Guide on evidence of use of recyclate

Five methods to demonstrate the use of recyclate in packaging

Netherlands Institute
for Sustainable Packaging
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Introduction

In this guideline, the KIDV lists five methods that producers and importers of packaged products can use to demonstrate that packaging contains a percentage of recycled content. The methods have been mapped out by KIDV and FieldLab Circular Packaging, commissioned by the Packaging Waste Fund (Afvalfonds Verpakkingen).

Why is evidence for the use of recyclate in packaging important?

There are two reasons:

1. The statutory targets for the use of recycled content are getting stricter. In the European Commission's proposal for the new packaging regulation (PPWR), the minimum content of *post-consumer recyclate* (PCR)[1] in plastic packaging will increase step by step over the coming years.
    a. From 2025, according to the Single Use Plastics Directive, PET bottles must consist of at least 25 per cent recycled plastics. By 2030, this must be at least 30 per cent.

    b. In the National Circular Economy Programme (Nationaal Programma Circulaire economie, or NPCE), the government has presented measures to use raw materials more economically in the coming years. The government is tightening this policy. In anticipation of EU legislation, a national obligation for plastics producers to encourage the use of recycled plastic or bio-based plastic will be introduced from 2027 (National Circular Plastics Standard - Nationale Circulaire Plastics Norm). The intention is to increase the obligation to 25%-30% plastic recyclate or bio-based plastic by 2030. This obligation applies to all plastics produced in the Netherlands and for the Dutch market.[2]
2. Packaging with recycled content is eligible for fee modulation with the Packaging Waste Fund. A lower fee applies for this under certain conditions. More information about fee modulation can be found on the website of the Waste Fund.

[1] See the appendix to this guide for the definition of PCR.
[2] Source: https://open.overheid.nl/documenten/ronl-77b639d132c52e5e1d75a36381fb6e60748ed8bb/pdf

Plastics chain and methods to prove the use of PCR in packaging

The presence of PCR must be physically demonstrable in the packaging (or components). This can be demonstrated using the *chain of custody* method. All parties in a chain record information and declarations about the origin and use of raw materials, for both intermediate and end products.

There are several methods to prove that PCR has been used at any point in the plastics *supply chain*. See the illustration below for an overview of the plastics chain with the use of recyclate. The methods described all have some form of certification. All certification can be performed by an accredited certification body.

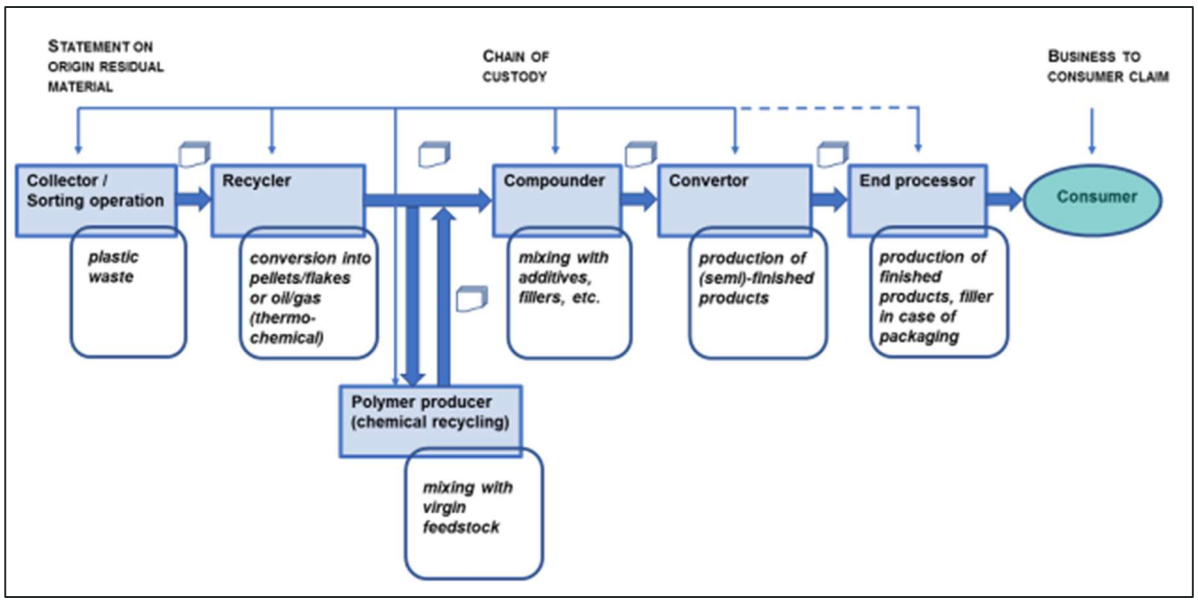

Figure 1 Schematic overview of the three elements relevant for making reliable claims about recycled content. Source: GREEN DEAL Reliable evidence for applications of plastic recyclate, Final report, January 2022

Mechanical recycling v chemical recycling

The methods described in this guide relate to mechanical recycling. The method to prove that chemically recycled material has been used is still under development. The current status is:

- For recyclate used after chemical recycling, the *chain of custody* method can be used: mass balance – *controlled blending*. However, this does not provide 100 per cent certainty of demonstrable physical presence of recyclate in the product. Over a period and across a range of products, the total amount of recycled material can be accounted for. This is then offset against the output. Chemically, there is no distinction between virgin material and recyclate.
- Another form of *mass balance* for chemical recycling is: mass balance – *certificate trading*. This makes use of the claim of the use of recyclate without the company actually using recyclate in a product. So a chemical recycler produces a raw material from recyclate, but sells the rights to claim recyclate.

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Five methods to demonstrate the use of recyclate in packaging

There are five methods to demonstrate the use of recyclate in packaging. They are briefly described below. They are then explained in more detail point by point.

1. Audit production documentation

Audit trail of the production documentation of the manufacturer/importer (M/I), including documentation from suppliers and suppliers of suppliers. The PCR chain must not be broken. Therefore, the chain is followed up to the recycler and the delivery of the sorting product.

2. Audit trail of certification in the chain

Each step in the chain is individually certified. This means that the M/I must be able to provide certificates from the converter (bottle supplier), compounder (plastic pellets) or recycler (recyclate) retroactively in the chain. This method is based on certification according to ISO 15343:2007.

3. Audit trail certification chain based on sector label

Certification of the recycler and compounder under EUCertPlast label and certification of converters under PolyCert Europe label.

4. Specific chain certification

The production chain of one product is certified under the label of a certification body, for instance, Flustix.

5. Alternative method

This is a combination of methods 2, 3 and 4 of parts of the chain, for instance, under the label of RecyClass.

Method 1 - Audit production documentation

For this method, each product and its components must be verified individually. This is the most basic form of accountability for the use of recyclate. The packer or brand owner itself validates the material supply chain by performing an audit trail on business processes and documentation.
The production documentation of each step must be complete and correct.
This requires insight into:

- Product specifications, *bill of materials*, specification of materials used, production documentation, quantity, orders and invoices, payments for materials used.
- Material specifications, *bill of materials*, specification of raw materials used, production records, etc.
- Raw material specifications, *bill of materials*, specification of input materials used, production records, etc.

This method is not very common. It is a complex and difficult to understand process, also because it involves multiple steps in the chain at locations that may be geographically far apart. This method does not or perhaps only partially uses certification based on ISO:15343.

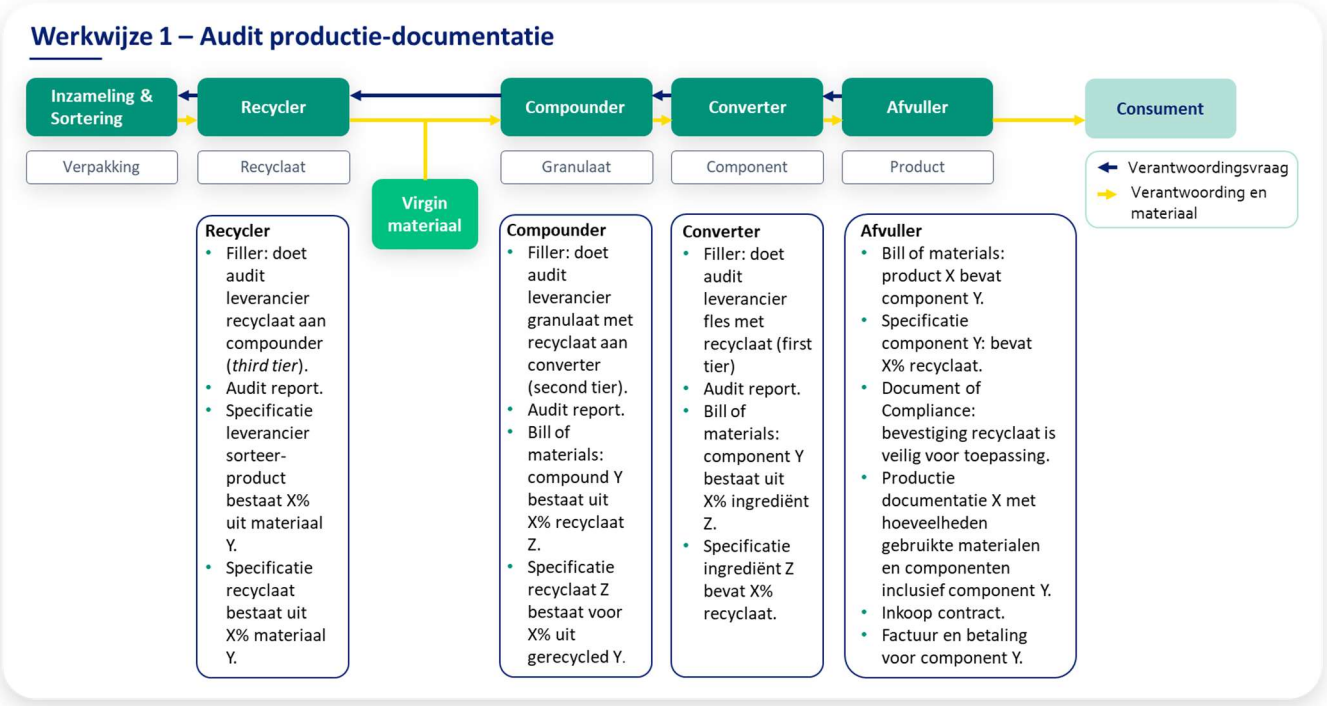

Figure 2 Description of audit production documentation.

Method 2 - Audit trail of certification in the chain

The basis of this method is certification according to ISO 15343:2007 - Recycled plastics - Traceability of plastics recycling and conformity assessment and recycled content. Or: Recyclass certification: ISO 15343:2007 plus (including quality assurance, specification for application, etc.).

Each step in the chain must be certified according to this standard and be connected to each other:

M/I purchases with a certificate and proves through the certificates of suppliers and suppliers of suppliers that the chain has been followed. So from:

- Converter: manufacturer of packaging with recyclate purchases compound according to certificate.
- Compounder: compound manufacturer purchases recyclate according to certificate.
- Recycler: manufacturer of recyclate purchases sorting product according to specification.

This is a relatively simple method, because the collection of evidence of use is embedded in the business processes by applying ISO 15343. The supplier must have insight into the supply chain of its packaging with recyclate.

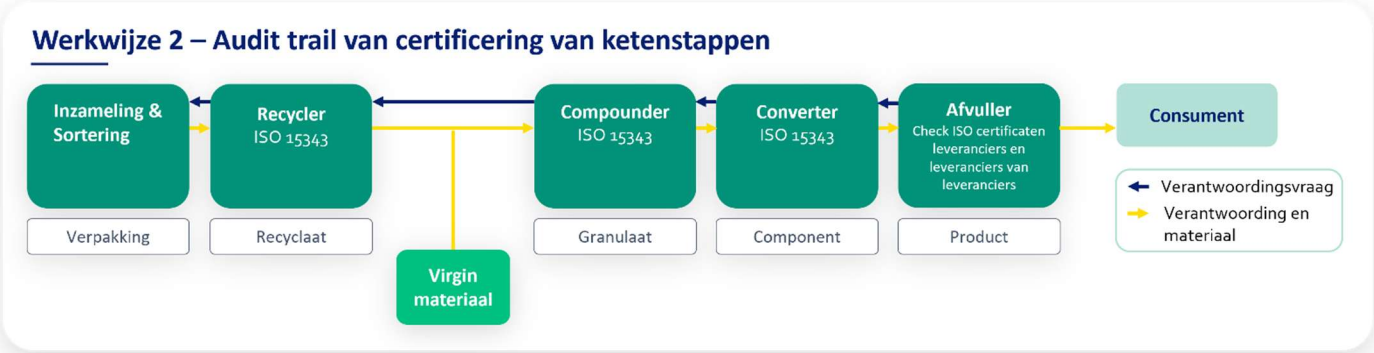

Figure 3 Description of audit trail of chain step certification.

Method 3 - Audit trail certification chain based on sector label

The basis of this method is certification per chain step under the label of a sector organisation. This method is similar to method 2:

- EuCertPlast certifies in particular the recycling process: waste, recycling, compounding according to ISO 15343:2007.
- PolyCertEurope certifies in particular the converting process: compound to, for instance, packaging according to ISO 15343:2007.
- The packaging filler substantiates the claim about the use of recyclate in packaging, based on the PolyCert Europe certificates of his converter, who in turn does this based on the EuCertplast certificates of the compounder/recycler.
- The individual or linked steps can also be certified under the RecyClass label.

As with method 2, in this method the producer or importer must also have insight into the certification of the production chain of the product, in which the use of recyclate is claimed.

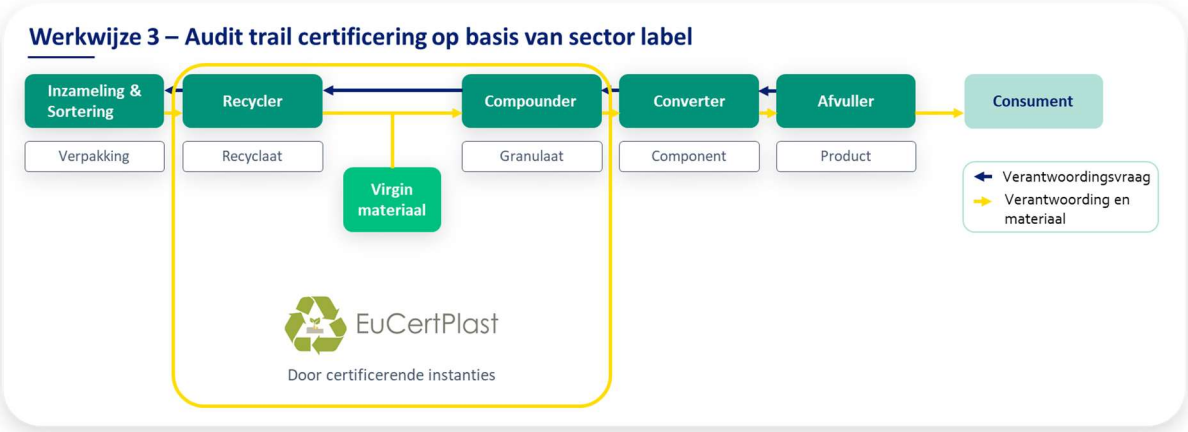

Figure 5 Description of audit trail of EuCertPlast certification.

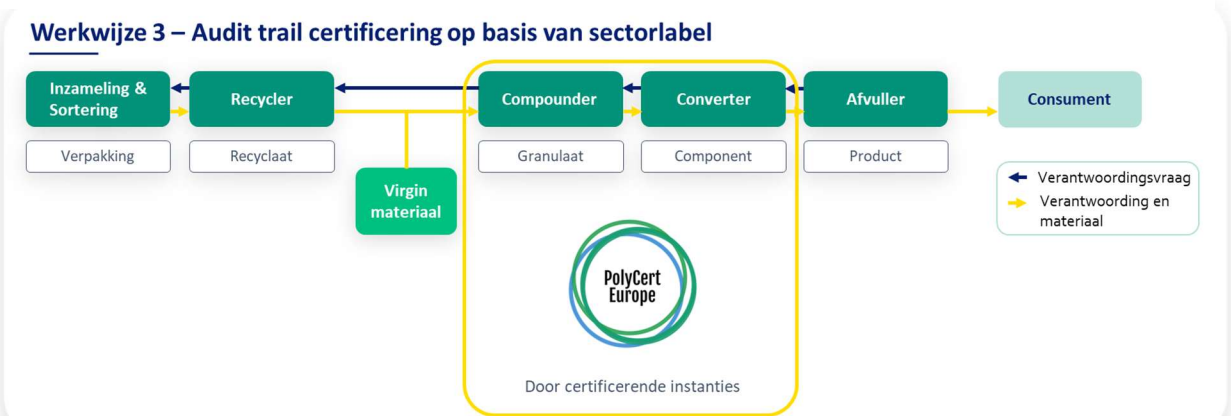

Figure 4 Description of audit trail of PolyCert Europe certification.

Method 4 - Specific chain certification

The basis for this method is the same as for methods 2 and 3. In method 4, a production-specific chain from recyclate to packaging is certified.

Certification per chain:

- The entire chain of one product has its own certifier based on ISO 15343:2007, in the example DINCertCo for label FLUSTIX (see below).
- One product from one filler is certified in this way. Other products with other chains are certified separately.

This is a simple and clear method for the packer, because the entire process is outsourced. A disadvantage is that separate certification must be carried out for each chain, for instance, if a compound is processed into packaging not by converter 1 but by converter 2.

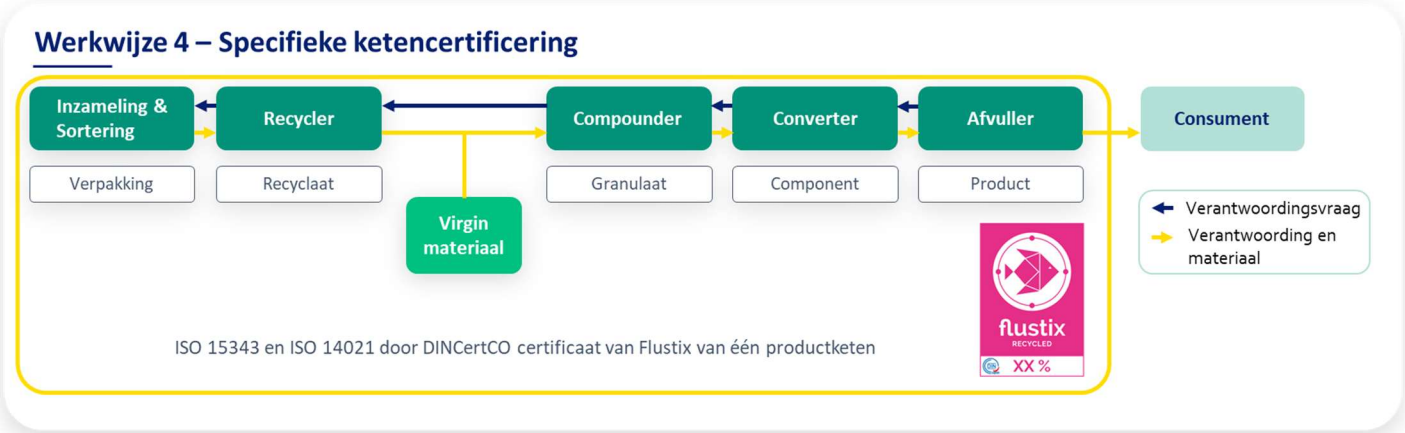

Figure 6 Description of specific chain certification – using flustix as an example.

Method 5 - Alternative method

The basis for this method is ISO:15343:2007, supplemented with aspects of other ISO standards, such as making claims, quality assurance and environmental impact. For instance, certification of a combination of steps in the chain based on the RecyClass label:

- Under the RecyClass label, each step in the chain can be certified separately. A combination of steps can also be certified with one certificate under this label.
- For instance in a chain:
- RecyClass certificate for a recycler
- RecyClass certificate for a compounder/converter

This method is more comprehensive than the 'bare' ISO:15343:2007 and is particularly applicable for chain parties that do not yet have ISO:9000 or ISO:14000 certificates, for instance.

Figure 7 Description of alternative method, combination of chain steps, using Recyclass as an example.

Conclusion

Other standards that are important or used in the certification of Post Consumer Recyclate.

The basis of certification is:

- ISO 15343:2007 Plastics - Recycled plastics - Traceability of plastics recycling and conformity assessment and recycled content.
- RecyClass certification: ISO 15343:2007 plus (quality assurance, specification for application, etc.).

Additional standardisation:

- Environmental label claims: ISO 14021:2016. What can you put on your packaging?
- Chain of custody: ISO 22095:2020. How can chain management be implemented?
- Plastics vocabulary: ISO 472:2013. Plastics terminology.

Background Information:

- EuCertPlast has accredited several certification bodies to certify the recycling compounding step according to ISO 15343.
- This also applies to PolyCert Europe and RecyClass.
- Flustix works exclusively with DINCertCo.
- The websites of EUcErtPlast, PolyCert Europe and RecyClass provide an overview of institutions accredited under the label.

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Accountability

With this guide, the Packaging Waste Fund, KIDV and FieldLab Circular Packaging (FLCP) provide insight into how a producer/importer of packaged products can provide insight into the substantiation of the claim that recyclate is used in packaging that they place on the market in the Netherlands.

The FLCP conducted a desk study and spoke to various relevant parties, such as producers, recyclers and converters, and with organisations such as RecyClass, NRK and Polymer Science Park. In addition, various internet sources were consulted, including www.greendeals.nl and www.isealalliance.org.

For more information on the subject of 'evidence of use recyclate', please contact the KIDV. Ask your question via: Vraag.kidv.nl.

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Appendix

Definition Post-Consumer Recyclate

Material generated by households or commercial, industrial and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose. This also concerns material from the distribution chain. This material is then processed into a new raw material, from which new products can be made.

This definition is structured as follows:

Post-Consumer

ISO 14021: Environmental labels and declarations - Self-declared environmental claims:

Material generated by households or commercial, industrial and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose. This also concerns material from the distribution chain.

Recyclate

Post-consumer material that has been processed into a raw material from which new products can be made.