



User Guide 2026

# Sustainable Packaging Compass





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# 1. Introduction

The Sustainable Packaging Compass helps you evaluate your packaging and determine its sustainability based on three pillars (see below). Furthermore, the Compass allows you to compare your current product- packaging combination with an alternative packaging scenario. To do so, you have to enter the details of your current product-packaging in this tool, taking only 20 minutes to complete and get your results. RDC Environment has built the Compass on behalf of Verpact.

## ► Three pillars of the Sustainable Packaging Compass



1. Recycling



2. Circularity



3. Environmental impact



Fee modulation  
(Benefit for Plastics)

Each pillar measures a different aspect of sustainability. Additionally, the Compass of flexibles and rigid plastics contains the benefit to calculate fee modulation.

When your company wants to become more sustainable, there are more aspects to be taken into consideration, aside from the packaging itself. If you wish to learn more about this, please visit our website [Five Perspectives on](#)

## ► Scope

The Compass concerns packaging materials that come from Dutch household waste or similar streams, such as waste from the hospitality sector, offices, retail stores and service companies. Industrial waste that is not comparable to household waste is usually collected by waste management companies subject to separate agreements. In most cases, additional quality requirements apply to this stream. You can read more about packaging waste from businesses [here](#).

Furthermore, this tool is designed for assessing consumer product packaging only. It cannot be used to evaluate anything other than packaging. Before you start, make sure your product(s) meet the requirements of packaging. When in doubt, please visit the [website](#) from Verpact.

## ► Your packaging details

To fill in the tool, you need the technical information of your packaging. If you don't have these details at hand, we recommend you to use a measuring tape, scissors and a scale.

## ► Data safety

Verpact makes sure your data is safe. All data entered and saved in the Compass is secured on a private server hosted by RDC Environment. Only you and those you authorise can access your account. Click [here](#) for the privacy statement. When you create an account on the Sustainable Packaging Compass, you automatically agree to this statement.



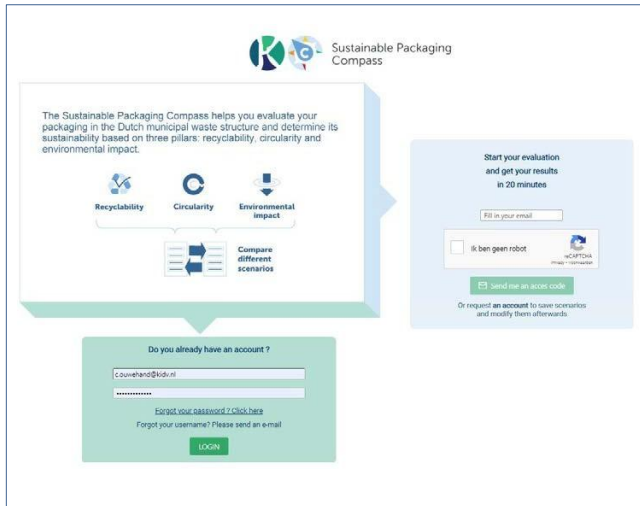
### ► Frequent updates

The tool's calculations are based on current sorting and recycling techniques in the Netherlands. Verpact and RDC Environment will regularly update the underlying data. Changes in sorting and recycling techniques may affect the outcome of your projects/scenarios. Verpact will inform you on any consequences and updates.

### ► Disclaimer

Verpact has taken the utmost care in designing the Sustainable Packaging Compass. If you feel the information in the Compass is incomplete or incorrect, please let us know. Verpact assumes no liability for any damage caused by or related to the use of the Compass in any way. Furthermore, Verpact assumes no responsibility for claims made as a result of the Compass. Producers and importers who introduce packaging to the Dutch market are responsible for ensuring that their packaging complies with both European and Dutch legislation.

# 2. Getting started

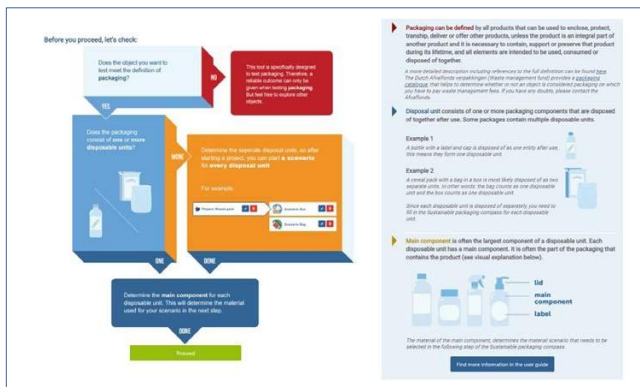


## 1 Direct access and creating an account

Direct access is available for evaluation or one-time use. The user must provide an email address and receives an access code with direct access to the Compass.

For multiple use, you can request an account. An account allows you to save and edit projects and scenarios. You always have access to the latest scenarios.

You can apply for an account by entering your details in a form. Shortly after, you will receive an e-mail with your account details. Please note that this may take a few days.



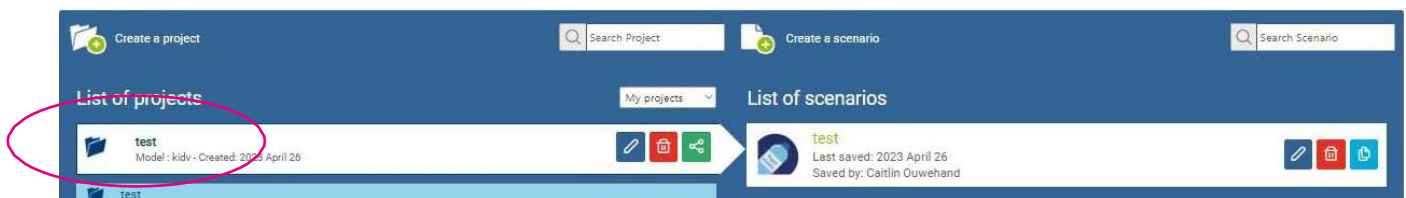
## 2 Before you proceed

To get started with the Compass, you must use the diagram to determine whether your packaging meets the conditions.

You need to determine whether the packaging consists of one or more disposable units. The material of the main component of the disposable unit determines which scenarios should be evaluated.

## 3 Project and scenario overview

This page helps you to create, save and organise projects. This can only be accessed when you have an account.



### List of projects and scenarios

A project should be created for each packaging that needs evaluation - one can compile several scenarios in each project. A scenario must be created for each disposable unit.

## Creating a scenario

When you create a scenario, you are asked to give it a name. The next step is to choose a packaging type that best represents the main component of each disposable unit. This is the material which is targeted by the sorters and recyclers to recover.

Think carefully about which packaging type you choose; if you choose the wrong material and find out halfway through, you will not be able to change it and have to start from the beginning.

It is possible to copy and edit projects and scenarios. This is useful if you want to evaluate new packaging that resembles an existing packaging or disposable unit.



## Available Packaging Types

Until 2022, scenarios could only be created for flexible plastic packaging types and rigid plastic packaging types. Since 2023, other materials have been added. All available materials are shown in the image above.

## Versioning of scenarios and updates

The Sustainable Packaging Compass is regularly updated. Each update follows the [Recycle Check](#) a tool to decide the recyclability of packaging. When updated, a new scenario is created in the Compass. Analyses made in a previous version of a scenario are not automatically updated to the new situation. Analyses that have been saved, however, will continue to exist. To update an older scenario, the data must be re-entered into the current scenario.



E.g. In the current Compass, multiple scenarios for rigid plastic packaging are available (2022 - 2026). When entering a new disposal unit, it makes sense to use the latest scenario (2026). Please bear in mind that you can still use and edit the previous scenario (in this case: 2025). This can be useful for the declaration of the [modulated fee](#) by Verpact.

If you have an account, you will automatically be notified by e-mail about updates. You can also subscribe to our newsletters, by clicking [here](#) and [here](#).

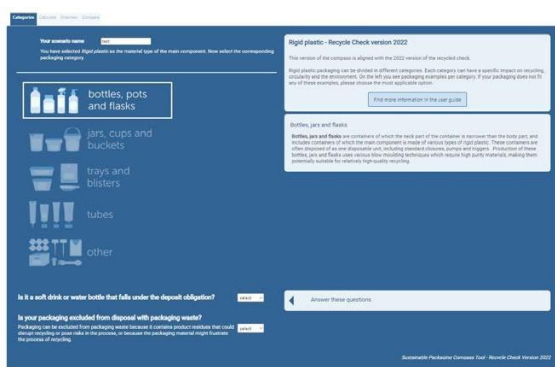
## Auto saving scenarios

The system saves automatically upon entry. Therefore, there is no save button. You can close the scenario at any time and when you re-open it, your pre-entered data will automatically appear. This applies only to users with an account. The one-off users can only access their scenario once. If they wish to save their data, they can download the results (see page 10).

# 3. Explanation of the different sections in the Compass

## ► Section 1: Categorise

The Categorise section uses selection criteria to determine the extent to which a disposable unit can be treated in the current recycling system for domestic packaging waste.



### Categorising packaging types

Each material is categorised in different pack types, which differ for each selected material. The categories are based on production techniques, sorting techniques and products as stated upon selection in the tool.

You are asked to select a category because this gives valuable information about sorting and recycling processes that can be used in the tool.

### Exceptions of disposable units

If you can answer “yes” to one of the questions in the bottom left section, the disposable unit is excluded from the household waste stream for which the Compass is intended. This means that it cannot be further assessed, as it is not considered to be reprocessed with this stream. However, it is still possible to determine the environmental impact of the unit after all data has been entered in the Calculate section.

The exclusions vary by material type. An explanation is given on the right side of the page.

If you are not sure in which bin your packaging has to be disposed of after use, you can consult the [‘Afvalscheidingswijzer’](#) (only available in Dutch).

Check out the following websites to learn more about small chemical waste or waste disposal stations in the Netherlands:

- LAP3 – [National waste management plan](#)
- Milieu Centraal – [Small chemical waste](#) (only available in Dutch)

## ► Section 2: Calculate

In the Calculate section, the properties and details of the disposable unit are entered in the left frame and are material specific. The right frame shows how this affects the Recyclability, Circularity and the Environmental Impact of the disposable unit. The results can be downloaded in a pdf-file.

### Entering the technical data

#### End-of-life

In the end-of-life sub-section, you can indicate which scenario applies in the discarding phase of the disposable unit. This scenario largely determines the method of collection after use. Collection in turn has a lot of impact on the sorting step and final recycling of the materials.

#### Indicate the ratio of household waste and public waste

In the tool, you can estimate how many of your disposable units end up in household waste versus public waste. Out-of-home items (e.g., in transport or parks) usually go into public bins and are sent directly for incineration with energy recovery. Only metal units are recovered after incineration and recycled.

#### Indicate if one of the following end-of-life scenarios applies

- Deposit system

Answer yes if the disposable unit is subject to a deposit obligation or a private deposit system or pooling system. Under a deposit obligation, a surcharge is levied by Statiegeld Nederland on packaging upon purchase and a refund is given upon return. The deposit-refund system is a measure to combat illegal dumping and littering by providing a financial incentive. It is also used as a controlled collection system of packaging materials for reuse or recycling. If this is the case, the Compass calculates national collection rates.

In case of a private deposit system or pooling system, it is assumed that more packaging is collected correctly and that recycling quality is high because it is a mono-flow. You should note that the [Fee Modulation](#) rates have been adjusted. You need to check this yourself to see if special rates apply.

The calculations assume that, after a predefined number of uses, the disposable units are processed with the usual household collection infrastructure, or similar, and preferably recycled.

- Reusable packaging

A reuse system is designed for reusable packaging that is manufactured of durable materials and is specifically designed for multiple trips and extended life. It requires a return system for used packaging or a system where the user can refill this packaging.

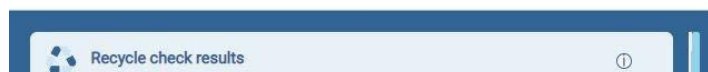
The calculations assume that, after a predefined number of uses, the disposable units are processed with the usual household collection infrastructure and preferably recycled.

- Number of reuse cycles

If the option 'reusable packaging' is ticked, the number of times the disposable unit can be reused before being discarded can be indicated here. This number has a lot of impact on the environmental impact calculations. It is therefore important to make a realistic estimation. Do you want to know more about reusable packaging? Please visit [Planet Reuse](#).

### The 'Calculate' button

When you have entered your data in the input fields, trigger the 'calculate' button to show the results.



Please make sure that you fill in all data before you draw any conclusions. If you have any doubts about the data feed, [please contact Verpact](#).

### Generated results

The frame on the right is divided into different sections describing the results of the sustainability score of the disposable unit, based on the data you entered on the left:

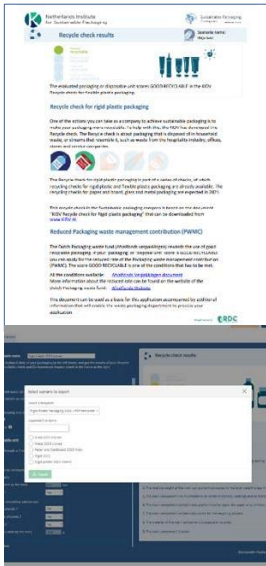
- The Recycle Check result
- The Circularity result
- The Environmental Impact result

In the following chapter of this user guide, we will go into more detail about each pillar and about how the results are calculated.

### General tips

The calculate section ends with general tips, based on the data you provided. Verpact creates these tips as a first overview of practical pointers for a company to improve its sustainability. Bear in mind that the given tips are not all-encompassing. See Chapter 5 for additional information.





### Download results

Your results can be downloaded as a PDF-file once all data has been entered. This document also explains the procedure for submitting an application for modulated fees by Verpact. You can use the PDF-file as a supporting document for this application.

When you click the 'download results' button, a pop-up appears. You first have to select the correct template for the document. This is the template corresponding to the scenarios packaging type and year.

Next, you can give a name to the document. The last step is to select the scenario to be downloaded. It is also possible to download another of your scenarios than the one you are working on during this step. This can be useful if you want to compare them.

### Section 3: Overview

All results from the 'Calculate' section are shown together on the 'Overview' page. You can easily share this page with your colleagues. Make sure to always use the full page with the name and material of the scenario.



### Potential saving indicator

The Fee Modulation indication shows the reduction on the standard fee per kg of the specific rigid or flexible plastic material. If your score is graded 'good recyclability', you can apply for fee.

The potential saving indicator derives his information from the number of packs sold annually as filled in the Calculate section. The compass multiplies the number of disposable units by the weight of the main component calculated in the tool. This total weight is multiplied by the rate difference between the reduced and standard rate applicable in the scenario year.

Additional information can be found on the [website of Verpact](#).

## ► Section 4: Compare

In the 'Compare' section, it is possible to change one or more attributes in a scenario and compare their effect with the reference set in the 'Calculate' section. The current scenario shown, which you have already created, cannot be changed in this mode. Next to the current scenario, there is an alternative scenario of which you can change the attributes. The results show the results from the current scenario next to the results from the alternative scenario you create in this tab, making it very easy to compare the effects the changes have on the recycle check, circularity check and environmental impact.

### Differences in scenarios of the same material type

If you wish to compare different disposable units of the same material, please note differences in scenarios such as quantity and portion sizes. These can influence the Compass results and should, therefore, be considered in direct comparison.

### Comparing scenarios of different material types

**It is not possible** to select different material types in the compare mode. Comparing the packaging of other materials or categories should be done side by side, by making separate scenarios and comparing the overview pages.

However, you can compare scenarios of different material types by opening multiple screens simultaneously. Be aware that comparing different material types can often lead to incorrect conclusions, because the underlying data on the material chain comes from diverse sources and is not reconciled. If the results are put side by side anyway, no conclusions can be drawn with regard to recyclability or environmental impact on the basis of small differences. Only in the case of large differences it provides a starting point for further investigation. If you need more information on this, please contact Verpact.



# 4. About the results

## 1 The Recycle Check result

The Recycle Check result is shown in a traffic light alongside a display of the disposable unit in question.



In some cases, the system will indicate where the obstruction to optimal recycling occurs. For instance, if your packaging is rated limited recyclable, and you have filled in you have a metallised sleeve, the system will indicate this by highlighting the label (image 2).



**The Recycle check result** corresponds to the Recycle Check. The information buttons in the Compass give additional explanation on the recycling impact and links directly to information in the background document of the Recycle Check of the chosen material.

## 2 Fee modulation indication

Fee modulation indication	
Mono-material PP, PE, PET	€ 0,10
Transparent, white or natural color	€ 0,10
Basic requirements for labelling	€ 0,10
Minimal amount of post-cons. recycled plastic	€ 0,00
Packaging score is "Good recyclable"	€ 0,10
<hr/>	
<b>Fee modulation indication</b>	<b>€ 0,40</b>

Under the current scheme, only rigid and flexible plastic disposable units are eligible for Fee Modulation.

Based on the data entered, the tool automatically determines the extent to which a plastic disposable unit meets the conditions and the relevant discounts then appear in the overview.

The information button provides the link to more information about the scheme and all the conditions that a plastic disposable unit must meet to be eligible for Fee Modulation.

### 3 The Circularity Check results

The results show a circularity loop, an indicator of material loss, an indicator of economic loss and an indicator for recyclable material. The information buttons link to additional information.



The results shown in the Circularity Check give an indication of the efficiency and effectiveness of recycling:

- Efficiency is indicated by the amount of target material lost in the process of collection, sorting and recycling.
- Effectiveness is indicated by the potential uses of the recycled material, the possible recyclability of packaging made from the recycled material and the value of the recycled material relative to the value of virgin material.

#### Circularity loop

The circularity loop is the representation of the target material process during the recycling process. It indicates to which extent recycled materials can be used in direct contact with food or if a functional barrier is needed. It also shows whether the packaging is reusable, whether there are possible loss streams in the chain due to out-of-home disposal, and how often the material is potentially recyclable.

Circularity loop



The material flow for the various packaging types have been determined based on the Recycle Check and interviews with sorters and recyclers. The potential number of cycles is determined in consultation with experts in the field. It represents the number of times that materials can technically be recycled in case 50% recycled content is used in new products.

#### Public waste

The percentage of public waste declared as out-of-home disposal is considered lost in the environmental impact calculations and is accounted for as incineration (with metals as exception). This loss stream is shown as a red arrow and a waste symbol in the Circularity loop.

Public waste

#### Re-use loop

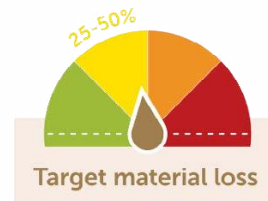
As soon as reuse is selected, you can indicate how many cycles this is possible. The number of cycles is included in the calculation of the environmental impact. In the circularity loop, reuse is displayed as an additional material loop.



Re-use loop

#### Target material loss

The amount of material loss per packaging type shows how much of a certain packaging type is collected, sorted and recycled. This results in a percentage of material loss in relation to the complete packaging weight.



The amount of material loss is determined based on a positive, yet realistic, approach in which all aspects of the chain are performed as good as possible: the consumer discards the packaging correctly and the sorting and recycling process achieve optimal efficiencies.

### Target economic loss

The economic loss is determined using recycled material streams as a percentage of the market value of virgin material streams of the same basic raw material.



### Targeted material indicator

The relative weight of the main component is calculated compared to the total weight of the disposable unit. This gives an impression of the amount of recyclable material.

69	%	<b>Percentage of targetted material in the packaging covered by the circularity results</b>
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### Sources of Circularity Check calculations

The circularity check results are only for the targeted material of the disposable unit. Other materials used, such as labels or closures, are not represented in the circularity of the disposal unit. The compass indicates how much of the packaging is targeted material and how much is not. The sources for the calculations differ per material type, see below.

<b>Rigid plastic packaging</b>	<p><b>Recyclability:</b> the level of recyclability is based on the Recycle Check.</p> <p><b>Efficiency:</b> The calculations of the efficiency in the recycling infrastructure are based on an extensive research performed by Wageningen Food and Biobased Research. It provides an analysis of the quantities and composition of plastic packaging sold on the Dutch market and the percentage of packaging that is collected after use, sorted to specific fractions and recycled in 2017. Source: <a href="#">Verbeteropties voor de recycling van kunststofverpakkingen</a> (only available in Dutch).</p> <p><b>Effectiveness:</b> The application potential of the recycled material is determined with recycling experts. The Indicator of the recyclability of products made from the recyclate was determined in collaboration between Verpact and specialists at Wageningen Food and Biobased Research. The economic loss is determined using recycled material streams as a percentage of the market value of virgin material streams of the same basic raw material. <a href="#">These – Western European – values in the tool are determined based on the “Plastics Information Europe database”. They are updated annually and are a weighted</a> average over the last 12 months.</p>
<b>Flexible plastic packaging</b>	<p><b>Recyclability:</b> the level of recyclability is based on the Recycle Check.</p> <p><b>Efficiency:</b> The calculations of the efficiency in the recycling infrastructure are based on extensive conversations between Verpact, sorters and recyclers. Additionally, information from Recyclclass and Ceflex DFR rules is used.</p> <p><b>Effectiveness:</b> The application potential of the recycled material is determined with recycling experts. The economic loss is determined using recycled material streams as a percentage of the market value of virgin material streams of the same basic raw material. <a href="#">These – Western European – values in the tool are determined based on the “Plastics Information Europe database”. They are updated annually and are a weighted</a> average over the last 12 months.</p>
<b>Beverage cartons</b>	<p><b>Recyclability:</b> the level of recyclability is based on the respective Recycle Check.</p> <p><b>Efficiency:</b> the calculations of the efficiency in the recycling infrastructure are based on extensive dialogue with beverage carton and PolyAl recyclers, 4evergreen, FBCA and brand owners.</p> <p><b>Effectiveness:</b> The application potential of the recycled material is determined with recycling experts. The Indicator of the recyclability of products made from the recyclate is determined in collaboration between Verpact and the experts mentioned above. The economic loss is determined using recycled material streams as a percentage of the market value of virgin material streams of the same basic raw material.</p>

<p><b>Paper and cardboard packaging</b></p>	<p><b>Recyclability:</b> the level of recyclability is based on the Recycle Check.</p> <p><b>Efficiency:</b> The calculations of the efficiency in the recycling infrastructure are based on extensive dialogue with PRN (Papier Recycling Nederland), Papier Circulair and VNP (Koninklijke Vereniging van Nederlandse papier- en kartonfabrieken). Design guidelines from 4EverGreen and CEPI, have also been consulted.</p> <p><b>Effectiveness:</b> The application potential of the recycled material is determined with recycling experts. The Indicator of the recyclability of products made from the recyclate was determined in collaboration between Verpact and specialists from PRN and VNP. The economic loss is determined using recycled material streams as a percentage of the market value of virgin material streams of the same basic raw material.</p>
<p><b>Glass packaging</b></p>	<p><b>Recyclability:</b> the level of recyclability is based on the Recycle Check.</p> <p><b>Efficiency:</b> The calculations of the efficiency in the recycling infrastructure are based on extensive dialogue with Stichting Duurzaam Glas. As well as experts from recyclers and producers of glass packaging and FEVE (the European container glass federation).</p> <p><b>Effectiveness:</b> The application potential of the recycled material is determined with recycling experts. The Indicator of the recyclability of products made from the recyclate was determined in collaboration between Verpact and specialists at glass recyclers and producers of glass packaging. The economic loss is determined using recycled material streams as a percentage of the market value of virgin material streams of the same basic raw material.</p>
<p><b>Metal packaging</b></p>	<p><b>Recyclability:</b> the level of recyclability is based on the Recycle Check.</p> <p><b>Efficiency:</b> The calculations of the efficiency in the recycling infrastructure are based on an extensive research performed by Wageningen Food and Biobased Research, Potentie voor de recycling van aluminiumverpakkingen eind 2020, as well as discussions with FME (metalen verpakkingen Nederland) and producers and recyclers of metal packaging.</p> <p><b>Effectiveness:</b> The application potential of the recycled material is determined with recycling experts. The Indicator of the recyclability of products made from the recyclate is determined in collaboration between Verpact and the aforementioned experts. The economic loss is determined using recycled material streams as a percentage of the market value of virgin material streams of the same basic raw material.</p>

## 4 The Environmental Impact results

The **Environmental impact check result** is shown in two bar charts; one showing the total CO<sub>2</sub> impact and one dividing this total into the share of four selected parameters. Hoover your mouse over these parameters to show the exact share.



The functional unit for which the environmental impact is determined can be customised. You can also choose between two measurement standards:

- **The Carbon Footprint** represents the contribution of your packaging to global warming. All pollutants emitted during the life cycle of the packaging that contributes to global warming (greenhouse gases) are expressed in kg CO<sub>2</sub> equivalent.
- **The European Equivalent**, referring to the overall environmental impact (following Product Environmental Footprint project: PEF). Other than the CO<sub>2</sub> equivalent, this European Equivalent also considers effects such as water consumption, resources consumption, water eutrophication, air acidification, ozone degradation, etc.

### Functional units

The functional unit is the unit of measure to which the environmental impact refers to.

In the SPC, the environmental impact can be expressed in three reference modes:

- **Per unit:** the impact per disposable unit as a total. This is useful to compare packaging with identical functionality.
- **Per mass:** the impact of the amount of material to pack a kg or litre of product. This is useful to compare packaging that holds the same volume or amount of product.
- **Per dose:** the impact of the amount of material to pack one portion or dose of product. This is useful to compare packaging with identical functionality.

This is useful to compare packs with different functionality. For example, it allows comparing the impact of using a pack with standard product with a smaller pack with condensed product.

### Different stages of the life cycle

The environmental impact is broken down per life cycle stage:

- **Raw material**, including the production of the main component's raw material, the closure, the label and the sub-components.
- **Distribution**, including the supply transport of raw material and finished packaging transportation.
- **Manufacturing**, including the electricity and heat consumption to manufacture the packaging from the raw material. Material losses during this process, such as cutting waste, are also included at this stage.
- **End-of-life**, including the impact of incinerating, landfilling, recycling and avoiding virgin impact at the end of the packaging life.

The transport of the filled packaging and the use phase is excluded.

## Sources of Environmental Impact calculations

The environmental impact amalgamates all effects of packaging throughout its entire lifecycle, from mined raw material, via production, assembly of the product-packaging combination and its use phase, until the disposal of packaging material.

The environmental impact is calculated based on the parameters entered in the calculate section of the Compass. This data connects to data from several databases. For rigid and flexible plastics, beverage cartons and paper & cardboard, the Ecoinvent database (version 3.5) is used. For glass the database from FEVE is used and for metal the databases from European Aluminium and WorldSteel are used. The calculation also takes the impact of the amount of recycled material into account, which is calculated as avoiding virgin material production. The percentage of material that

is indicated as 'out-of-home disposal' will be subtracted from the total amount of material, and is calculated as an 'incineration with energy recovery' end-of-life scenario.

## Calculation method

**Production and end-of-life:** The impact on the footprint of packaging by using recycled content or the level of recyclability of the packaging is calculated by a commonly used formula in an LCA. The European Commission published the "[Product Environmental Footprint](#)" (PEF) in 2013 to create one standard European environmental assessment methodology for products and services. This resulted in the formula called the [Circular Footprint Formula](#) (CFF).

As input for this formula the user's level of recycled content is defined in the Calculation section or the Compare section of the tool. The level of recyclability is derived from the data from the Circularity Check. These recyclability data are only valid for the Dutch situation and are not yet available for the rest of Europe.

**Main limitations of the model:** Packaging indicated in the Recycle Check with limited recyclability (indicated orange by the traffic light) can show a higher recycling rate than a packaging indicated with good recyclability (green light). Consequently, the packaging with limited recyclability can deliver lower environmental impact than packaging with good recyclability, due to a limit of the environmental analysis. The LCA model cannot assess the quality of the recyclability and cannot differentiate the environmental impact of packaging ending up in the mixed-fraction or packaging being recycled in a mono-fraction. The calculated footprint is purely based on the quantitative input of the recycling rate. The Recycle Check outcome and the Economic Loss Indicator are the only qualitative indicators for the environmental impact.

**Disclaimer:** Calculation is based on a limited amount of variables, and it does not provide a full Life Cycle Assessment, since this would require significantly more input. This means that some parameters used are based on an industrial average and are therefore fixed.

The calculation is not ISO-compliant. Besides, the indicators are extracted from the PEF recommendation (Product Environmental Footprint) and the model uses the PEF Circular Footprint Formula, but this does not make the calculation PEF-compliant.

The fixed data can be found in Table 'Fixed calculation data' in appendix 1.

# 5. Additional reading material

**Sustainable packaging from an international point of view: PackForward**

Visit [link](#)



**Do you want to know more about the recyclability of packaging?**

Please read the Recycle Checks

Visit [link](#)



**Factsheet industrial packaging waste**

(only available in Dutch)

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# 6. Appendix

## ► Table 1 Fixed calculation data

This data connects to data from several databases. For rigid and flexible plastics, beverage cartons and paper & cardboard, the Ecoinvent database (version 3.5) is used. For glass the database from FEVE is used and for metal the databases from European Aluminium and WorldSteel are used.

Stages	Parameters	Value	Unit
<b>Transport or raw material to manufacturing</b>	Mean	Truck	-
	Distance	500	km
	Empty Return Rate	30	%
	Repartition EURO3-4-5-6	10-19-28-43	%
<b>Manufacturing</b>	Losses	0.2	%
	Electricity	0.7	kWh/kg
	Natural gas	0.2	MJ/kg
	Country	NL	-
<b>Transport finished packaging</b>	Mean	Truck	-
	Distance	500	km
	Empty Return Rate	30	%
	Repartition EURO3-4-5-6	10-19-28-43	%
<b>End-of-life</b>	CFF formula parameters	As described in the PEF Annex 3 apart from the recycling rate which is calculated with the Recycle Check.	

## ► Table 2 Background data for raw material production

Material	Ecoinvent data	Material	Ecoinvent data
<b>PE</b>	Market for polyethylene production, high density, granulate RER	<b>PLA</b>	Lactic acid production, RER
<b>Bio-PE</b>	Polyester-complexed starch biopolymer, RER	<b>EVOH-PVOH-EVA</b>	Ethylene vinyl acetate copolymer, RER
<b>PP</b>	Market for polypropylene, granulate, GLO	<b>SiOx</b>	Market for silica sand, GLO
<b>Bio-PP</b>	<i>This information is not yet available in the database</i>	<b>AlOx</b>	Market for aluminium oxide, GLO
<b>PET</b>	Market for polyethylene terephthalate, bottle grade GLO	<b>Alu layer / dep.</b>	Market for aluminium, primary, GLO
<b>Bio-PET</b>	Polyester-complexed starch biopolymer, RER	<b>PA</b>	Polyamide (Nylon) production, RER
<b>PETC</b>	Market for polyethylene production, high density, granulate RER	<b>Paper</b>	Kraft paper production, RER
<b>PETG</b>	Market for polyethylene production, high density, granulate RER	<b>Cellophane</b>	Market for carboxymethyl cellulose, powder, GLO
<b>PS</b>	Polystyrene production, general purpose, RER	<b>PVC</b>	Polyvinyl chloride production, GLO
<b>PC</b>	Polycarbonate production, RER	<b>PVDC</b>	25 Polyvinyl chloride production, GLO



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