bin, container, ecocentre, or waste sorting and recovery centre) or by curbside collection (translated from RECYC-QUÉBEC, 2024).

Degradable (plastic)
Describes an item that decomposes (meaning that its structure changes in a way characterized by fragmentation or a loss of properties) under specific conditions until a certain point within a certain time frame.

Direct printing
Printing directly on the packaging.

Eco-inking
Practice aimed at reducing or optimizing ink use in packaging design and document printing, mainly for environmental and economic reasons (translated from OQLF, 2023b).

Ecodesign
A holistic approach that takes environmental, social, and economic criteria into account when designing packaging, while preserving its use value (roles and functions) (ÉEQ, 2024).

Eddy current
Eddy currents are used in sorting centres to separate non-ferrous metals such as aluminum, taking advantage of their electrical conductivity to induce temporary magnetism.

ÉEQ
Éco Entreprises Québec.

EG
Ecodesign Guidelines.

End of life
The stage in a product’s life when it can no longer be used or ceases to function and cannot be repaired. At the end of its life, an item can generally be recycled or valorized (recovered). It can also be discarded (translated from OQLF, 2023b).

EPR
Extended producer responsibility.

EVOH
Ethylene vinyl alcohol.

Extrusion (plastic)
A shaping process in which molten resin is hot-pressed through a die.

Ferrous (metal)
Magnetic metal that contains iron.

Flake (plastic)
When plastics are recycled, the packaging is shredded into small pieces by rotating blades.

HDPE
High-density polyethylene.

IAE
Information, awareness, and education.

Infusibles
Ceramics, porcelain, and Pyrex are infusibles that are not compatible with glass recycling, as they cannot be melted.

Laminated
Consisting of several layers of the same or different materials.

Melting temperature
The temperature at which a solid becomes liquid.

Monomaterials
Made of a single material.

Multi-material
Made of several different materials.

N.D.
No date

N/A
Not applicable

NIR
Near-infrared spectroscopy.

Non-ferrous (metal)
Non-magnetic metals that do not contain iron such as aluminum, copper, and zinc.

Optical sorting
Process using a device that projects light rays onto the packaging. The rays are reflected by the materials and captured by a lens that uses each material’s unique light signature to identify it.

Optical sorter
A device that projects light beams onto packaging to identify and sort it.

Oxo-degradable (plastic)
An item made of conventional plastics (derived from petrochemicals or fossil resources) with additives that cause it to fragment (break into small pieces) under the effect of sunlight, heat, or mechanical stress, creating a plastic residue.

Packaging
Containers and other items made of paper, cardboard, plastic, glass, or metal and used to contain, protect, or wrap a product.

PE
Polyethylene.

Pellet (plastic)
When plastics are recycled, the flakes are melted and extruded into filaments, which then cool and solidify. They are then cut into small pieces, called pellets.

Penalty
Imposition of a penalty on the contribution payable for materials that do not have recycling channels or that are identified as detrimental during collection, sorting, processing, and recycling.

PET
Polyethylene terephthalate.

PETG
Polyethylene terephthalate glycol.

PFAS
Per- and polyfluoroalkyl substances are a group of over 4,700 related organic compounds that have a fluorinated carbon chain structure. They are synthetic chemicals with high chemical and thermal stability that can repel water and oils. PFAS persist in the environment and can accumulate in the body over time (Government of Canada, 2024).

PLA
Polylactic acid.

Polyolefins
Family of plastic resins that includes HDPE, PP, and PE.

PP
Polypropylene.

Printed paper
Paper and other cellulose fibres that may or may not display text or an image.

Processor
Company involved in the collection, storage, or processing (shredding, baling, pulping, etc.) of residual materials, with a view to their recycling or recovery (translated from RECYC-QUÉBEC, 2024).

Producer
Any person who commercializes, puts on the market, or otherwise distributes packaging and printed paper in Quebec that is covered by the SC Regulation (CQLR c. Q-2, r. 46.01 – GQ, 2023).

PS
Polystyrene.

Pulpable
The ability of paper and cardboard to be shredded through friction, becoming fibres suspended in water

Pulping
A friction-based shredding process for paper and cardboard that breaks it down into fibres suspended in water.

PVC
Polyvinyl chloride.

PVDC
Polyvinylidene chloride.

Recyclability
Ecodesigned packaging that is collected in the recovery bin, sorted at a sorting centre, and recycled through an established market.

Recycler
Recyclers use secondary materials, i.e., recovered materials from producers, reclaimers, or recovery and sorting centres, and transforms them into materials that can be used to manufacture semi-finished or finished products. Recycling processes vary depending on the type of material (translated from RECYC-QUÉBEC, 2024).

Recycling
Process where a residual material is transformed in order to be used as a raw material for manufacturing a new product (translated from OQLF, 2023b).

RFID
Radio frequency identification.

RG
Recyclability Guidelines.

SC Regulation
Regulation respecting a system of selective collection of certain residual materials.

Screening
Mechanical sorting by size.

SiOx
Silicone oxide.

Sleeve label
A label made from a heat-shrinkable plastic resin that partially or fully covers the packaging.

Soda-lime glass
Glass composed of calcium and sodium silicates, used to manufacture containers and bottles.

Sorting centre
Company that sorts residual materials, particularly recyclables and construction, renovation, and demolition waste, for recycling or valorization (translated from RECYC-QUÉBEC, 2024).

Surface area coverage (label)
The proportion of the packaging covered by the label.

Translucency
Ability to let light pass through only partially, making it impossible to clearly distinguish objects through the object (with pigmentation).

Transparency
Ability to let light through completely, allowing objects to be clearly distinguished through the object (without pigmentation).

XPET
Expanded polyethylene terephthalate.

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Questions? Contact us!

The Ecodesign and Recyclability team is here to support you.