

# TREE Recyclability Requirements

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## Packaging Recyclability Test

February 2019  
TREE V4.1



## 1.1 What is recyclability?

The end of life of household packaging, and particularly its recycling, are closely linked to the choices made during the design stage:

- The choice of the packaging's main materials determines its suitability for recycling (recyclability). There are recycling streams for some materials but others cannot be recycled because there is no established recycling stream.
- The choices made in terms of material combinations are also decisive. These combinations may or may not be compatible with material recycling in the existing streams given the current recycling technologies.

Different situations may therefore render your packaging non- or less recyclable:

- 1) Your packaging **is excluded from the sorting guidelines and therefore not recycled**. This is the case with wood packaging and ceramic or earthenware pots, for instance. This packaging is either incinerated and the energy is recovered or it is sent to landfill.
- 2) Your packaging is **included in the sorting guidelines but there is no recycling stream for the materials you have chosen**. This is notably the case for rigid plastic packaging containing resins other than PET, PE and PP.
- 3) You have opted for material combinations resulting in lower recycling performance or total exclusion of your packaging from the recycling stream.

## 2 Examples:

*Case of a paper label stuck to the body of a PET bottle: the body of the PET bottle can be recycled but the paper label cannot be recycled in the "PET" stream despite the fact that paper is a recyclable material. A PET label stuck to the same bottle would be recycled.*

*Case of a ceramic cap on a glass bottle: the body of the glass bottle and cap will be considered as ejected at the pre-sorting stage before glass reprocessing and will therefore not be recycled. Ceramics (just like porcelain) melt at a higher temperature than glass. This material is therefore considered as "infusible" in glass furnaces and it produces flaws in the recycled glass.*

### 2.1 Packaging that disrupts sorting - Who decides on the criteria and how?

Recyclers regularly carry out monitoring to identify household packaging that, although featuring sorting guidelines, is not included in existing recycling streams.

These recycling issues are studied by COTREP for plastic ([www.cotrep.fr](http://www.cotrep.fr)), CEREC for paper and cardboard ([www.cerrec-emballages.fr](http://www.cerrec-emballages.fr)) and the recycling streams for other materials (CSVMF for glass, FAR for aluminium, Arcelor for steel).

## 2.2 Packaging that disrupts sorting - How is this system being developed?

The list of disruptive packaging types can be updated following suggestions from stakeholders. When disruption is reported, the issue is studied. According to the results, the concerned packaging will then either feature (or not) on the list of packaging types that disrupt sorting.

Conversely, packaging that is currently considered disruptive may no longer be so tomorrow, as recycling technologies are improving and outlets for secondary raw material are being developed. It will therefore be removed from the list. This is the case, for example, of opaque glass. As glass processors are now equipped with more advanced optical sorting technologies, opaque glass no longer disrupts glass recycling.

## 3 Implementation of recyclability requirements

### 3.1 Recyclability requirements managed

This document aims to set out the recyclability requirements that are **automatically** managed in the tool, i.e. in which cases the CSU packaging is considered as recyclable, whether wholly or partly.

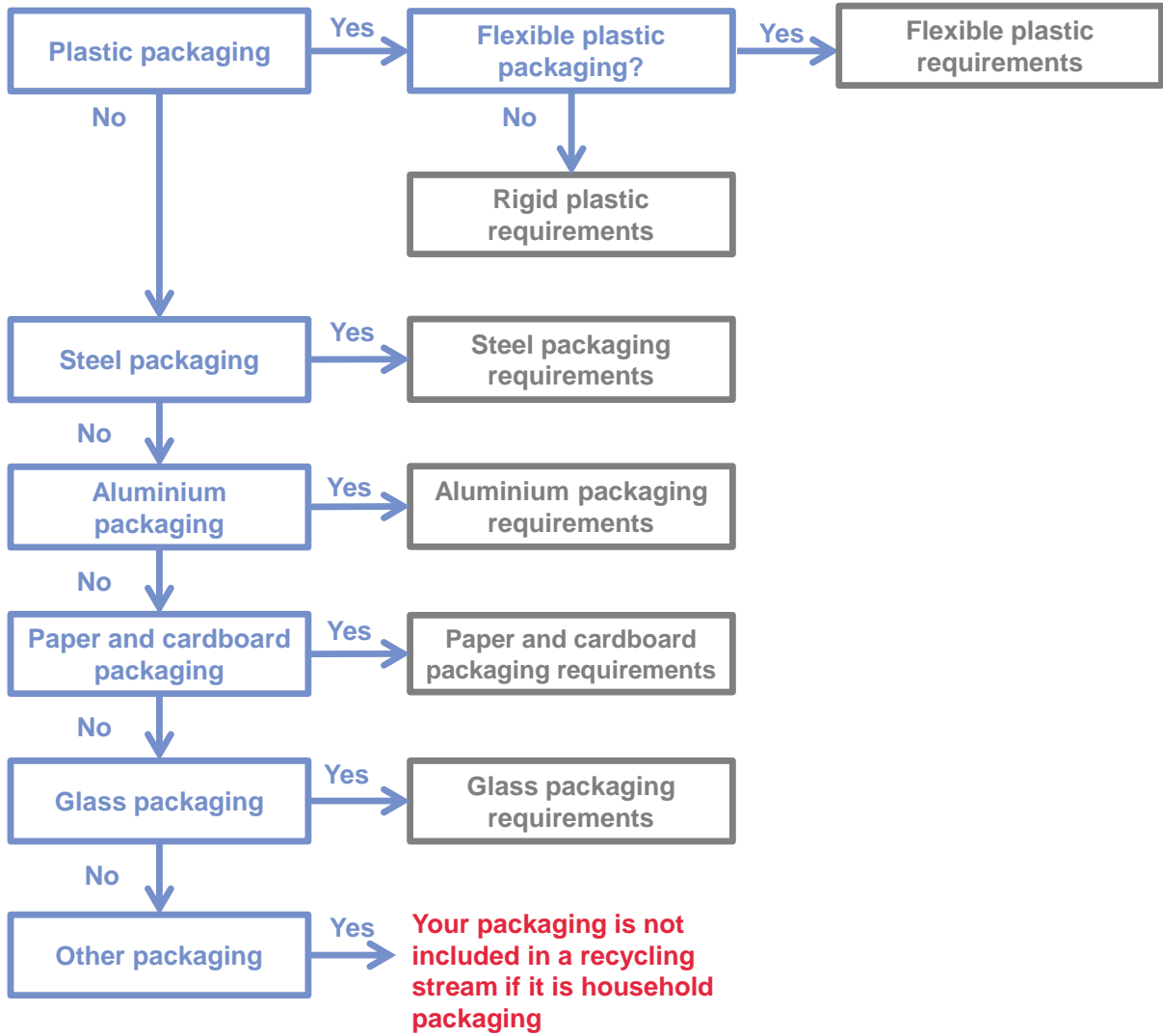
### 3.2 General principle

The recyclability requirements applying to CSU packaging in TREE are managed as shown in the figure below.

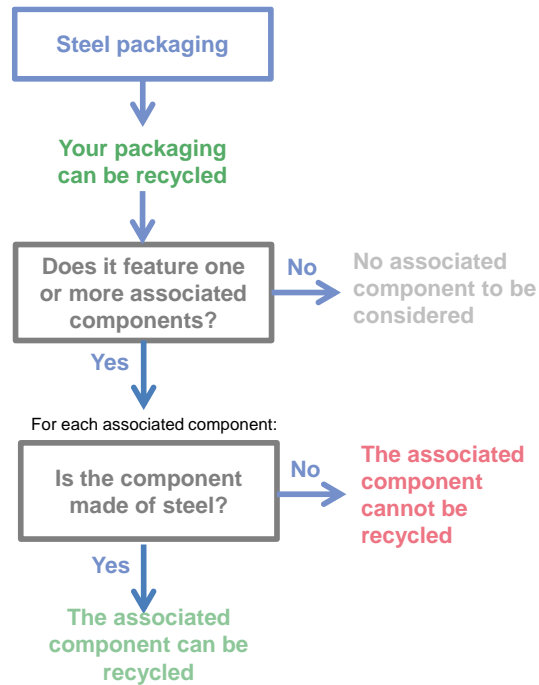
The specific requirements for each packaging type are provided thereafter.

Is your packaging?

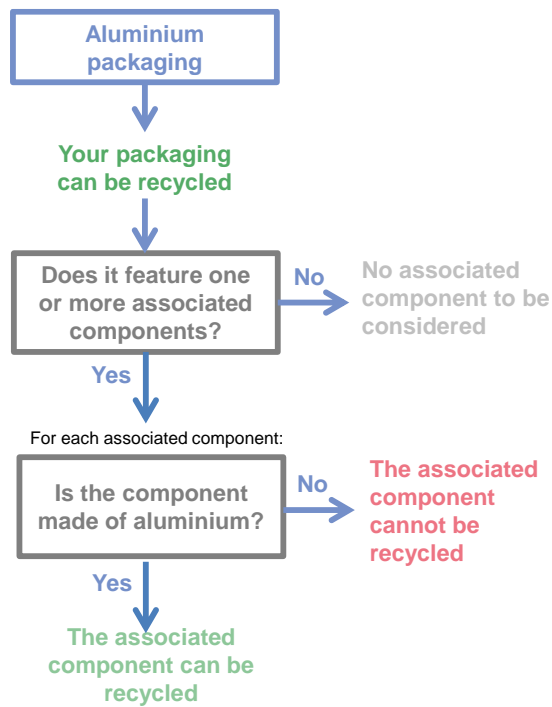
Refer to the following requirements to assess its recyclability



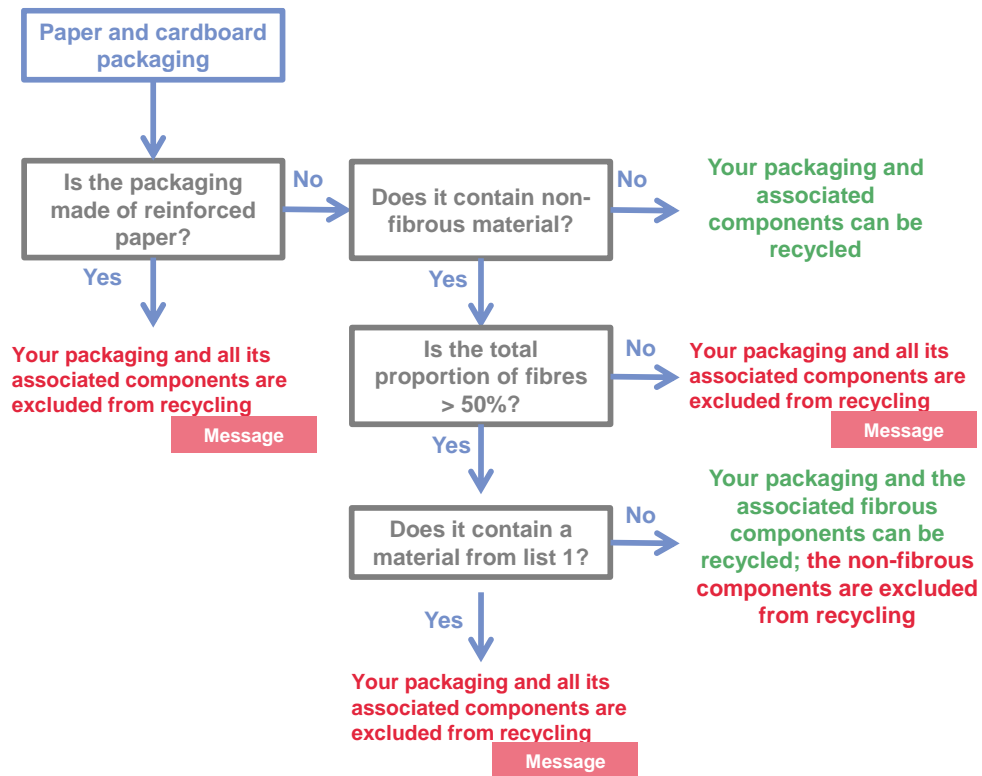
### 3.3 Recyclability requirements for steel packaging



### 3.4 Recyclability requirements for aluminium packaging

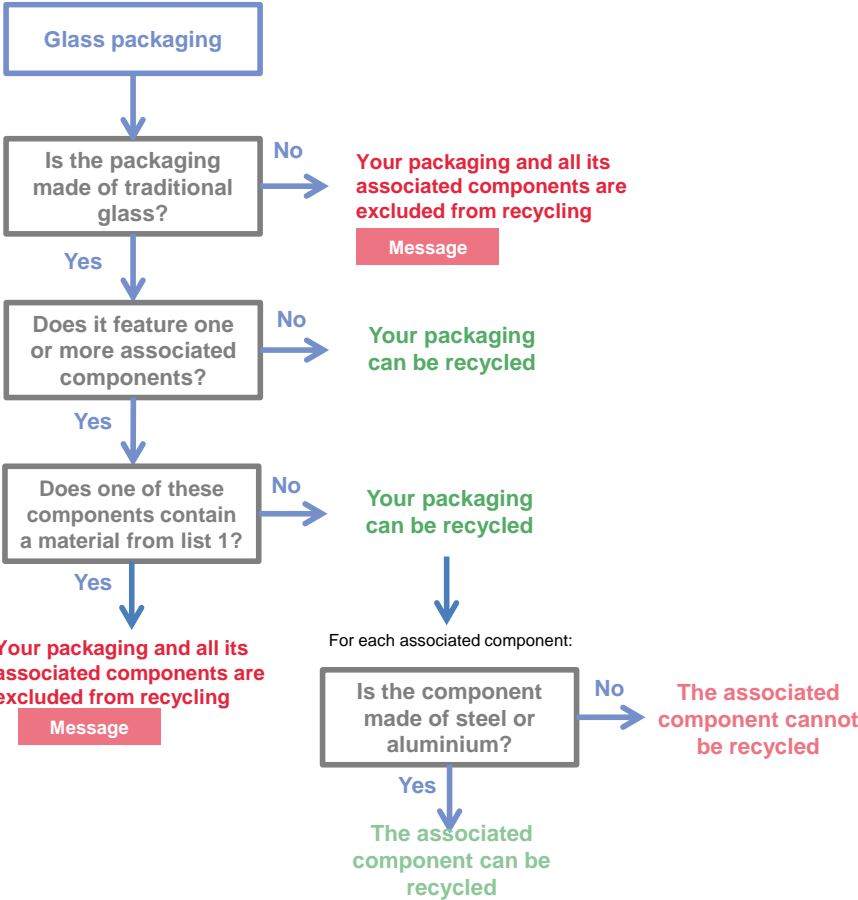


### 3.5 Recyclability requirements for paper and cardboard packaging



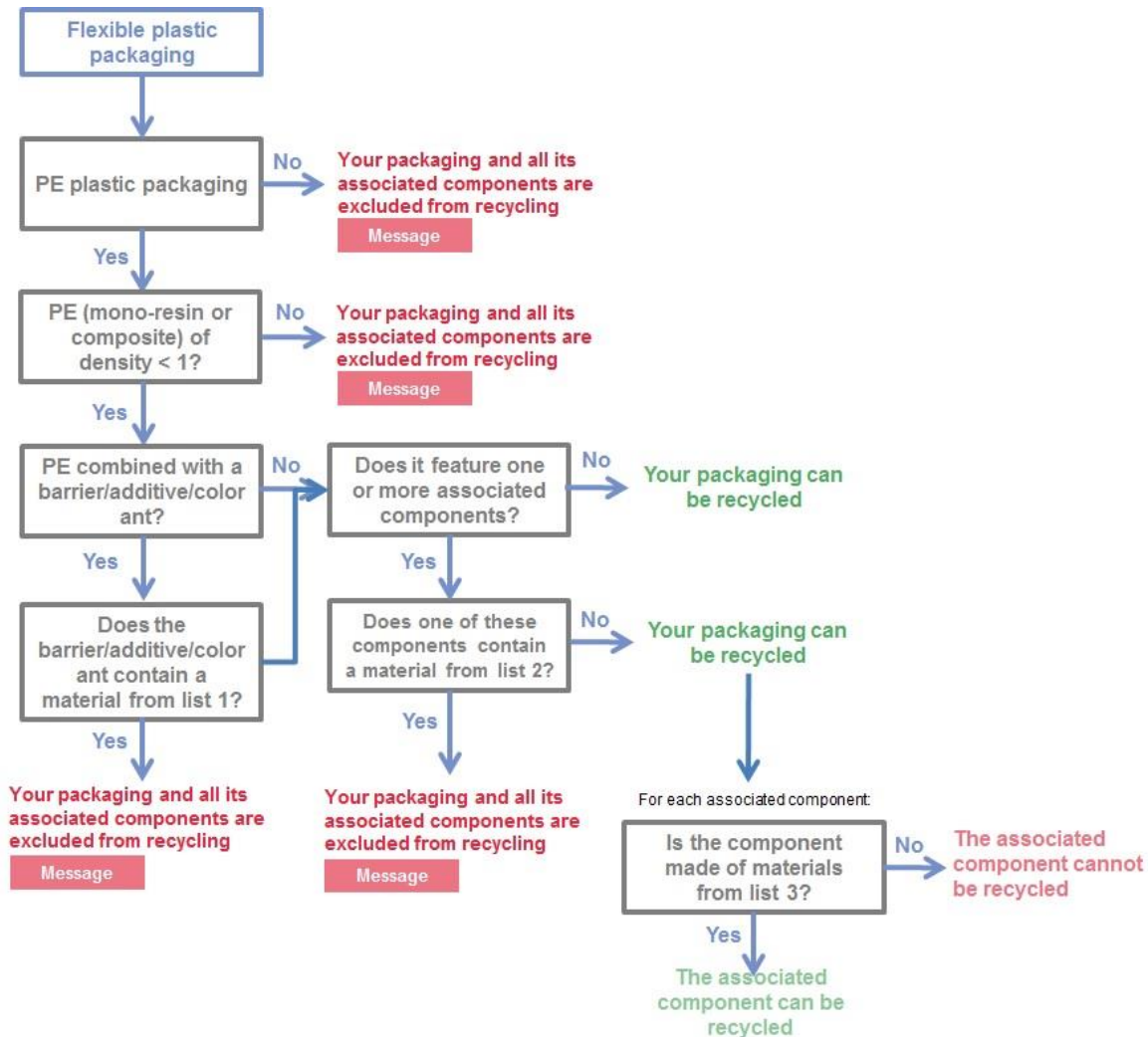
List 1
Plastic - PA Nylon 6, fibres
Plastic - Polyester, woven fibres
Textile - Cotton, woven fibres
Glass - traditional glass (soda-lime glass)
Glass - technical glass (borosilicate or other)
Other - Ceramics
Other - Wax
Other - Crystal
Other - Porcelain

### 3.6 Recyclability requirements for glass packaging



List 1
Glass - technical glass (borosilicate or other)
Other - Ceramics
Other - Crystal
Other - Porcelain
Glass - technical glass (borosilicate or other)

### 3.7 Requirements for flexible plastic packaging



List 1	List 2
Wood - Wood, crate	Wood - Wood, crate
Wood - Wood, box	Wood - Wood, box
Wood - Wood, reusable pallet	Wood - Wood, reusable pallet
Wood - Wood, single-use pallet	Wood - Wood, single-use pallet
Metal - Steel packaging, sheet (tin)	Metal - Steel packaging, sheet (tin)
Metal - Aluminium, ingot	Metal - Aluminium, ingot
Metal - Aluminium, foil (0.005 to 0.2 mm)	Metal - Aluminium, foil (0.005 to 0.2 mm)
Metal - Aluminium, sheet (0.5 to 6 mm)	Metal - Aluminium, sheet (0.5 to 6 mm)
Metal - Tin	Metal - Tin
Metal - Brass, ingot	Metal - Brass, ingot

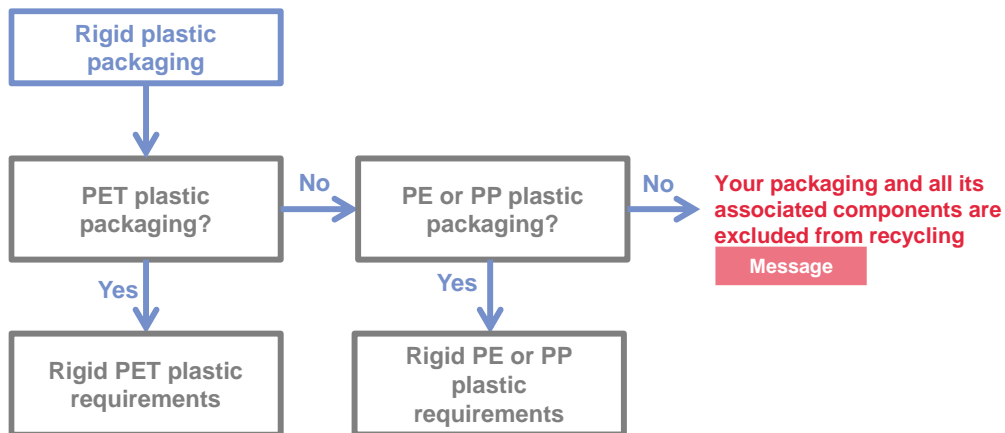


List 1	List 2
Metal - Zamak, ingot	Metal - Zamak, ingot
Paper and cardboard - Corrugated cardboard, sheet	Plastic - EVA, granules, density < 1
Paper and cardboard - Flat cardboard, sheet	Plastic - PETG
Paper and cardboard - Cellulose for moulding	Plastic - MIPS, granules, density < 1
Paper and cardboard - Cardboard for composite	Plastic - HIPS, granules, density < 1
Paper and cardboard - Paper for labels, sheet	Plastic - GPPS, granules, density < 1
Plastic - ABS, granules	Plastic - EPS, granules
Plastic - EVA, granules, density < 1	Plastic - Flexible PUR, granules
Plastic - PAN, granules	Plastic - PVC, granules
Plastic - PC, granules	Plastic - PVDC, granules
Plastic - amorphous PET, granules (obsolete)	Plastic - TPE, density < 1
Plastic - PET, granules	Glass - traditional glass (soda-lime glass)
Plastic - opaque PET (obsolete)	Glass - technical glass (borosilicate or other)
Plastic - PETG	Barrier - PTN, PGA
Plastic - PLA, granules	Barrier - aluminium
Plastic - PMMA, granules	Barrier - other cases
Plastic - POM, granules	Adhesive - acrylic adhesive
Plastic - MIPS, granules, density > 1	Ink - water-based - metallic pigments
Plastic - MIPS, granules, density < 1	Ink - mineral oil-based - metallic pigments
Plastic - HIPS, granules, density > 1	Ink - other solvents - metallic pigments
Plastic - HIPS, granules, density < 1	Ink - UV - metallic pigments
Plastic - GPPS, granules, density > 1	Other - Ceramics
Plastic - GPPS, granules, density < 1	Other - Wax
Plastic - EPS, granules	Other - Crystal
Plastic - Flexible PUR, granules	Other - Cork, stopper
Plastic - PVC, granules	Other - Porcelain
Plastic - PVDC, granules	Plastic - Silicone, density < 1
Plastic - SAN, granules	Other - Not available
Plastic - PA nylon 6, granules	Barrier - Oxygen scavengers
Plastic - PA Nylon 6, fibres	Plastic - composite plastic d<1
Plastic - Polyester, woven fibres	
Plastic - Starch-based, granules	

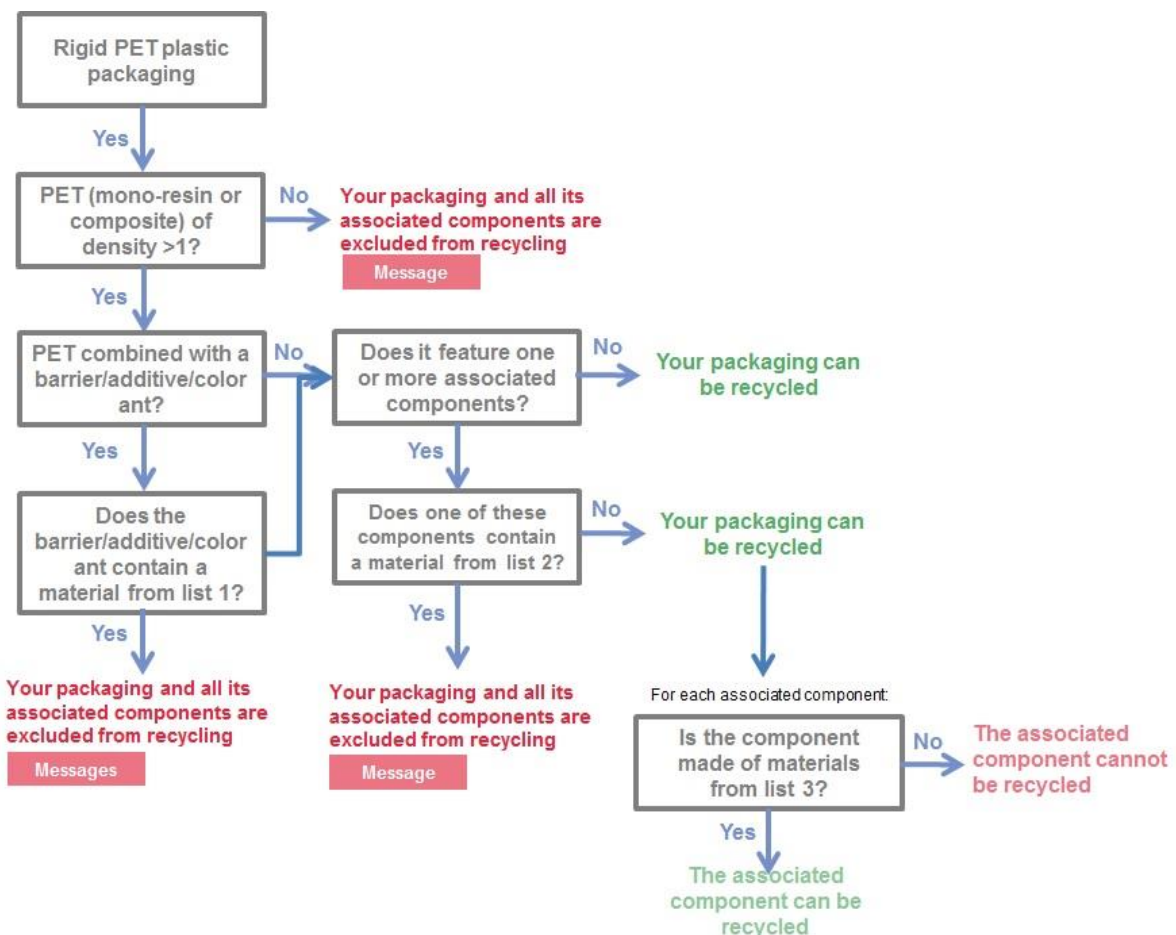
List 1	List 2
Plastic - PMMA, sheet	
Plastic - TPE, density > 1	
Plastic - TPE, density < 1	
Textile - Cotton, woven fibres	
Glass - traditional glass (soda-lime glass)	
Glass - technical glass (borosilicate or other)	
Barrier - PTN, PGA	
Barrier - aluminium	
Barrier - other cases	
Adhesive - acrylic adhesive	
Colorant - black colorant with carbon black	
Ink - water-based - metallic pigments	
Ink - mineral oil-based - metallic pigments	
Ink - other solvents - metallic pigments	
Ink - UV - metallic pigments	
Other - Ceramics	
Other - Wax	
Other - Crystal	
Other - Cork, stopper	
Other - Porcelain	
Plastic - Silicone, density > 1	
Plastic - Silicone, density < 1	
Other - Not available	
Plastic - EVA, granules, density > 1	
Barrier - Oxygen scavengers	
Plastic - composite plastic d>1	
Plastic - composite plastic d<1	

List 3	List 3
Plastic - LDPE, granules	Plastic - PP or OPP, granules
Plastic - LLDPE, granules	Plastic - bio-sourced HDPE
Plastic - HDPE, granules	Plastic - Surlyn®, granules

### 3.8 Requirements for rigid plastic packaging



### 3.9 Requirements for rigid PET plastic packaging



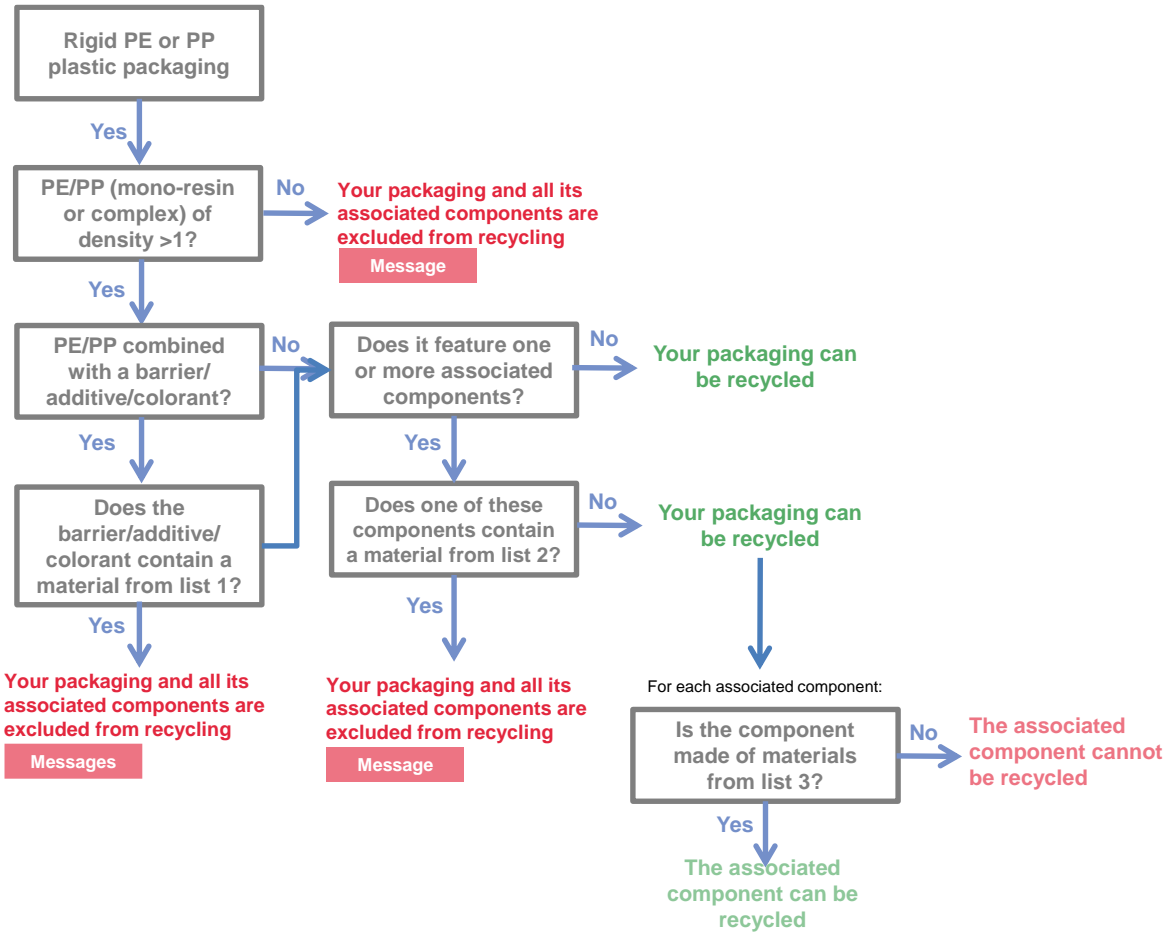
List 1	List 2
Wood - Wood, crate	Wood - Wood, crate
Wood - Wood, box	Wood - Wood, box
Wood - Wood, reusable pallet	Wood - Wood, reusable pallet
Wood - Wood, single-use pallet	Wood - Wood, single-use pallet
Metal - Steel packaging, sheet (tin)	Metal - Steel packaging, sheet (tin)
Metal - Aluminium, ingot	Metal - Aluminium, ingot
Metal - Aluminium, foil (0.005 to 0.2 mm)	Metal - Aluminium, foil (0.005 to 0.2 mm)
Metal - Aluminium, sheet (0.5 to 6 mm)	Metal - Aluminium, sheet (0.5 to 6 mm)
Metal - Tin	Metal - Tin
Metal - Brass, ingot	Metal - Brass, ingot
Metal - Zamak, ingot	Metal - Zamak, ingot
Paper and cardboard - Corrugated cardboard, sheet	Plastic - ABS, granules
Paper and cardboard - Flat cardboard, sheet	Barrier - EVOH
Paper and cardboard - Cellulose for moulding	Plastic - PAN, granules
Paper and cardboard - Cardboard for composite	Plastic - PC, granules
Paper and cardboard - Paper for labels, sheet	Plastic - opaque PET (obsolete)
Plastic - ABS, granules	Plastic - PETG
Plastic - EVA, granules, density < 1	Plastic - PLA, granules
Barrier - EVOH	Plastic - PMMA, granules
Plastic - PAN, granules	Plastic - POM, granules
Plastic - PC, granules	Plastic - MIPS, granules, density > 1
Plastic - LDPE, granules	Plastic - HIPS, granules, density > 1
Plastic - LLDPE, granules	Plastic - GPPS, granules, density > 1
Plastic - HDPE, granules	Plastic - Flexible PUR, granules
Plastic - opaque PET (obsolete)	Plastic - PVC, granules
Plastic - PETG	Plastic - PVDC, granules
Plastic - PLA, granules	Plastic - SAN, granules
Plastic - PMMA, granules	Plastic - PA Nylon 6, fibres
Plastic - POM, granules	Plastic - Polyester, woven fibres
Plastic - PP or OPP, granules	Plastic - Starch-based, granules
Plastic - MIPS, granules, density > 1	Plastic - PMMA, sheet

List 1	List 2
Plastic - MIPS, granules, density < 1	Plastic - Surlyn®, granules
Plastic - HIPS, granules, density > 1	Plastic - TPE, density > 1
Plastic - HIPS, granules, density < 1	Textile - Cotton, woven fibres
Plastic - GPPS, granules, density > 1	Glass - traditional glass (soda-lime glass)
Plastic - GPPS, granules, density < 1	Glass - technical glass (borosilicate or other)
Plastic - EPS, granules	Additive - Other cases
Plastic - Flexible PUR, granules	Additive - Mineral, content > 4%
Plastic - PVC, granules	Barrier - aluminium
Plastic - PVDC, granules	Barrier - carbon black, as an invisible internal layer
Plastic - SAN, granules	Barrier - other cases
Plastic - PA Nylon 6, fibres	Ink - water-based - metallic pigments
Plastic - Polyester, woven fibres	Ink - mineral oil-based - metallic pigments
Plastic - Starch-based, granules	Ink - other solvents - metallic pigments
Plastic - PMMA, sheet	Ink - UV - metallic pigments
Plastic - Surlyn®, granules	Other - Ceramics
Plastic - TPE, density > 1	Other - Wax
Plastic - TPE, density < 1	Other - Crystal
Textile - Cotton, woven fibres	Other - Cork, stopper
Glass - traditional glass (soda-lime glass)	Other - Porcelain
Glass - technical glass (borosilicate or other)	Plastic - Silicone, density > 1
Additive - Other cases	Other - Not available
Additive - Mineral, content > 4%	Plastic - EVA, granules, density > 1
Barrier - aluminium	Plastic - composite plastic d>1
Barrier - carbon black, as an invisible internal layer	
Barrier - other cases	
Colorant - red colorant and derivatives	
Colorant - black colorant with carbon black	
Ink - water-based - metallic pigments	
Ink - mineral oil-based - metallic pigments	
Ink - other solvents - metallic pigments	
Ink - UV - metallic pigments	
Other - Ceramics	

List 1	List 2
Other - Wax	
Other - Crystal	
Other - Cork, stopper	
Other - Porcelain	
Plastic - Silicone, density > 1	
Plastic - Silicone, density < 1	
Other - Not available	
Plastic - EVA, granules, density > 1	
Plastic - composite plastic d>1	
Plastic - composite plastic d<1	

List 3	List 3
Plastic - LDPE, granules	Plastic - bio-sourced HDPE
Plastic - LLDPE, granules	Plastic - amorphous PET, granules (obsolete)
Plastic - HDPE, granules	Plastic - PET, granules
Plastic - PP or OPP, granules	

### 3.10 Requirements for rigid PE/PP plastic packaging



List 1	As for flexible PE plastic packaging
List 2	
List 3	

### 3.11 Limits to recyclability requirement management in TREE

Please note that not all recyclability requirements applying to household packaging could be managed in TREE.

For example, fibrous packaging material made from sugar cane fibres cannot be recycled due to binding agents which disrupt the paper and cardboard recycling stream. This requirement is not managed in TREE because we cannot model or offer this type of material in the tool due to the data available.

## 4 For further information

If you would like further information about points relating to TREE and recyclability requirement management, please get in touch with the **Hotline** [àpo](#) and your usual Citeo contact.