Netherlands Institute
for Sustainable Packaging

KIDV RECYCLE CHECK

RIGID PLASTIC PACKAGING

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Netherlands Institute
for Sustainable Packaging

Colophon

KIDV Recycle Check rigid plastic packaging

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This Recycle Check is updated every year. Go to the KIDV website to access the latest version. If you have any questions about this Recycle Check, please contact the KIDV.

We want to thank the branch organisations, producers and importers of packaged products and sorters and recyclers of rigid plastic packaging materials for their input and contribution to the realisation of this document.

Netherlands Institute
for Sustainable Packaging

Contents

Introduction

One of the measures you can take as an organisation to make packaging materials more sustainable is to make them easier to recycle. To help you realise that goal, the KIDV has developed this Recycle Check. The Recycle Check consists of a decision tree with questions and background information, which you can use to determine whether your packaging is easy to recycle. This first Recycle Check covers rigid plastic packaging materials. It will be updated on a yearly basis. Visit the KIDV website to access the latest version.

Your packaging is easy to recycle when it fits into existing operational (collection) systems, is sorted and recycled and there are applications for the recyclate. This definition is based on the definition drawn up by Plastics Recyclers Europe (PRE) and the Association of Plastic Recyclers (APR) for the recycling of plastic products (see frame). The decision tree is based on the current system for collecting, sorting and recycling packaging materials in the Netherlands in 2018. Care was taken to ensure this Recycle Check ties into those drawn up by other countries as much as possible.

Plastic packaging materials have to meet four conditions to be recyclable:

1. *The packaging must be made from a type of plastic that is collected, has a market value and/or is supported by a legally mandated programme.*
2. *The packaging must be sorted and bundled in predefined streams for recycling processes.*
3. *The packaging can be processed and recovered/recycled using commercial recycling processes.*
4. *The recycled plastic is used as a raw material for the production of new products.*

Innovative materials must demonstrate that a sufficient quantity of material can be collected and sorted, be compatible with existing industrial recycling processes or be available in sufficient quantities to justify the implementation of new recycling processes. (Plastics Recyclers Europe 2018)

The decision tree results in *easily recyclable packaging materials*, which meet the definition, and *non-optimally recyclable packaging materials*, which do not meet the definition. Easily recyclable packaging materials are processed as part of a stream that is far more homogeneous than the mixed stream of non-optimally recyclable packaging materials. The mixed stream consists of different types of plastic.

The decision tree is shown on pages 5 and 6 of this document. Each question is briefly explained on the subsequent pages.

Other aspects of increased sustainability

Recyclability is one of the aspects that you can improve to make your packaging materials more sustainable. The KIDV has drawn up seven tips to help you improve the sustainability of your packaging process. Recyclability is part of tip 4, *Create a clean material stream that can be recycled easily*. Another tip is to use recycled materials for the production of your packaging. When you use recycled materials to produce an easily recyclable packaging, you contribute to the closing of the chain. When developing a packaging, it is advisable to take all seven tips into account and ensure you meet the Essential Requirements.

If you have any questions about the Recycle Check or about making your packaging more sustainable, feel free to contact the KIDV. The website hoeverpakjeduurzaam.kidv.nl contains more information about making packaging materials more sustainable. This website also contains a wealth of background information about the process of recycling plastic.

Rigid plastic packaging materials

The decision tree on the next page will help you determine whether a packaging is easily recyclable or not. Each question comes with its own background information and clarification. Read this information carefully before answering each question. You can consult this information by clicking on the questions.

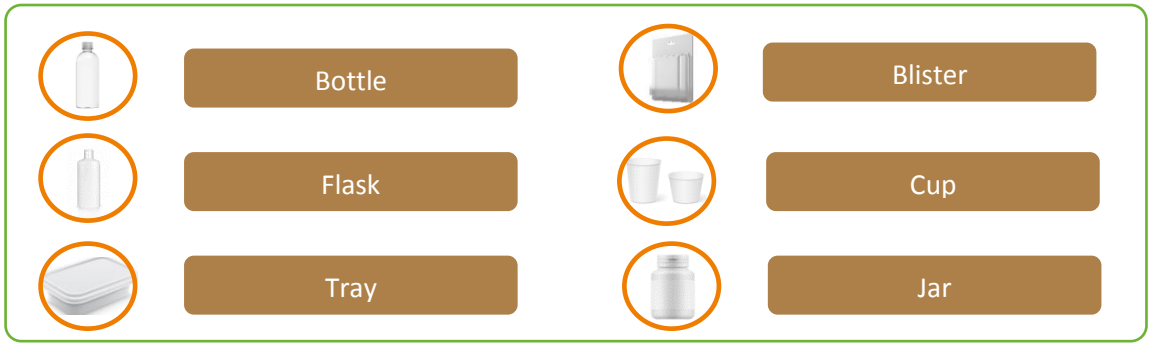

IMAGE 1: EXAMPLES OF RIGID PLASTIC PACKAGING MATERIALS

When evaluating the packaging, it is important to look at the integral packaging as it is disposed of (separately) by the user. The survey also mentions “the largest component of the packaging.” This is usually the part of the packaging that holds the product itself. Both aspects are explained in the image below. Integral packaging: the container (green), the cap/lid (blue) and the label (white). In these examples, the largest component of each packaging is shown in green.

IMAGE 2: RIGID PLASTIC PACKAGING: MAIN COMPONENT SHOWN IN GREEN

There are also rigid plastic packaging materials that are not included in the recycle check, because they must be disposed of as part of the residual waste stream. This includes packaging materials for medication or small chemical waste, as well as for example paint, glue or caulk.

IMAGE 3: EXAMPLE BLISTER, SMALL CHEMICAL WASTE, CAULK CONTAINERS

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Decision tree

Beforehand

a. Is it a rigid plastic packaging?
- No → This recycle check is only designed for rigid plastic packaging materials; the KIDV is developing separate recycle checks for other packaging materials.
- Yes

b. Is it a packaging for medical products or one that should be disposed of as part of the small chemical or residual waste stream?
- Yes → Packaging materials for medication or those that should be disposed of in the small chemical or residual waste streams are not part of this Recycle Check. Click here for more
- No

Interferents

1. Is the packaging free of oxo-degradable material?
- No → Oxo-degradable plastics are interferents in the recycling process.
- Yes

2. Is the packaging free of PVC or PVdC?
- No → PVC and PVdC interfere with the recycling of other plastics.
- Yes

3. Is the packaging free of silicone components?
- No → Silicone components interfere with the recycling of other plastics.
- Yes

Material

4. Does the largest component of the packaging consist of PE or PP or PET?
- No → Packaging materials made from other types of plastic are currently not optimally recyclable.
- Yes

5. Does the largest component consist exclusively of a mono-material without multi-layers, coatings or fillers?
- No → Packaging materials made from multi-layer materials or those with a coating impede the recycling process.
- Yes

Sorting

6. Is the packaging larger than 5 centimetres and is its volume smaller than or equal to 5 litres?
- No → Packaging materials that are too large or too small are currently not sorted for recycling.
- Yes

7. Does the largest component of the packaging have a colour other than black?
- No → Most sorting facilities currently do not detect or sort black packaging materials.
- Yes

8. Does the packaging have a label or sleeve and is it sortable and recyclable according to the table in the clarification?
- No → Labels and sleeves impede the recycling process due to their size or the combination of materials used.
- Yes

Recycling

9. Is the packaging free of hotmelt and non-washable adhesives?
- No → Non-washable adhesives and hotmelt impede the recycling process.
- Yes

10. Is the packaging free of enclosed metal components?
- No → Enclosed metal components impede the recycling of plastic.
- Yes

11. Is the packaging free of opaque PET?
- No → The dye in the packaging material impedes the recycling process.
- Yes

12. Is the packaging not a PET tray?
- No → This type of packaging material is only recycled on a limited scale at the moment.
- Yes

The packaging is easily recyclable.

Tip: To help consumers dispose of the packaging correctly, it is advisable to include a disposal logo on the packaging. Go to www.weggooiwijzer.nl for more information.

1. Is the packaging free of oxo-degradable material?

Current situation

When oxo-degradable plastics end up in recycling streams, they negatively impact the quality of the plastic recyclate. That makes them an interferent. Packaging materials that contain oxo-degradable plastics are therefore classified as non-optimally recyclable packaging materials.

Background

Oxo-degradable or oxo-biodegradable plastics are plastics that contain additives which break down into small pieces of plastic (micro-plastics) under the influence of ultraviolet light and oxygen. These additives can be added to all types of plastic.

Future perspective

It is not expected that oxo-degradable plastics will be classified as easily recyclable at some point in the future. At the moment of publication of this document, the European Union is discussing a ban on oxo-degradable plastics as part of the Single Use Plastics proposal.

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2. Is the packaging free of PVC or PVdC?

Current situation

PVC and PVdC (Polyvinylidene chloride) are seen as interferents in the recycling process. Packaging materials that contain PVC and PVdC are therefore classified as non-optimally recyclable.

Background

PVC used in applications other than packaging materials, also known as vinyl, is easily recyclable. The recyclate has many applications, for example for the production of PVC sewer pipes.

PVC and PVdC in packaging waste impede the recycling of other plastics. When PVC is present in the recycling stream of other plastics (for example as labels), this results in an unwanted chemical reaction that can damage the recycling equipment due to the formation of hydrochloric acid. The same goes for PVdC, which is mostly used in films.

Future perspective

The recycling perspective of packaging materials made from or containing PVC or PVdC is not expected to change in the near future.

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3. Is the packaging free of silicone components?

Current situation

Packaging materials that contain silicone components impede the recycling process. They are therefore classified as non-optimally recyclable packaging materials.

Background

Silicones are rubber-like plastics, also known as elastomers, that are used to produce components for which elasticity, resilience and yield strength are important characteristics. Silicones are used in packaging materials as components in for example caps. A silicone membrane is used in the cap of for example a condiment bottle to help dose the product. These silicone components impede the recycling process of the plastic used in the cap.

Silicone components cause various forms of damage, including flaws and defects in the surface of a product made from recycled plastic.

Future perspective

The recycling perspective of packaging materials that contain silicones and acrylates is not expected to change in the near future.

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4. Does the largest component of the packaging consist of PE or PP or PET?

Current situation

In the current situation, only packaging materials whose largest component is made from PET, PE or PP are sorted separately. These bales (the mono-streams) are marketed with a positive value.

The largest component of a packaging can be for example a bottle, tray or jar. Other rigid plastics, for example PLA or PS, are not sorted separately at the moment. Instead, these materials end up in the mixed waste stream. The other components of the packaging (for example the cap, lid or label) do not have to be made from the same material as its largest component, but they cannot be made of or contain an interferent.

Background

In sorting facilities for plastic waste, packaging materials are first sorted by shape (deformable or rigid) and type of plastic. The rigid plastics are then sorted by type of plastic: PP, (HD)PE and PET. Bio-PE and bio-PET are also included in this category, since they have the same molecular structure as PE and PET. Large flexible packaging materials are added to the stream of films; these consist mostly of PE and PP.

Rigid packaging materials that are not made of PE, PP or PET are currently not classified as easily recyclable packaging materials. Examples include PS and PLA. The streams of these materials are too small for cost-effective sorting and recycling; instead, they end up in the mixed waste stream.

Other materials that fall outside the definition of easily recyclable packaging materials are foamed materials such as EPS. These materials are prone to whirling through the air, which causes problems inside sorting facilities.

Additional information about related topics is available on the KIDV website:

- Information about sustainable packaging via the website hoeverpakjeduurzaam.kidv.nl
- Guidelines for sustainable packaging via the website recyclability.kidv.nl
- The KIDV has drawn up a factsheet about biodegradable packaging materials.

Future perspective

The sorting of packaging materials whose largest component is made of PE, PP or PET is not expected to change in the near future.

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5. Does the largest component of the packaging consist exclusively of a mono-material without multi-layers, coatings or fillers?

Current situation

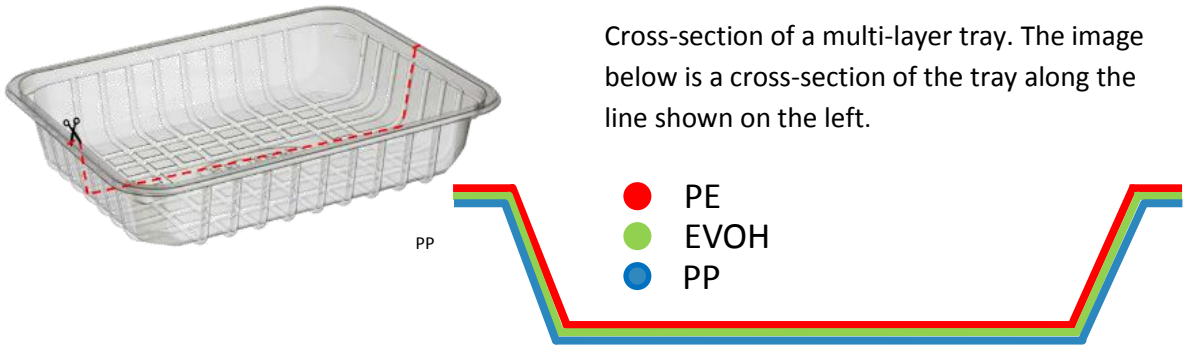
Because multi-layer packaging materials consist of multiple materials, they impede the recycling of the material of the packaging's main component. During recycling, the material of the main component is contaminated.

Background

Multi-layer

In multi-layer materials, different plastics are combined and stuck or melted together in a single packaging in such a way that the various layers are difficult or impossible to separate. A packaging may also consist of multiple layers of the same material, for example when using recycled and virgin materials. This type of packaging is not classified as multi-layer.

Image 4: Multi-layer packaging.



Abstract and simplified representation of the cross-section of a multi-layer tray, for example PP-EVOH-PE. The EVOH layer sits between two layers of plastic, creating a gas barrier.

Coating

A coating is usually a thin layer of a material other than the material that makes up the largest component. The coating is so thin and usually applied in such a way that separation of both types of material is impossible.

Fillers

When fillers, such as fibres, mica (pearl), metal flakes (metal look) and iron oxide (terracotta), are added to plastic, this affects the recyclate and its possible applications.

PET has a higher density than PE or PP. Recyclers use this difference in density to separate PET from PE and PP. PET sinks in water, while PE and PP will float. Bottle caps are often made from a different material than the bottles themselves. PET bottles almost always come with PE or PP caps; the two are separated using a sink/float technique.

Some fillers, such as talc and lime, can affect the density of a plastic. When the density of plastic changes due to the addition of fillers, the plastic may end up in the stream of a different plastic during the recycling process, where it impedes the recycling of the latter type of plastic.

An additive to PET that impedes its recycling is glycol, better known as PET-G. This substance is also classified as an interferent.

Packaging materials made from multi-layer materials or those with a coating or with added components are extremely difficult to separate. These types of packaging materials are therefore currently classified as non-optimally recyclable.

Future perspective

Research is being conducted into ways to effectively separate the layers of material that make up multi-layer packaging materials.

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6. Is the packaging larger than 5 centimetres and is its volume smaller than or equal to 5 litres?

Current situation

In a sorting facility, packaging materials are sorted by size. This is done in a large drum with holes, which functions as a sieve. With this process, packaging materials that are either too small or too large for the sorting process are separated from the rest of the material.

Background

Packaging materials are considered too small for sorting if they can fall through a round aperture with a five-centimetre diameter. These packaging materials are removed from the recycling stream. Current techniques are not capable of identifying the types of material that make up such small packaging materials. As a result, the material cannot be sorted.

Large rigid packaging materials are also unsuitable for sorting using current techniques. If the complete packaging has a volume of more than five litres, it is classified as unsortable and therefore non-optimally recyclable. This is recorded in sorting specifications.

Packaging materials that are smaller than five centimetres or larger than five litres are difficult to sort. Such packaging materials are therefore classified as non-optimally recyclable packaging materials.

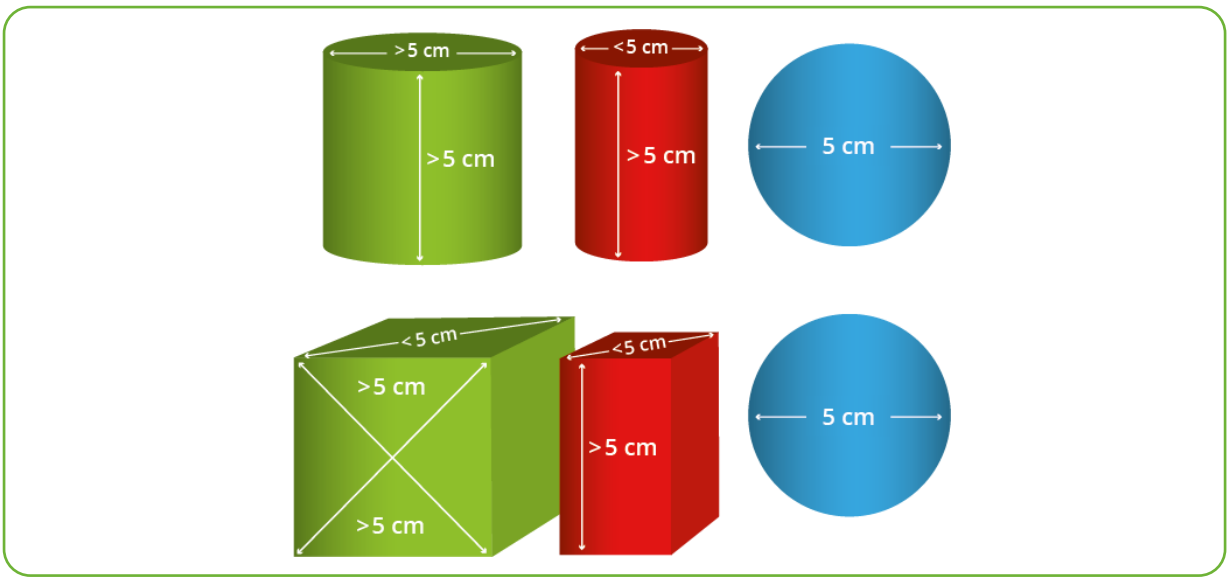

IMAGE 5: EXAMPLES OF PACKAGING MATERIALS THAT ARE SMALLER THAN 5 CM (RED) AND CAN FALL THROUGH AN APERTURE WITH A 5 CENTIMETRE DIAMETER.

Future perspective

A number of waste sorting organisations, particularly those that make use of subsequent separation, reduce the size of the parts in the incoming waste stream. Packaging materials that are too large are cut down in size to dimensions that are suitable for sorting. This technique is not used universally. As a result, excessively large packaging materials are still classified as non-optimally recyclable.

There are developments that may be used in the future to sort and recycle small (components of) packaging materials.

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7. Does the largest component of the packaging have a colour other than black?

Current situation

Plastics that are coloured entirely black are currently not sorted in most waste sorting facilities. This type of plastic cannot be detected with a NIR (near-infrared) camera, which is used during the sorting process to determine the type of plastic that makes up the packaging.

This applies to the largest component of the packaging. A black cap or lid used in a packaging does not affect the detection process, because the NIR system only looks at the largest component of a packaging.

Background

Current sorting techniques make use of near-infrared light. By measuring the spectrum of the reflected infrared light, the type of plastic that makes up a packaging can be identified. Plastics are coloured by adding a so-called masterbatch to the polymer. The masterbatch ensures the polymer is coloured throughout. The colouring agent that is generally used to create a black colour (carbon black) absorbs infrared light, instead of reflecting it. As a result, the detection system cannot see the packaging or detect the type of plastic it consists of. The packaging is therefore not sorted.

Future perspective

Research is being conducted to determine which black colouring agents can be used to allow near-infrared light to detect black plastic, identify the type of plastic and then sort it (PETcore 2018). Furthermore, there are developments in the field of sorting black plastic using different techniques, such as laser detection. One waste sorting organisation in the Netherlands already utilises this technique. With it, black packaging materials are detected, but not yet sorted by type of material, since the type of plastic cannot be identified with this technique.

At the moment, black plastic is not sorted by type of material and therefore falls into the category of non-optimally recyclable packaging materials. When the sorting of black plastic packaging materials by type of material has become common practice, this Recycle Check will be updated accordingly.

Black packaging materials and recycled content

The advantage of black packaging materials is that recycled content can easily be used for its production, because the original colour of the recycled material is less relevant. However, there is only a small chance that the packaging will be properly sorted and recycled during the next cycle. The chance that transparent packaging materials and those with a colour other than black are properly sorted is larger. Consequently, so is the chance that the packaging in question is recycled.

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8. Does the packaging have a label or sleeve and is it sortable and recyclable according to the table in the clarification?

Current situation

Packaging materials made from PE or PP that contain a label made from the same material as the largest component of the packaging can easily be sorted and recycled. A paper label impedes the recycling of PE and PP packaging materials.

For packaging materials made from PET, the situation is different. A PET label cannot be processed properly. On the other hand, PE, PP and paper labels can be processed – provided that they are not too large.

If the largest component of the packaging and its label are made from different materials, the dimensions of the label are relevant to the sorting process. The following principles apply (European PET Bottle Platform 2018):

The label or sleeve for packaging materials with a volume:

- Larger than or equal to 500 millilitres cannot cover more than 70% of the frontal surface.
- Smaller than 500 millilitres cannot cover more than 50% of the frontal surface.

This leaves sufficient space to identify the main material that makes up the largest component of the packaging. The table on the next page can be used to determine whether the label or sleeve in combination with the packaging itself is easily recyclable. A packaging with a label or sleeve is easily recyclable if the conclusion states “Yes”. Information on how to measure the dimensions of the label is provided below the table.

Determining the dimensions of the label or sleeve

For packaging materials with a volume of 500 millilitres or more, the label or sleeve cannot be larger than 70% of the surface area of the packaging.

For packaging materials with a volume of less than 500 millilitres, no more than 50% of the surface area may be covered by a label or sleeve.

This leaves sufficient space to use near-infrared light to identify the type of plastic that makes up the packaging’s largest component.

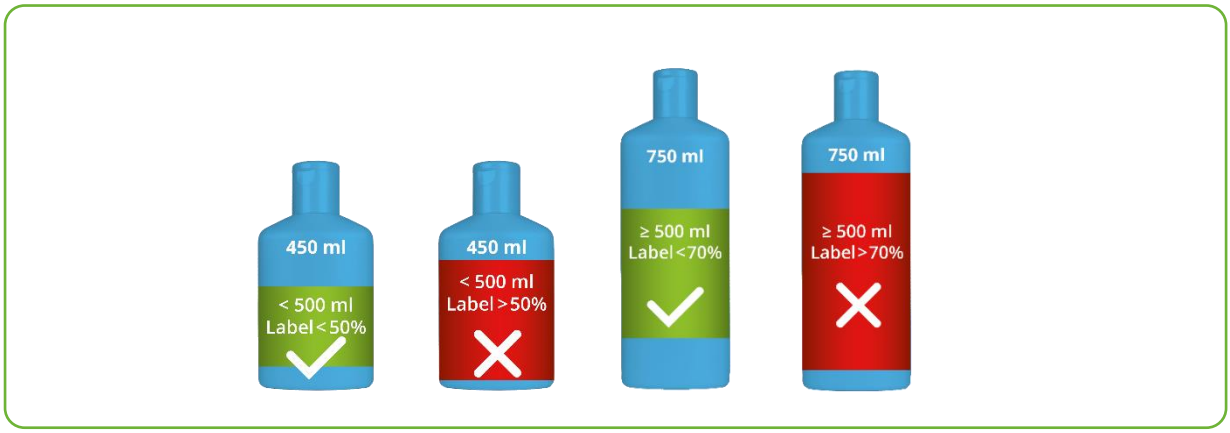

IMAGE 6: EXAMPLES OF LABEL DIMENSIONS FOR PACKAGING MATERIALS WITH VOLUMES <500ML AND ≥500ML

To determine the percentage of the surface area that is covered by a label or sleeve, the side of the packaging that is covered the most by the label or sleeve is used. This will generally be the frontal surface or the so-called facing: the side of the packaging that is visible on store shelves.

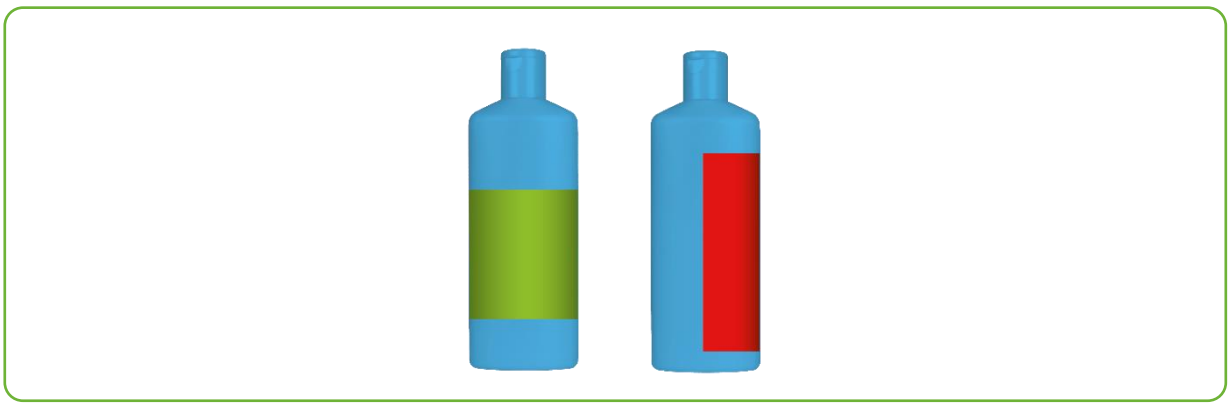

IMAGE 7: EXAMPLES OF FACING OR FRONTAL SURFACES USED TO EVALUATE THE DIMENSIONS OF THE LABEL OR SLEEVE.

Material of the largest component	Material of the label or sleeve	Sortable?	Recyclable?	Conclusion:
PE	**PE**	Yes	Yes	**Yes**
	Paper	Dimensions not relevant, as paper labels and sleeves impede the recycling of PE	No	No
	PP or PET with surface area of label or sleeve >50% for <500ml >70% for ≥500ml	No	No	No
	PP or PET with surface area of label or sleeve <50% for <500ml <70% for ≥500ml	Yes	Yes	**Yes**

TABLE 1: TABLE TO EVALUATE THE RECYCLABILITY OF LABELS AND SLEEVES USED ON PE PACKAGING MATERIALS

The next page contains the tables for PP and PET packaging materials.

Material of the largest component	Material of the label or sleeve	Sortable?	Recyclable?	Conclusion:
PP	**PP or IML of PP**	Yes	Yes	**Yes**
	Paper	Dimensions not relevant, as paper labels and sleeves impede the recycling of PP	No	No
	PE or PET with surface area of label or sleeve >50% for <500ml >70% for ≥500ml	No	No	No
	PE or PET with surface area of label or sleeve <50% for <500ml <70% for ≥500ml	Yes	Yes	**Yes**

TABLE 2: TABLE TO EVALUATE THE RECYCLABILITY OF LABELS AND SLEEVES USED ON PP PACKAGING MATERIALS

Material of the largest component	Material of the label or sleeve	Sortable?	Recyclable?	Conclusion:
PET	**PET**	Yes	No	No
	Paper, PE or PP with surface area of label or sleeve >50% for <500ml >70% for ≥500ml	No	No	No
	Paper, PE or PP with surface area of or sleeve <50% for <500ml <70% for ≥500ml	Yes	Yes	**Yes**

TABLE 3: TABLE TO EVALUATE THE RECYCLABILITY OF LABELS AND SLEEVES USED ON PET PACKAGING MATERIALS

Background

Full-body sleeve

A full-body sleeve covers the entire packaging and has been shrunk around the packaging. Other than with labels, no adhesive is used. Since full-body sleeves can be made from a number of different materials, they affect the sorting and recycling process of the packaging.

When the sleeve and the largest component of the packaging are made from different materials, there is a significant chance that the packaging is not properly sorted. The packaging does not end up in the bale of the material that makes up the largest component, but in the bale of the material that makes up the sleeve. That means that the main packaging ends up with a recycler who does not recycle that

particular stream. The recycler of the sleeves must remove the main packaging from the stream and possibly sell it to a different recycler.

In Mould Labels (IML)

In Mould Labels (IML) are added to the packaging in an injection mould. This is done the most for PP packaging materials; the label is then also made of PP. This process results in a printed packaging made entirely from PP.

Paper labels

Paper labels can impede the recycling of plastic packaging materials, because fibres from the labels can remain behind on the plastic.

Recyclers of PE and PP use a cold washing process that does not entirely remove paper labels. If it is necessary to use a paper label, it is advisable to make it as small as possible. A packaging with a main component made from PE or PP and a paper label is not optimally recyclable.

A number of recyclers, mainly PET recyclers, use a warm washing process that does remove paper labels. The labels are removed from the packaging materials, but not recycled themselves.

Metallised labels

Like metallised deformable packaging materials, these contain vacuum-deposited aluminium. These labels impede the recycling process.

Future perspective

At the moment, various parties are determining how full-body PET sleeves can fit into the sorting and recycling process. Furthermore, experiments are being conducted to determine whether full-body sleeves can be separated from the rest of the packaging using perforations (PETcore 2018).

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9. Is the packaging free of hotmelt and non-washable adhesives?

Current situation

Non-washable adhesives and hotmelt adhesives are not removed during the cleaning process for plastic packaging materials that have been shredded into flakes. These adhesives therefore impede the recycling process.

Background

In order to recycle sorted packaging materials, these packaging materials are shredded into flakes. These flakes are then washed to remove labels and adhesives, among other things. Both cold and warm washing processes are used.

Adhesives do not impede the recycling process if they are water- or alkali-soluble (during a warm washing process at temperatures of 60-80° C). The same goes for hotmelts that are alkali-soluble at temperatures of up to 80° C and can easily be removed during a conventional (pre)washing process.

The use of other hotmelts, such as reactive polyurethane hotmelts, should be avoided (European PET Bottle Platform 2018); when these hotmelts are used on a packaging, it is classified as non-optimally recyclable.

Adhesives that cannot be washed off during the recycler's washing process may impede the rest of the recycling process. One example is pressure-sensitive adhesive, which forms a bond when pressure is applied to activate the adhesive. No solvent, water or heat is needed.

Future perspective

At the moment, no developments are expected concerning non-washable adhesives or hotmelts.

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10. Is the packaging free of enclosed metal components?

Current situation

Metal components, for example springs or balls, in plastic packaging materials (for example soap dispensers or trigger spray packaging materials) impede the recycling process if they are not removed from the plastic waste stream during sorting.

Background

Metals may not be removed from the plastic waste stream because they are non-magnetic or cannot be separated properly. This goes for metal components that are enclosed in or attached to a packaging and which are so small in relation to the packaging that they cannot be removed from the plastic waste stream with a magnet or eddy current. As a result, these metal components end up in a mono-stream of PET, PE or PP. Next, they impede the recycler's shredding and processing of the packaging. Packaging materials with enclosed metal components are therefore non-optimally recyclable.

One example of a packaging that does not cause problems for recyclers is the handle of for example a bucket, because it is removed during the shredding of the bales and ends up in the metal waste stream.

Another example is aluminium lids, which are shredded during recycling and then eliminated from the plastic waste stream during the washing process or with an eddy current.

Future perspective

On the short term, no developments are expected that can be used on a large scale to help process metal components more effectively.

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11. Is the packaging free of opaque PET?

Current situation

PET packaging materials such as bottles or trays can be coloured with opaque or made opaque by adding certain colouring agents to ensure that no light passes through. There are also methods to colour PET bottles in such a way that they are still transparent and translucent.

Background

Modern sorting facilities are capable of identifying different colours. Nevertheless, non-transparent, opaque and transparent PET cannot be separated entirely. Opaque PET in a stream of transparent PET waste results in a loss of clarity and transparency. This reduces the quality of recycled PET and its usability for transparent applications. Recyclers must therefore systematically remove opaque PET from their stream of raw materials. This negatively affects their yield and results in a growing percentage of PET bottles that are not recycled. Furthermore, a specific application with which to process such a large volume of opaque PET waste currently does not exist (KIDV 2017).

Packaging materials made from opaque PET are therefore currently classified as non-optimally recyclable.

Future perspective

Research is currently being conducted in France to develop ways to effectively process the stream of opaque plastic waste. Chemical recycling is a technology in development that may offer a solution, because it can be used to eliminate colouring agents from the PET recyclate.

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12. Is the packaging not a PET tray?

Current situation

PET trays can be recycled, albeit to a lesser extent than PET bottles. At the time of this document's publication, an installation for the recycling of large volumes of PET trays is being set up in the Netherlands. The production is currently being scaled up and optimised. At the moment, PET trays are classified as non-optimally recyclable packaging materials.

Background

PET trays form a significant waste stream. A separate recycling facility is therefore being constructed to process this stream. For the optimal performance of the recycling process, it is important that these trays also meet every requirement of the Recycle Check and that they do not for example consist of multi-layer materials.

Future perspective

At the moment, there is a single facility for the recycling of PET trays. At the time of publication of this Recycle Check, this facility is being set up. Its production is currently being scaled up and optimised. The facility is expected to be fully operational by February of 2019. Once it is operational, it will have a capacity of 35,000 tons, which is enough to process the volume of PET trays disposed of in the Netherlands. Once the facility is sufficiently operational, this Recycle Check will be updated accordingly.

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Definitions

EPS	Expanded polystyrene.
EVOH	Ethylene vinyl alcohol.
PE	Polyethylene. Variants: -HDPE: high-density PE. -LDPE: low-density PE.
PET	Polyethylene terephthalate, a plastic from the polyester group. Variants: - CPET: crystalline PET, largely crystallised molecular structure, extremely resistant to high temperatures (up to 251° C). For example used for trays for microwave dinners. - APET: Amorphous PET, lacks a structured or oriented molecular structure. Used for thermoformed packaging materials. Low temperature resistance; shrinkage occurs at 60° C. - OPET: oriented PET, used mostly for films, often with an aluminium coating.
PLA	Polylactic acid.
PP	Polypropylene. Variants: - PP: mostly used for rigid applications, for example for bottles or caps. - OPP: oriented PP, used mostly for films. - BOPP: biaxially-oriented PP, mostly used for films.
PS	Polystyrene.
PVC	Polyvinyl chloride.
PVdC	Polyvinylidene chloride.

More definitions can be found at www.kidv.nl.

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