



Compatibility of adhesive labels  
with household packaging recycling



Together, let's give  
our products a new life.



FRENCH UNION OF ADHESIVE LABEL MANUFACTURERS

## Editorial



Dear Members and Partners,

Five million tonnes of household packaging is placed on the market in France every year and over two-thirds of this packaging is recycled. The growth of eco-design, collection, sorting and recycling over the last 30 years means that household packaging has been part of a circular economy for just as long and has given rise to a new sector.

Yet there is still much to be done, and the clock is ticking as climate change accelerates and consumer and regulatory expectations continue to grow. Developing a circular economy is clearly a key lever for reducing the environmental impacts of packaging. The recyclability of household packaging is an essential part of this drive, as demonstrated by the ambitious goal of the French AGEC Law (Anti-Waste Law for a Circular Economy) stating that all household packaging will need to be channelled towards a recycling stream by 2030. A second consecutive year of partnership between UNFEA and Citeo has illustrated the commitment of all the stakeholders to work together on improving the recyclability of packaging, regardless of its material content. The work undertaken has revealed the importance of addressing other packaging elements, such as labels, when dealing with recyclability. Such elements have now been included in our recyclability evaluation tool, TREE.

What should you take into account to make your label compatible with recycling streams? This guide is entirely dedicated to answering that question. It covers the compatibility of all types of labels (adhesives, films, sleeves) with the recycling of all kinds of household packaging material (paper/cardboard, plastic, glass, metal).

We hope you enjoy reading this guide and warmly thank all those who contributed to it.

Valentin Fournel  
Eco-Design Services Director



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### Reading the guide

This guide contains tools to further develop your reflection on eco-design and help you strike the right balance between recyclability and meeting the functional requirements of your customers' specifications.

It explains the main steps of the recycling process for each type of packaging on which an adhesive label can be applied, and recaps the relevant eco-design recommendations.

**To quickly find the information you need, go straight to the main material used in the packaging on which the label will be placed.**

**Guide published by:**  
UNFEA (French Union of Adhesive  
Label Manufacturers)  
4/6 rue Borromée - 75015 Paris  
France

**Chief Editor:**  
Cyrille Roze,  
Chair of UNFEA

**Contributors to this guide:**  
**Pierre Forcade**,  
General Secretary of UNFEA  
**Carole Berrard**, Eco-Design Project  
Manager, Citeo  
**Chloé Sabathier**, Eco-Design Project  
Leader, Citeo  
**Margaux Valentin**, Eco-Design Project  
Leader, Citeo  
**Fayçal Elgodjam**, Gulliver  
Graphic design and printing

**Diagram and illustration credits:**  
Citeo

2022 Edition

# Introducing the partners



FRENCH UNION OF ADHESIVE LABEL MANUFACTURERS

UNFEA is the French Union of Adhesive Label Manufacturers Created in 1970, it is the only label manufacturer federation of its kind. Today it counts 182 members, 107 of which are label manufacturers and 75 of which are associate members – or manufacturers' suppliers.

UNFEA is governed by a board of 15 members, including a chairperson, a vice-chairperson, a treasurer and a general secretary, who is the only permanent member of the federation. The board members are divided into three permanent committees dealing with issues such as training, recruitment, communication, UNFEA events and the QUALETIQ label of excellence, which is awarded via an application procedure by a committee made up of contract givers and board members.

UNFEA values are founded on six main pillars:

**Attentiveness / Know-how / The environment / Networks / Expertise / Ethics.**

UNFEA is part of the inter-sectoral Paper and Board branch. It represents the profession and its 7,500 employees in 350 companies, with a collective turnover of over one billion €.



Together, let's give  
our products a new life.

Citeo is a "*entreprise à mission*" set up by companies in the fast-moving consumer goods and retail sectors to reduce the environmental impact of their packaging and paper waste by proposing solutions for waste reduction, reuse, sorting and recycling.

To tackle the environmental crisis and speed up the changes that are vitally needed, Citeo seeks to encourage and support economic stakeholders in developing production, distribution and consumption practices that preserve our planet, its resources, biodiversity and the climate. [www.citeo.com](http://www.citeo.com)

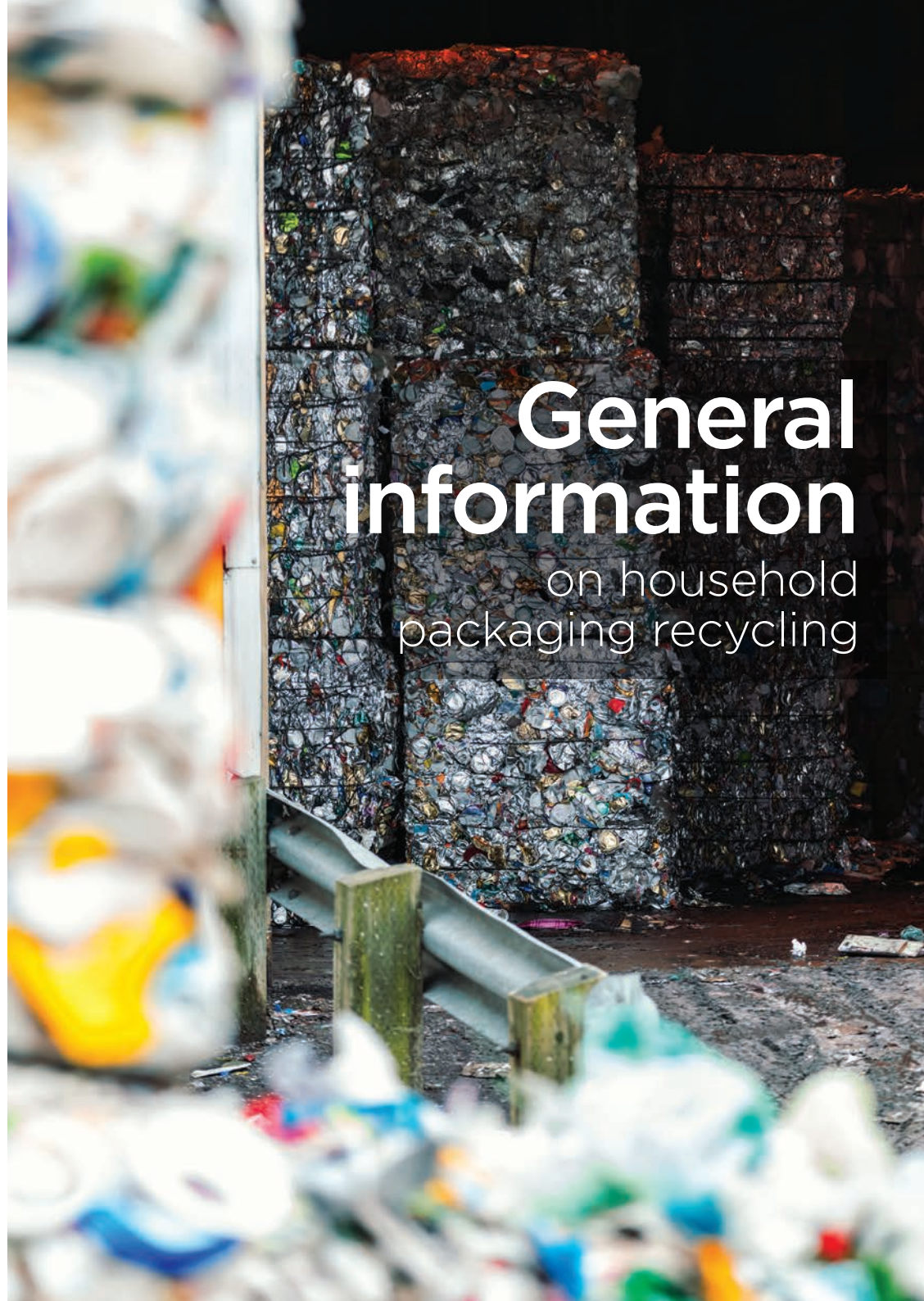


Adelphe's mission is to reduce the environmental footprint of packaging placed on the market by companies.

As a subsidiary of Citeo, it supports the pharmaceutical, wine and spirits, and artisan bakery and pastry sectors in their drive to comply with Extended Producer Responsibility requirements on financing the collection, sorting and recycling of their packaging. An approachable SME, Adelphe lends companies its expertise to make a tangible difference to the life cycle of their packaging, from reduction, reuse and recycling to environmental communication with consumers.

# General information

on household  
packaging recycling





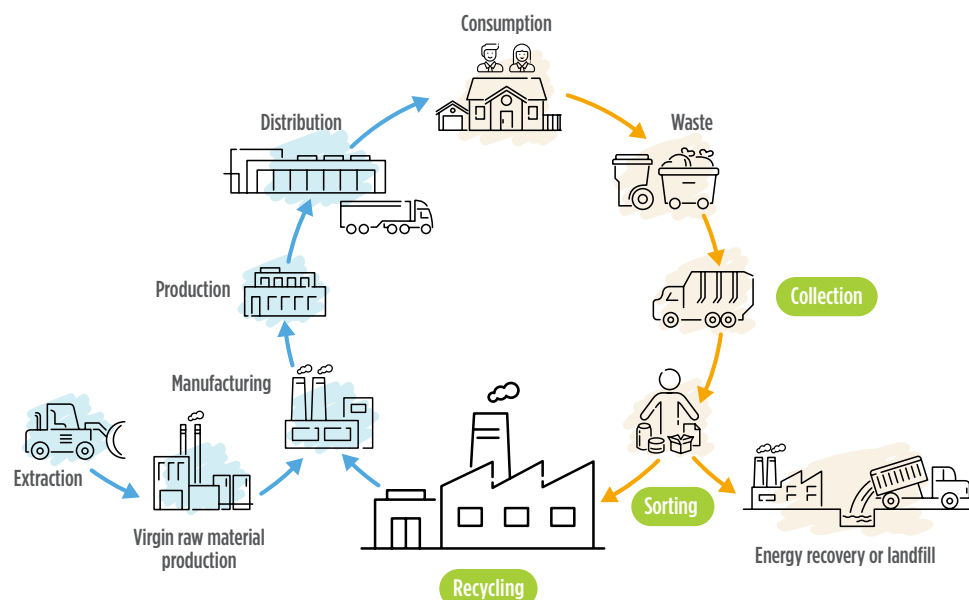
## Recycling of household packaging in France

In France, packaging is recyclable if it can already be directed towards a recycling stream, or in other words, **if it can be collected, sorted and recycled nationwide** to produce another packaging item or product.

At the end of its life, packaging is disposed of in the sorting bin by the consumer. That's the first step. The packaging waste is then collected and taken to a sorting centre that separates the recyclable packaging from the "sorting rejects".

Given that non-recyclable packaging cannot be channelled into a recycling stream, it is rejected and sent for energy recovery or, failing that, taken to a landfill. Recyclable packaging is separated by material and sent to the existing recycling streams.

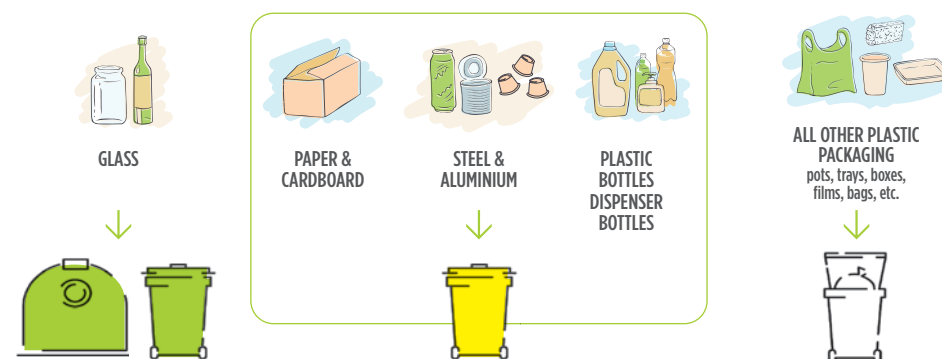
The recycling operators receive the "bundles" or "bales" of compacted packaging and produce recycled materials.



## Sorting instructions and recycling streams

### Sorting instructions at a national level

National sorting instructions have been in place for papers, household packaging made of paper/cardboard, steel, aluminium, glass, and only bottles and dispenser bottles for plastic ones since 1993, when collective sorting of packaging was introduced in France.



### Extension of sorting instructions

Citeo launched the extension of sorting instructions in 2012. The extension enables all packaging, including all plastic packaging other than plastic bottles or dispensers (pots, trays, films, bags, etc.), to be disposed of in the sorting bin. By simplifying sorting habits in this way, consumers will be able to dispose of all their packaging in the sorting bin, thereby increasing the overall volume of packaging that is sorted and recycled. An extra 3 kg of household packaging will be recycled per year and per inhabitant.

The extension of sorting instructions has triggered the modernisation of sorting centres throughout the territory. In a few years' time, everyone living in France will be able to dispose of their household packaging in the sorting bin.

Until then, sorting instructions will not be the same in all areas in France. To find out about your local sorting instructions, visit: [www.consignesdetri.fr](http://www.consignesdetri.fr) (in French) or check out the sorting guide app.



Today 89% of people in France sort their waste, making this habit the number one civic deed, ahead of voting!

## Making sorting instructions simpler for all packaging



### LAUNCH

2012 > 2014  
Almost 6% of  
national territory



### NOW

Since 2021,  
over 50% of  
national territory

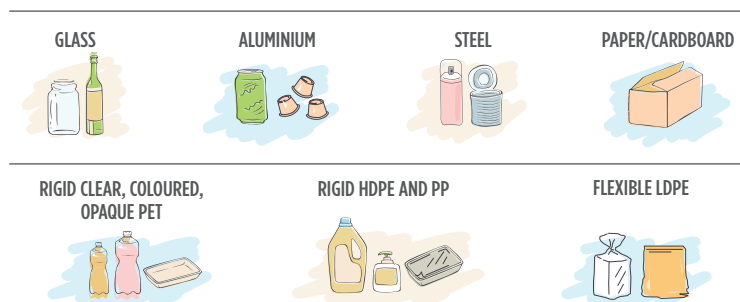


### TOMORROW

2021 > A few  
years' time  
100% of national  
territory

## Recycling streams

This guide describes the situation for labels placed on household packaging channelled towards a recycling stream in France **after the extension of sorting instructions**, i.e. packaging made of:



This guide does not cover:

- **Packaging for which recycling streams are under study**, such as wood, PS\* and lidded PET\* and flexible PP\* packaging.
- **Packaging for which no recycling stream exists**, such as packaging made of PVC\*, ceramic, complex plastic, etc.

\*See Glossary on page 37

## Packaging recyclability: the challenge of associated components

In France, **packaging is recyclable** if it can already be channelled towards a recycling stream, or in other words, **if it can be collected, sorted and recycled nationwide**, to be used as raw material in another packaging item or product. There are **three keys stages**:

- **Collection**: the packaging item is included in the French sorting instructions.
- **Sorting**: the technologies available enable the packaging to be channelled towards an appropriate recycling stream.
- **Recycling**: the packaging item is covered by a recognised industrial recycling stream (existing outlets, recycled material yields optimised) and can be incorporated into the stream without disrupting it.



Optimising recycled material yields and avoiding material wastage, rejections, additional maintenance and cleaning costs, or reduced material quality are major financial challenges.

However, the recyclability of a packaging item depends on **the behaviour of associated elements** (lids, labels, caps, inks, adhesives, etc.) during the recycling process. These components can interfere with the sorting and recycling processes, affecting the packaging's recyclability, as described above.

## Is my adhesive label recyclable?



The main priority for recycling operators is to **recycle the packaging, i.e. the container**. In an effort to avoid process disruptions or impacts on the quality of the recycled material, they work hard to separate the associated elements from the packaging item. This includes labels, which cannot be recycled in most cases\*. It is therefore preferable to speak of the **compatibility of the label with recycling processes**.

The advantage of removing the label from the recycled material stream is that it also removes the inks, adhesives and varnishes, which can cause disruptions sometimes.

\*Except for paper labels, in the paper/cardboard recycling stream.

## Adhesive labels: general recommendations

Given that labels are not generally recycled, the challenge is to prevent detection and recycling disruptions by making them as discreet as possible:

- **Optimise the coverage rate of the label**

Recommendation: the coverage limits (% surf.) for bottles and dispenser bottles made of plastic are as follows.

| % surf. 50% for bottles and dispenser bottles with a volume < 500 mL

| % surf. 70% for bottles and dispenser bottles with a volume > 500 mL

- **Optimise the thickness of the label**

- **Optimise the use of associated elements:** ink, varnish, adhesive, etc.

Recommendation: apply eco-inking practices for inks, as described in Citeo's Eco-Inking Guide.

[https://bo.citeo.com/sites/default/files/2019-07/20190524\\_Citeo\\_Guide%20%C3%A9co-encrage\\_WEB.pdf](https://bo.citeo.com/sites/default/files/2019-07/20190524_Citeo_Guide%20%C3%A9co-encrage_WEB.pdf) (in French)



## Special case of sleeves: general recommendations

Full sleeves disrupt the optical sorting process for bottles and dispenser bottles by preventing them from being detected properly. A full sleeve reduces sorting efficiency and may direct the bottle to the rejects bin or the wrong stream. At the regeneration stage, some sleeves are compatible with the bottle to a certain degree. However, sleeves ultimately result in greater losses and waste at regeneration plants.

To prevent the detection and recycling processes from being disrupted:

- **Optimise the coverage rate by using partial sleeves**

Recommendation: the coverage limits (% surf.) for bottles and dispenser bottles made of plastic are as follows.

| % surf. 50% for bottles and dispenser bottles with a volume < 500 mL

| % surf. 70% for bottles and dispenser bottles with a volume > 500 mL

- **Optimise their thickness**

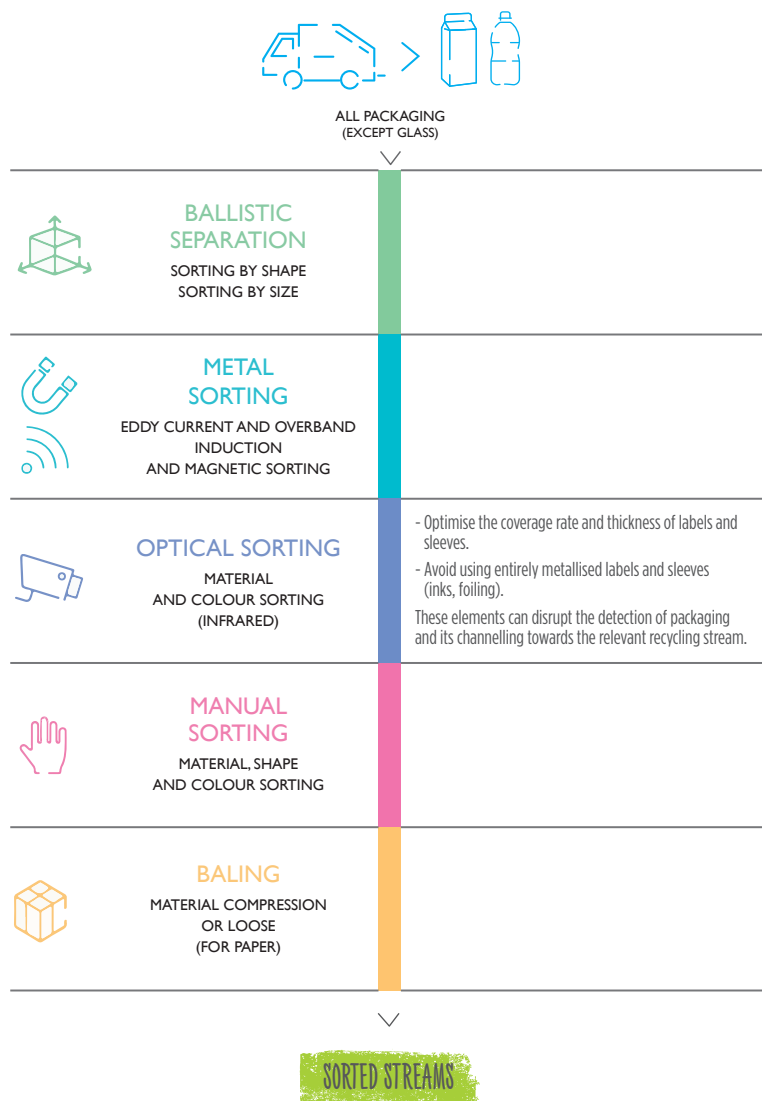
Recommendation: do not exceed a thickness of 60 µm, above which plastic bottle detection is less effective.

- **Opt for transparent areas** (not printed on or with colour in blend) on full sleeves to make the packaging items easier to detect.

To improve the recyclability of sleeves, Citeo is currently studying the use of **perforations** that would enable sleeves to be removed during collection, transport, sorting or baling.

## Main stages at sorting centres

A packaging item will travel smoothly through a sorting centre if the labels comply with the specific recommendations



# Adhesive labels

Applied to plastic packaging



## Main stages\* of the plastic recycling process



\*Standard workflow: some stages are optional depending on the recycling stream.

## Compatibility with plastic packaging

### RECOMMENDATIONS FOR ALL PLASTIC STREAMS


- The **density**, or “d”, is a factor that strongly influences the behaviour of the label and packaging during the **FLOTATION** stage. Elements with a density greater than 1 sink, whereas those with a density less than 1 float. This stage can be used by recycling operators to separate labels from packaging if the densities are on opposite sides of the scale.  
The density of a label depends on the material used for the label as well as the adhesive and inks used.
- The **adhesive** used in labels is an important factor as labels should come away from the packaging during the recycling process. Adhesives should be **water releasable** to allow this separation to take place at the **WASHING** stage. The washing conditions vary according to the recycling stream:
  - PET\* stream: washing at 60-80°C under agitation, in alkaline conditions (with soda).
  - PP\* and HDPE\* streams: washing at room temperature under agitation, without adding soda (but with cleaning agent residues from the products: washing detergent, shampoo, etc.). A compromise needs to be found for the various functions the packaging is expected to provide.
  - Flexible PE\* stream: washing at room temperature under agitation, without detergent or soda.
- The **inks** used on plastic packaging labels should be **non-washable**. They should remain on the label during **WASHING** stages and not contaminate the washing water or recycled material. Several technologies are used to prevent or limit the risk of inks bleeding: special inks that do not bleed, using a protective varnish, trapping the ink between two plastic coatings.
- Wherever possible, any **metal elements**, such as aluminium coatings, metallic inks, RFID\* tags, etc. **should be avoided** on plastic packaging. Even the smallest amount of metal particles in plastic streams leads to a loss of materials during the sorting and recycling stages, a lower quality recycled material (visual defects such as unmelted particles or metal inclusions) and an increase in machine stoppages (clogged filters disrupt the recycling process and the stream as a whole).



# Compatibility with packaging made of clear, coloured, opaque PET

## RECOMMENDATIONS *based on COTREP recommendations*

	COMPATIBILITY			NON-COMPATIBLE
	Total - Ideal	Partial - Tolerated	Limited - To be avoided	And/or disruptive
Label	Film d < 1 (e.g. PP*, OPP*, PE*)	Paper	PET* film on coloured PET* packaging other than opaque white	PET* film on clear or opaque white PET* packaging Other film d > 1 (e.g. PVC*, PETg*, PS*) Complex with aluminium layer (e.g. paper/Al, PP*/Al)
Sleeve	PE* d < 1 PP* d < 1 OPP* d < 1	Other sleeve d < 1	PET* on coloured PET* packaging other than opaque white	PET* on clear or opaque white PET* packaging Other sleeve d > 1 (e.g. PETg*, PS*, PLA*, PVC*)
Adhesive	Water releasable at 60-80°C, in alkaline conditions (with soda) and without leaving residues on the packaging			Non-water releasable at 60-80°C in alkaline conditions (with soda)
Ink	No printing Non-washable in water at 60-80°C in alkaline conditions (with soda) Eco-inking EuPIA** Best Practices			Washable Metallised
Other				RFID* chip



Reminder of coverage limits



For packaging > 500 mL, opt  
for a surface area of < 70%



For packaging < 500 mL, opt  
for a surface area of < 50%

## EXPLANATIONS

→ The clear PET\* and white opaque PET\* recycling streams are very demanding as the outlet could be food contact applications. Direct printing **on PET\* packaging** should be avoided. In this particular case, **a label is an appropriate solution** for communication, and better for recycling insofar as it is well designed. It **holds inks and decoration**, which are then removed along with the label.

PET\* has a density greater than 1 and therefore sinks in the **FLotation** tanks. **Labels with a density less than 1**, allowing them to float, **should be used wherever possible**, to make separation easier. Paper labels are also compatible, but they are slightly less popular with recycling operators as they may defibrate in the **Washing** water, carry more ink and remain stuck to the resin to be recycled. To be removed from packaging, labels with a density less than 1 and made of paper also need to have a water-releasable adhesive at 60-80°C, in alkaline conditions (with soda). These labels are collected in the **Washing** water. They are generally sent for energy recovery.

PET\* and PETg\* labels are not recommended as they are difficult to separate from packaging because of the material they are made of and the fact they have a density greater than 1. The inks and adhesives used with such labels significantly reduce the quality of the recycled material. The impact of such labels is greater in recycling streams which produce **food-grade** recycled material.

Similar rules apply to sleeves. General recommendations for sleeves can also be found on page 11.

**For more information** – See page 36  
 COTREP - Technical Committee for the Recycling of Plastic Packaging in France  
 EPBP - European PET Bottle Platform, “Quick test for PET bottles”  
 EuPIA - European Printing Ink Association

\*See Glossary on page 37  
 \*\*See page 36

\*See Glossary on page 37

# Compatibility with packaging made of PP and PEHD

RECOMMENDATIONS based on COTREP recommendations

	COMPATIBILITY			NON-COMPATIBLE
	Total - Ideal	Partial - Tolerated	Limited - To be avoided	And/or disruptive
Label	PP*, OPP* PE* film with water-releasable adhesive	Paper with water-releasable adhesive Paper wrap with a line of non-water-releasable adhesive PP*, OPP*, on PP* packaging with non-water-releasable adhesive PE* on PE* packaging with non-water-releasable adhesive Film d > 1 with water-releasable adhesive e.g. PET*, PETg*, PS*)	PSL paper with non-water-releasable adhesive PP*, OPP* with non-water-releasable adhesive on PE* packaging PE* with non-water-releasable adhesive on PP* packaging	PVC* film Complex with aluminium layer (e.g. PP*/Al) Other film d > 1 with non-water-releasable adhesive
Sleeve	PE* PP*, OPP*	PS*, PETg*, PET*		PVC*, PLA*
Adhesive <sup>(1)</sup>	Water releasable at room temperature and without residue on the packaging			Non-water releasable at room temperature
Ink	No printing Not washable at room temperature Eco-inking EuPIA** Best Practices			Washable at room temperature Metallised
IML		PP* based IML* on PP* packaging PE* based IML* on PE* packaging	PE* based IML* on PP* packaging PP* based IML* on PE* packaging	IML* with other plastic resin than the one used for the packaging
Other				RFID* chip

## Reminder of coverage limits



For packaging > 500 mL, opt for a surface area of < 70%



For packaging < 500 mL, opt for a surface area of < 50%

\*See Glossary on page 37

\*\*See page 36

## EXPLANATIONS



During recycling, the labels placed on PP\* or PE\* packaging need to be removed from the stream. **Wherever possible, PP\* and PE\* labels with water-releasable adhesive should be used so that the labels can be removed from packaging during the WASHING stage.** Although these labels cannot be separated from packaging during the **FLOTATION** stage, they are removed through aspiration at recycling sites. Any label residues left on the packaging do not interfere with the recycling process.

If non-water-releasable adhesive is used, the PP\* or PE\* labels tend to stay on the packaging during washing and therefore cannot be separated from it. Recycling the PP\* or PE\* packaging together with such labels leads to a reduced quality of recycled material, mainly because of the adhesive.

PP\* and PE\* have a density less than 1 and therefore float in the **FLOTATION** tanks. Using labels which sink can improve separation. That is the case for paper labels and plastic labels with a density greater than 1. Water-releasable adhesives need to be used to enable such labels to be removed from the packaging.

Some types of rigid PP\* or PE\* packaging contain In-Mould Labelling (IML\*). It is better to use a plastic resin identical to that of the packaging for IML\*, to avoid disruptions to the recycling process. As a general rule, using different types of plastic resin for IML and packaging should be avoided, with the exception of rigid PE\* or PP\* packaging, whose recycling streams tolerate a limited amount of PP\* or PE\* respectively.

Similar rules apply to sleeves. General recommendations for sleeves can also be found on page 11.

**For more information** - See page 36

COTREP - Technical Committee for the Recycling of Plastic Packaging in France

EuPIA - European Printing Ink Association

\*See Glossary on page 37

(1) If the type of adhesive recommended is not specified in the "Label" line, check the "Adhesive" line.

# Compatibility with flexible PE packaging

## RECOMMENDATIONS based on COTREP recommendations

	COMPATIBILITY			NON-COMPATIBLE
	Total - Ideal	Partial - Tolerated	Limited - To be avoided	And/or disruptive
Label	PE* film with water-releasable adhesive	Paper with water-releasable adhesive PE* film with non-water-releasable adhesive Other film d > 1 with water-releasable adhesive (e.g. PET*, PETg*, PS*)	Paper with non-water-releasable adhesive PP*, OPP* film	PVC* film Other film d < 1 Other film d > 1 with non-water-releasable adhesive Complex with aluminium layer (e.g. PP*/Al)
Adhesive <sup>(1)</sup>	Water releasable at room temperature and without residue on the packaging			Non-water releasable at room temperature
Ink	Not washable in water at room temperature Eco-inking EuPIA** Best Practices			Washable in water at room temperature Metallised
Other				RFID* chip

Reminder of coverage limits



For packaging > 500 mL, opt for a surface area of < 70%



For packaging < 500 mL, opt for a surface area of < 50%

(1) If the type of adhesive recommended is not specified in the "Label" line, check the "Adhesive" line.

\*See Glossary on page 37  
\*\*See page 36

## EXPLANATIONS

→ The recommendations for labels placed on flexible PE\* packaging are currently based on feedback provided by recycling operators.

What we currently know about labels applied to flexible PE\* packaging is likely to change with testing.

Separating labels from flexible PE\* packaging is more complicated as the packaging and label thicknesses are quite similar. The recycled material obtained in this stream is not food-grade for the moment, **so recycling operators prefer direct printing on the packaging.**

If adhesive labels are used on flexible PE\* packaging, the choice of adhesive used needs to be made carefully. The adhesive should be water releasable during washing at room temperature under agitation without detergent/soda, to make sure labels are removed at the **WASHING** stage.

Once they have been removed, paper labels or labels with a density greater than 1 can be separated from the packaging material at the **FLOTATION** stage.

However, labels with a density less than 1 cannot be separated at the **FLOTATION** stage and stay in the recycling stream, reducing the quality of the recycled material. Out of all the labels with a density less than 1, PP\* labels interfere the least with the quality of the recycled material compared with other label materials (as PP\* is also a polyolefin). Lastly, a PE\* label with a water-releasable adhesive is the best solution, because even if the label is not removed, the PE\* in the label will have little, if any, impact on the quality of the recycled material.

**For more information** - See page 36

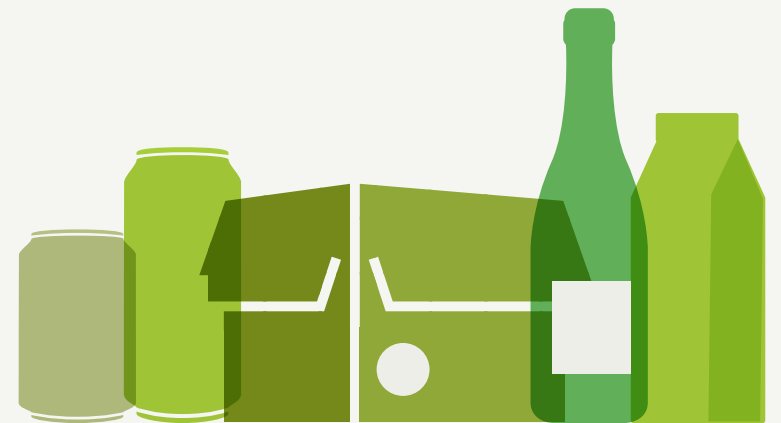
COTREP - Technical Committee for the Recycling of Plastic Packaging in France  
EuPIA - European Printing Ink Association

\*See Glossary on page 37



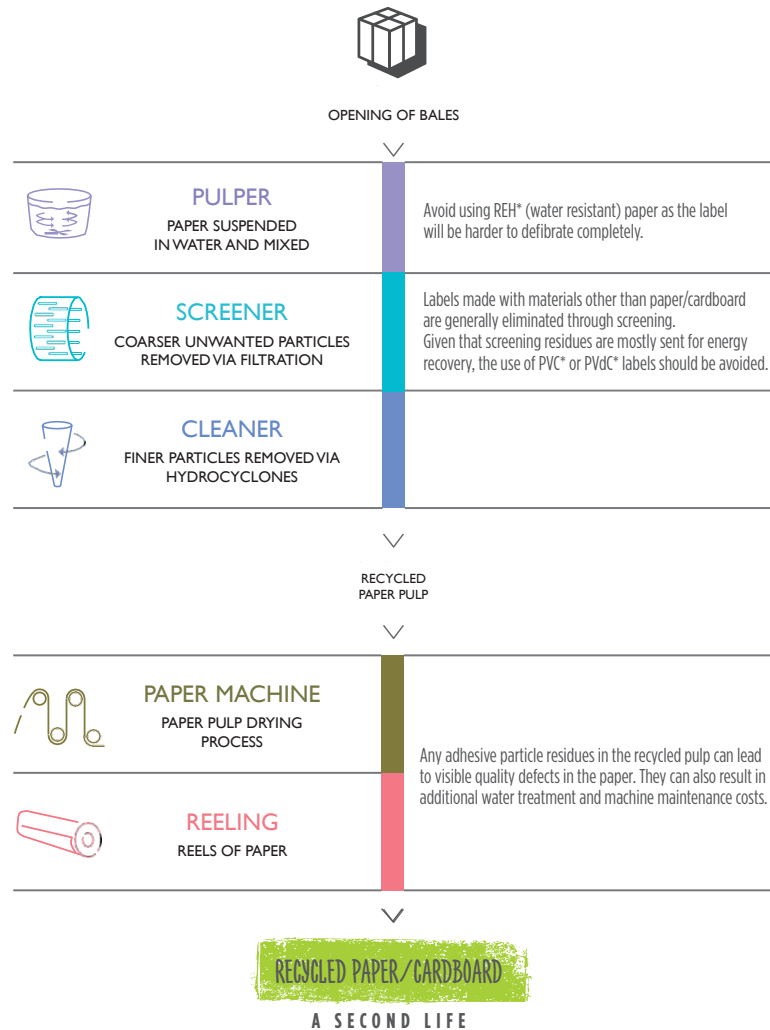
# Adhesive labels

applied to other packaging  
(paper/cardboard, metals, glass)





## Main stages of the paper/cardboard recycling process



## Compatibility with paper/cardboard packaging

RECOMMENDATIONS based on CEREC recommendations

	COMPATIBILITY			NON-COMPATIBLE
	Total - Ideal	Partial - Tolerated	Limited - To be avoided	And/or disruptive
Label	Paper	Plastics other than PVC*/PVdC Wet-strength treated paper (REH* paper)	PVC*/PVdC*	
Adhesive	Screenable/Removable (e.g. non-PSA hotmelt adhesives)	Dispersible	Partially dispersible and/or non-screenable (e.g. PSA)	
Ink	Eco-inking	Bright colours which strongly bleed off	Containing more than 1% MOSH* and MOAH*	
Other		RFID* chip		

### EXPLANATIONS



The efficiency of cellulose fibre extraction is measured by calculating **paper/cardboard yield**. The **yield improves if there are less non-fibrous elements (plastics, adhesive, etc.)**.

**Screenable/removable adhesives are fully compatible with the recycling process.** They are broken down into coarse particles by the **PULPER** and are then removed by the **SCREENER**. Most non-PSA\* hotmelt adhesives are screenable/removable.

**Dispersible adhesives are compatible with the recycling process.** They are broken down into small particles (<1 µm) in the **PULPER** and remain suspended in the water.

**Partially dispersible and/or non-screenable/non-removable adhesives should be avoided**, which includes most PSA. They are tacky and introduce particles called “stickies” into the process, which result in quality defects in the recycled paper, as well as additional machine maintenance and water treatment costs.

Citeo recommends using **inks containing less than 1% MOSH\* and MOAH\*** (see mineral oil section on page 31) to keep all recycled fibre outlet options open.

**For more information** - See page 36

CEREC (French Committee for the Evaluation of Recyclability of Paper and Board Packaging) tests the recyclability of paper and board packaging, along with its accessories.

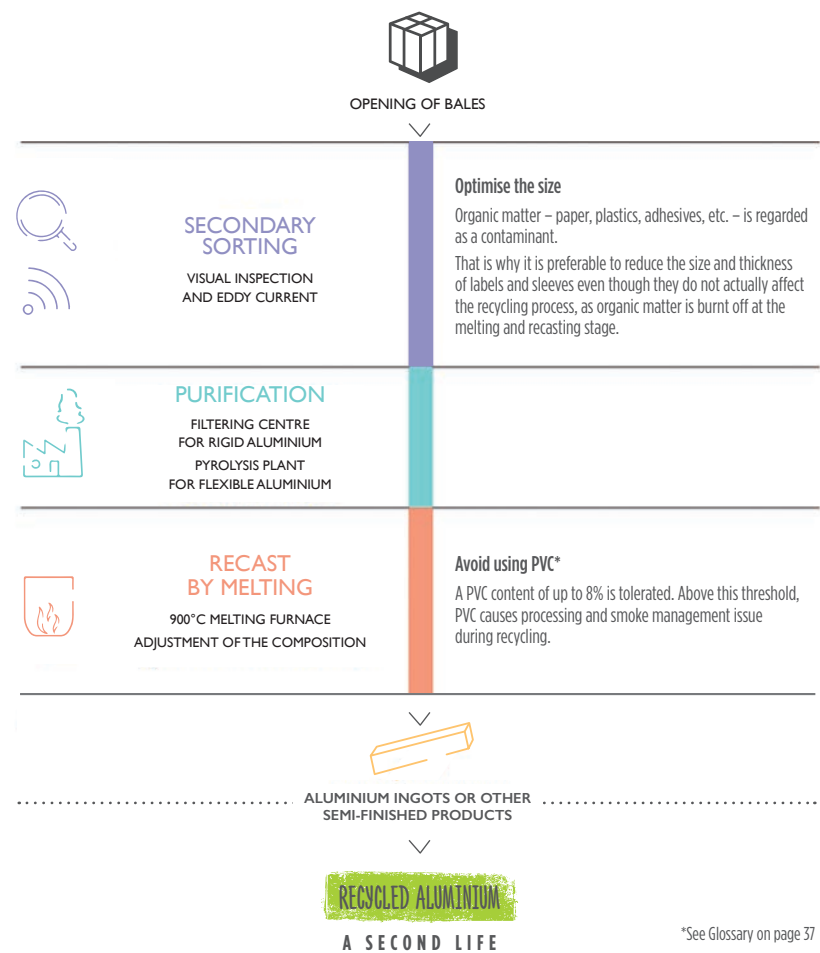
\*See Glossary on page 37

# Compatibility with metal packaging

Most metal packaging currently placed on the market in France, such as cans, tins, tubes, etc., do not include adhesive labels. The few aluminium packaging items that come with a label do not disrupt the recycling process as they represent only a very small part of overall aluminium tonnage. As for steel packaging, the weight of the label is minimal compared with that of the packaging, and does not disrupt the recycling process.

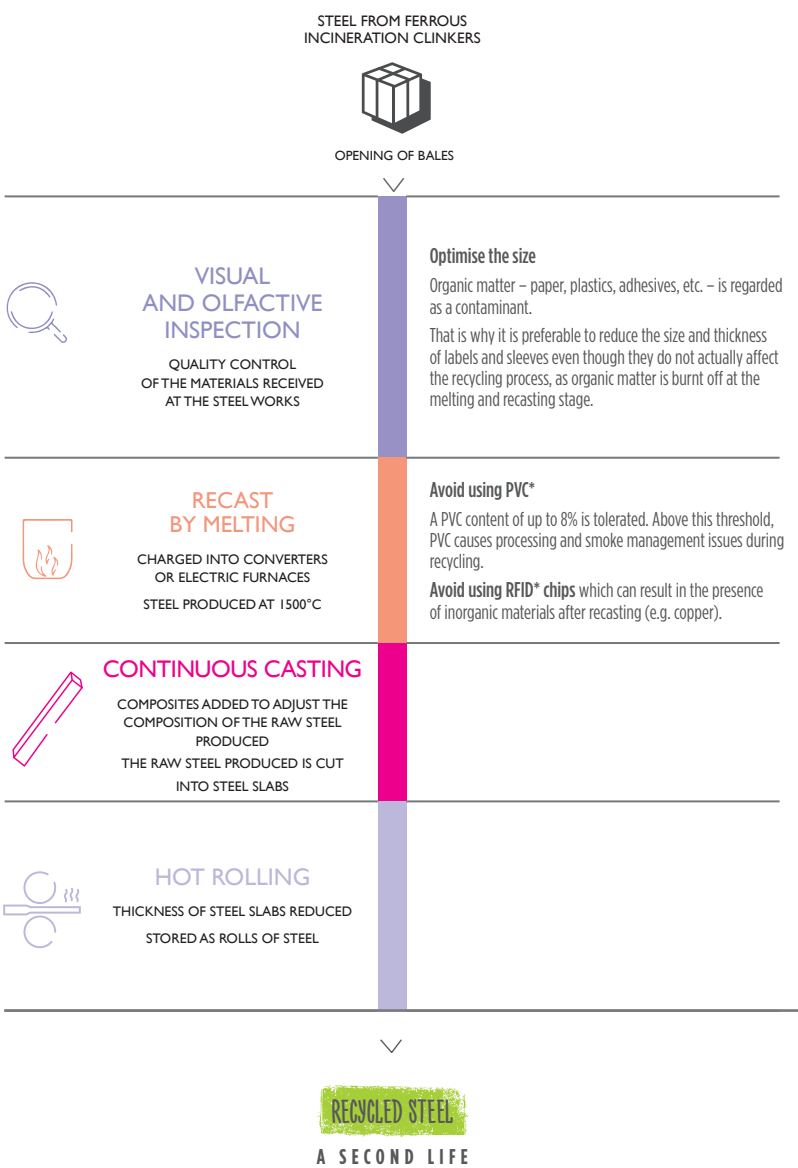
In both cases, the labels are dealt with at the **RECAST BY MELTING** stage of the metal recycling process. The following recommendations are given for information purposes, to discourage the development of new associated elements which may disrupt the recycling streams.

## Main stages of the aluminium recycling process



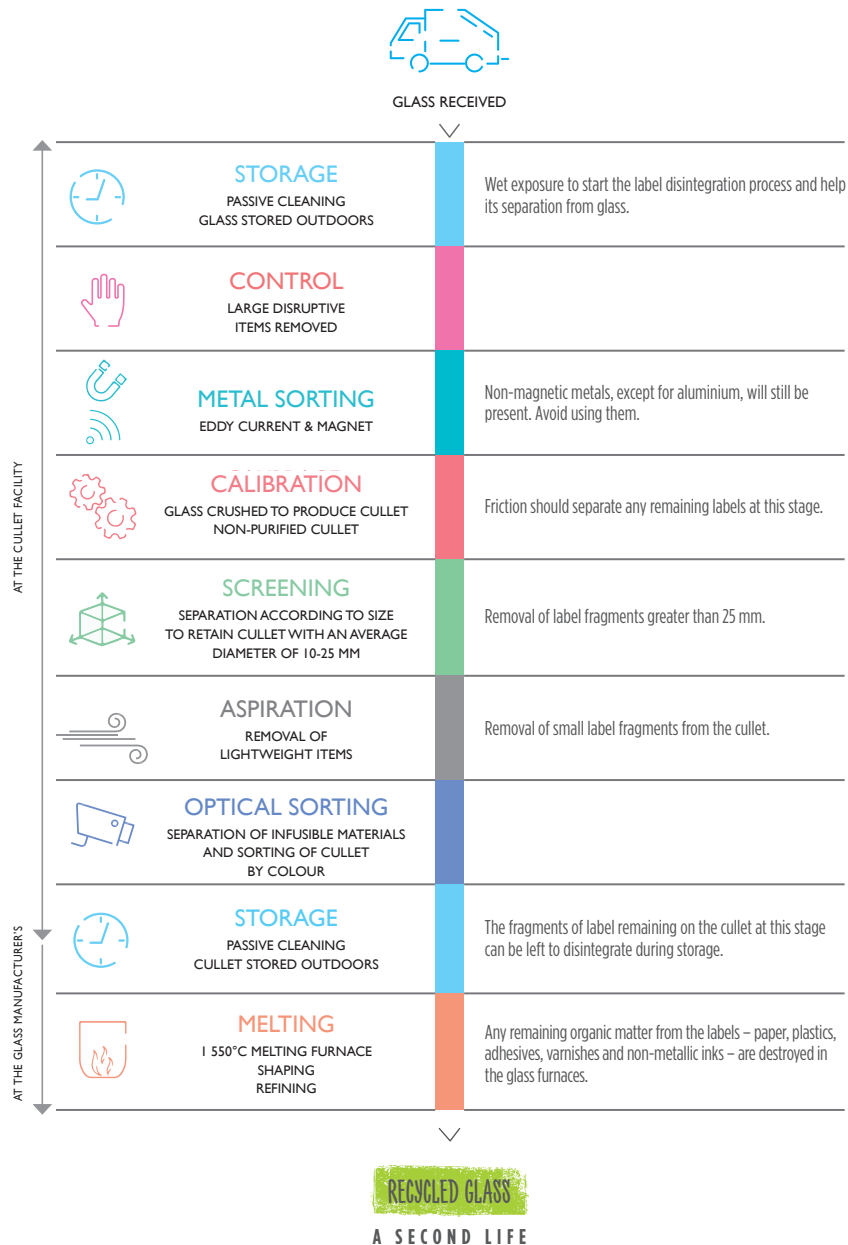
\*See Glossary on page 37

## Main stages of the steel recycling process



\*See Glossary on page 37

## Main stages of the glass recycling process



## Compatibility with glass packaging

### RECOMMENDATIONS

	COMPATIBILITY			NON-COMPATIBLE
	Total - Ideal	Partial - Tolerated	Limited - To be avoided	And/or disruptive
Label		Paper or plastic film (other than PVC*/PVdC*) if associated with a non-ultra-adhesive adhesive	PVC*/PVdC*	Paper or plastic film (other than PVC*/PVdC*) if associated with an ultra-adhesive adhesive
Adhesive				Ultra-adhesive (e.g. some PSA)
Ink	Eco-inking			
Other				Infusible materials (enamel, porcelain, ceramics) Metals that are non-magnetic and non-reactive to eddy currents (pewter, brass, stainless steel, etc.)



### EXPLANATIONS

It is better if labels are removed from glass by the friction created at the collection and cullet preparation stages, for two reasons:

- To prevent cullet from remaining stuck to the label and being rejected at the **CALIBRATION** stage. Otherwise, significant amounts of glass are lost.
- To limit the amount of organic matter brought into the glass furnaces by fragments of label still present on the cullet. This matter does not disrupt the recycling process as it is burnt off at the **MELTING** stage. However, excessively high levels of organic matter can impact the quality of the glass, especially the colour.

These issues are observed with non-removable labels described by the recycling operators as "ultra-adhesive". We recommend to not oversize the sticky property of adhesive, and optimising the size and thickness of labels wherever possible.

**For more information** - See page 36

A working group from the CETIE (International Technical Centre for Bottling) has developed a compatibility test for adhesive labels and glass bottles. Adelphi and Citeo are working on the applicability of this test.

# For packaging without a stream

Packaging items that do not have a recycling stream are generally rejected at sorting centres or recycling facilities, and sent for energy recovery or to landfill sites. Some remain in the recycling streams by mistake and interfere with the recycling process and/or impact the quality of the recycled material.

That is the case for:

- Existing packaging materials: ceramics, enamel, etc.
- New packaging materials: bamboo, PLA\*, etc.

In any case, PVC\* labels and sleeves can also make packaging incompatible with energy recovery and should be avoided at all costs.

# Adhesive labels and health issues

## → RECOMMENDATIONS

Taking health factors into consideration with regard to recyclability is crucial for keeping the circular economy safe and sound. It is not so much about evaluating the health impact of packaging and its components on consumers, but more about understanding the risk substances can pose to the circular economy, even if they are only found on the outer surface of packaging.

**A substance posing a health risk which enters the recycling stream without being decontaminated first can cut the number of outlets open to the recycled material.**

### Clear PET\* recycling operators

Clear rPET is a recycled plastic resin that can be used for food-grade packaging. The quality requirements are therefore very strict and recycling operators do all they can to eliminate labels during secondary sorting stages, to prevent potential contamination like unwanted traces of Bisphenol A (BPA) and benzene.

### Mineral oils in printing inks for paper/cardboard

Citeo recommends **not using inks with a mineral oil (MOSH\* and MOAH\*) content of over 1%**. Some mineral oil compounds are hazardous to health and cannot be removed during the recycling process. Their presence can cut the number of outlets open to recycled fibres, including the food-grade packaging outlet.

PRINTING	INKS	✓	✗	✗
Rotogravure				
Digital		•		
Flexography		•		
UV offset		•		
Electron beam		•		
Low migration		•		
Conventional offset	Plant-based or "white" No information	•	•	
Heatset	Plant-based or "white" Conventional or no information		•	•

✓ Mineral oil-free (MOF)

✗ Check with suppliers whether MOF

✗ Mineral oils present

For more information: <https://www.citeo.com/le-mag/huiles-minerales-notre-plan-dactions-pour-accompagner-les-entreprises/> (in French)

### Bisphenol A in inks

BPA-free inks should be used for all packaging. BPA is prohibited in food-grade packaging in France. Every effort needs to be made to prevent BPA from following the recycled material through the recycling process, so that there are no traces of it at the end of the process.

### Accidental contamination

UNFEA's guide on ink and varnish migration is a key tool for controlling the potential risk to the health and safety of consumers.

If a hazardous substance happens to be present (non-intentionally added), the right thing to do is to inform everyone involved along the entire manufacturing chain. The marketer can then make sure there is no risk for the packaging's end use.





**For further  
information**

# New key figures for 2020

[https://bo.citeo.com/sites/default/files/2021-06/20210622\\_RA\\_CITEO\\_POSMOF\\_2.pdf](https://bo.citeo.com/sites/default/files/2021-06/20210622_RA_CITEO_POSMOF_2.pdf) [in French]

## SORTING AND RECYCLING OF HOUSEHOLD PACKAGING

### Sorting practices

**51.5 KG** of packaging sorted per inhabitant per year on average:  
**18.2 KG** of paper, board, steel, aluminium and plastic packaging, and **33.3 KG** of glass packaging

**89%\*** of people in France sort their packaging: **51%** make a habit of it

**35M** people in France can sort all their packaging and paper waste thanks to simplified sorting instructions (on 1 January 2021)

Target:  
**100%** of people in France in the next few years



### Recycling performance

**68%** recycling rate  
 i.e. **3.7M** tonnes of household packaging recycled



### Environmental benefits

**1.6M** tonnes of CO<sub>2</sub> cut thanks to packaging recycling  
 equivalent to **800,000** fewer cars on the road



### Household packaging: health crisis slows recycling down

In 2020, the volume of packaging recycled continued to increase (+ 56,000 tonnes).

The arrival of the Covid-19 pandemic had two main impacts on recycling:

- **At-home consumption increased, with a knock-on effect on the volume of household packaging placed on the market (+3%).** Lockdown and homeoffice meant people had to stay at home, leading to a greater demand for products that could be consumed at home: +4% for paper/cardboard (sudden increase in e-commerce since the crisis), +2% for plastic and +2% for glass.

- **Collection services had to adapt to the crisis.** Although selective collection and sorting centre operations were disrupted during the first lockdown, the impact on the volume of packaging recycled was minimal thanks to the help of local authorities in keeping collection services running.

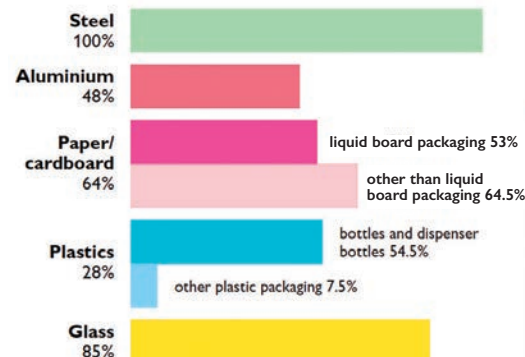
The packaging recycling rate stands at **68%** compared to **68.8%** in 2019.

Recycling increased for glass and aluminium, as well as additional types of plastic packaging – a direct result of simplifying sorting habits to include plastic pots, trays and films.

\* Observatoires du geste de tri des emballages et des papiers study - 2019 - Ipsos.



### Recycling rate per material



### Companies

**21,116** customer contracts  
**€783M** in contributions for the year

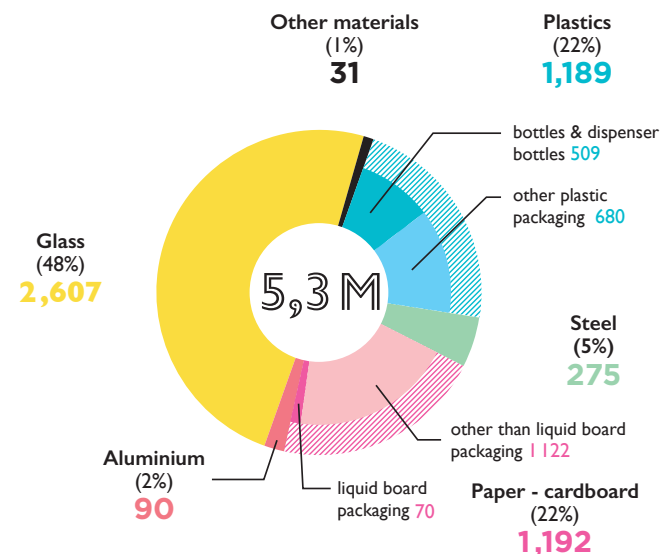


### Local Authorities

**688** local authorities under contract  
 i.e. **100%** of people in France have access to a packaging sorting scheme



### Distribution of packaging tonnage which contributes to financing the sector (in thousands of tonnes - rounded figures)



M = million, MD = milliard.  
 Rounded figures. Detailed figures are given in Citeo & Adelphe's 2020 annual report, available at [www.citeo.com](http://www.citeo.com).

## Professional guides, associations and federations

### Citeo's Eco-Inking guide

[https://bo.citeo.com/sites/default/files/2019-07/20190524\\_Citeo\\_Guide%20%C3%A9co-encrage\\_WEB.pdf](https://bo.citeo.com/sites/default/files/2019-07/20190524_Citeo_Guide%20%C3%A9co-encrage_WEB.pdf)  
(in French)

### Adhesives inks and varnishes

**EuPIA European Printing Ink Association** - <https://www.eupia.org/>

**Guide** - [https://www.eupia.org/fileadmin/FilesAndTradExtx\\_edm/2016-03-31-EuPIA\\_GMP\\_4th\\_version\\_final.pdf](https://www.eupia.org/fileadmin/FilesAndTradExtx_edm/2016-03-31-EuPIA_GMP_4th_version_final.pdf)

**FEICA in Europe** - <https://www.feica.eu/>

**FIPEC in France** - <http://www.fipec.org/> (in French)

### Plastics

**COTREP** - Technical Committee for the Recycling of Plastic Packaging in France

**COTREP recommendations** - <https://www.cotrep.fr/en/steps/>

**COTREP guides, protocols and technical notices** - <https://www.cotrep.fr/en/technical-study/>

**COTREP General Notice AG12 on labels and sleeves** - <https://www.cotrep.fr/content/uploads/sites/3/2019/02/cotrep-ag12-label-and-sleeve.pdf>

**EPBP** - European PET Bottle Platform - <https://www.epbp.org/>

**PET bottle guides** - <https://www.epbp.org/design-guidelines/products> (list of water soluble adhesives approved for PET bottles - see the green-amber-red table > adhesives > pressure-sensitive labels)

**Quick tests for PET bottles** - [https://www.epbp.org/page/8/downloads#downloads\\_39](https://www.epbp.org/page/8/downloads#downloads_39)

**Petcore Europe** - Association representing the complete PET value chain

**PET Tray Guide**

[https://www.petcore-europe.org/images/pet/Design\\_for\\_Recycling\\_Guidelines\\_PET\\_Trays\\_Clear\\_Transparent\\_Jan\\_2020.pdf](https://www.petcore-europe.org/images/pet/Design_for_Recycling_Guidelines_PET_Trays_Clear_Transparent_Jan_2020.pdf)

### Paper/cardboard

**CEREC**, the French Committee for the Evaluation of Recyclability of Paper and Board Packaging, tests the recyclability of paper/card board packaging, along with its accessories.

**CEREC Guide**

[https://www.cerrec-emballages.fr/opencms/sites/fr/data/documents/REVIPAC\\_dossier\\_complet.pdf](https://www.cerrec-emballages.fr/opencms/sites/fr/data/documents/REVIPAC_dossier_complet.pdf)  
(in French)

**CEREC Technical Notices**

[https://www.cerrec-emballages.fr/opencms/sites/fr/rubrique\\_lesavis/liste\\_des\\_avis.html](https://www.cerrec-emballages.fr/opencms/sites/fr/rubrique_lesavis/liste_des_avis.html) (in French)

### Glass

**CETIE** (working group) - [https://www.cetie.org/en/presentation\\_92.html](https://www.cetie.org/en/presentation_92.html)

## Glossary

<b>IML</b>	In-Mould Labelling
<b>MOAH</b>	Mineral Oil Aromatic Hydrocarbons
<b>MOSH</b>	Mineral Oil Saturated Hydrocarbons
<b>OPP</b>	Oriented polypropylene
<b>PE</b>	Polyethylene
<b>LDPE</b>	Low-density polyethylene
<b>PET</b>	Polyethylene terephthalate
<b>PETg</b>	Polyethylene terephthalate glycol
<b>HDPE</b>	High density polyethylene
<b>PLA</b>	Polylactic acid
<b>PP</b>	Polypropylene
<b>PSA</b>	Pressure-sensitive adhesives
<b>PS</b>	Polystyrene
<b>PSL</b>	Pressure-sensitive labels
<b>PVC</b>	Polyvinyl chloride
<b>Pvdc</b>	Polyvinylidene Chloride
<b>REH</b>	Water Resistant
<b>ERP</b>	Extended producer responsibility
<b>RFID</b>	Radio frequency identification
<b>CR</b>	Coverage rate



# Definitions

**Water-releasable adhesive:** adhesive which enables the label to be removed during washing.

**Ultra-adhesive adhesive:** adhesive which cannot be removed from glass packaging by the friction created at the collection stage and during cullet preparation at cullet plants and glass manufacturing plants.

**PSA** (Pressure Sensitive Adhesive): adhesive which bonds when pressure is applied, without the need for solvents, water or heat to activate the adhesive.

**Eco-inking:** an eco-inking method that enables the design on labels or other communication materials to be optimised, to cut ink consumption without impacting the quality of the designs.

**Washable ink:** ink designed to be washed off a substrate under specific washing conditions.

**PSA** (Pressure Sensitive Label) or **traditional adhesive labels:** labels which bond when pressure is applied, without the need for solvents, water or heat to activate the adhesive.

**Conventional or non-adhesive labels:** labels supplied without a pre-applied adhesive, and glued on during labelling.

**IML** (In-Mould Labelling): a pre-printed label that is placed directly into the packaging mould before it is manufactured by injection moulding or thermoforming. The label becomes an integral part of the packaging after the fusion between the plastic resin and the label.

**Sleeve:** decorative plastic label which hugs the shape of the packaging (bottle or dispenser bottle). Its distinguishing features is that it does not require an adhesive to stay on the packaging. It adheres by itself thanks to shrink or stretch technology.

**Full sleeve:** a sleeve that covers most of the bottle. Sleeves are considered to be full if their coverage rate is as follows:

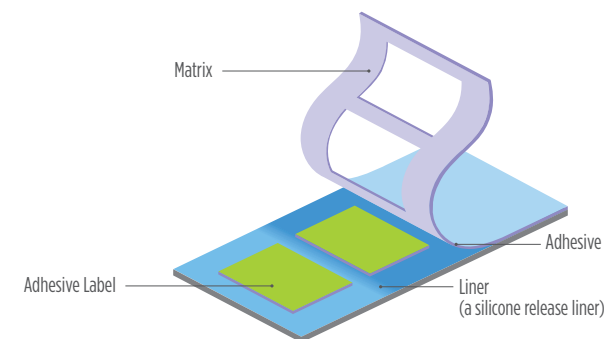
- Bottle > 500 mL: more than 70% of the body is covered
- Bottle < 500 mL: more than 50% of the body is covered

**Partial sleeve:** a sleeve that does not cover the entire bottle. Sleeves are considered to be partial if their coverage rate is as follows:

- Bottle > 500 mL: less than 70% of the body is covered
- Bottle < 500 mL: less than 50% of the body is covered

**Rejects:** non-recycled elements that are removed from the stream of materials during the sorting and recycling processes. They are detrimental to the recycled material yield and removing them generates additional processing costs.

**Coverage rate:** surface area of the label in relation to the visible packaging surface area.



## ACKNOWLEDGEMENTS

We would like to thank all the partners who contributed to the production of this guide, and more specifically Citeo for its strong involvement, as well as UNFEA's supplier partners.





All paper can be sorted and recycled,  
including this document.

# CITEO

Together, let's give  
our products a new life.

Citeo  
50-52 boulevard Haussmann  
75009 Paris - France  
Tel. +33 (0)181 690 600  
[www.citeo.com](http://www.citeo.com)



UNFEA  
4/6 rue Borromée, 75015 Paris - France  
Tel. +33 (0)633 705 906 / +33 (0)145 443 143  
[federation-etiquettes@unfea.org](mailto:federation-etiquettes@unfea.org)

[www.unfea.org](http://www.unfea.org)

**FRENCH UNION OF ADHESIVE LABEL MANUFACTURERS**