



# Punnets for berries

Articles codes: TR80 H25 R-PET, K29 H26 R-PET

R-PET percentage considered in the declared unit is 94%, that is the annual average on the whole production of 2018

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Geographical area  
Italy

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36490



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Programme operator  
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Environmental  
Product  
Declaration



An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com). This EPD is in compliance with ISO 14025 standard



INFIA, leading company in packaging for fruit and vegetables, was born in late 1940s, in the heart of Romagna, is a pioneer in its sector, potentially able to cover the whole production capacity with 100% R-PET. Thanks to an organized sales network on all five continents and consolidated partnerships globally, INFIA is European leader in recycled plastic packaging.

#### SITI PRODUTTIVI

INFIA srl / ITALIA

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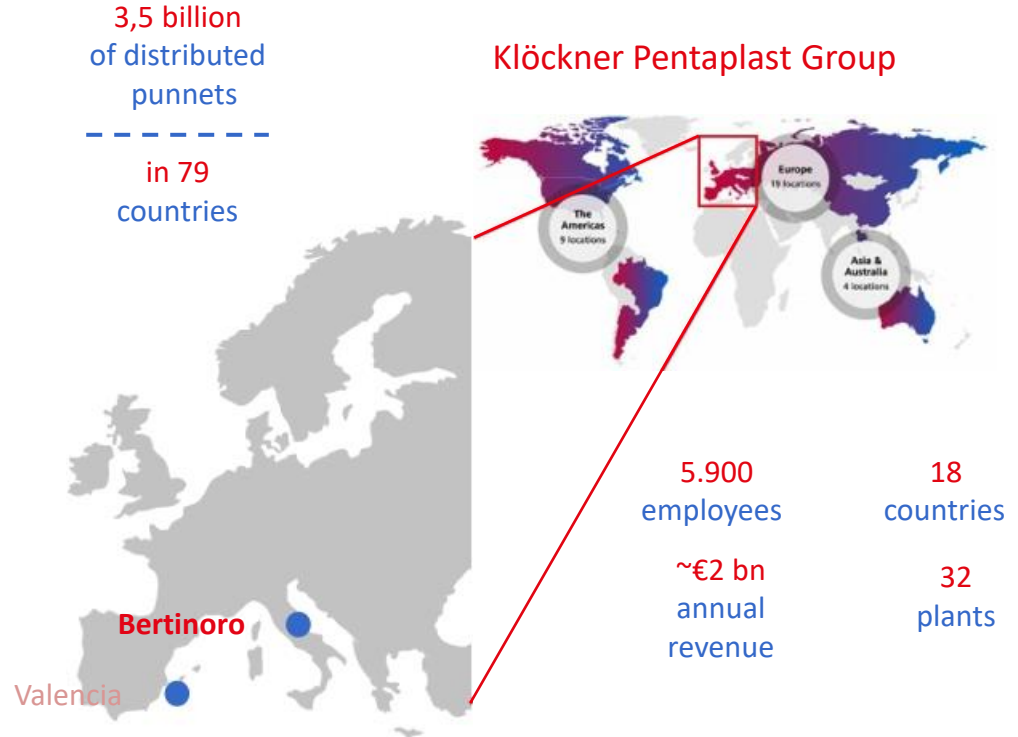
ITALIA

INFIA Plastic sa / SPAGNA

Avinguda Progrés, 5 Polígono Industrial Campo Anibal - 46530

PUZOL (Valencia)

Products object of the present EPD are produced at INFIA facility located in Bertinoro





## INTRODUCTION TO THE ENVIRONMENTAL PRODUCT DECLARATION (EPD)

The EPD - compliant with ISO 14025 standard - is a verified and registered document that communicates transparent information on the environmental performance of a product, evaluated along its life cycle. Environmental Product Declarations are created to inform customers and stakeholders about the environmental performance of products and services.

### What are its characteristics:

#### OBJECTIVE

Environmental performance is calculated using the Life Cycle Assessment (LCA) methodology, following the international standard ISO 14040.

#### CREDIBLE

Verified by an independent third-party accredited body.

## COMPANY VISION: 100% R-PET

Since 2008, INFIA is equipped with technologies that allow the use of R-PET potentially up to 100%. Therefore INFIA can treat the post-consumer PET with Super-Cleaning process both in the Italian and Spanish sites.

In 2013, INFIA formally obtained positive scientific opinion from EFSA (RECYC077).

The average percentage of R-PET calculated for the whole 2018 was 94%, referred to the total production of transparent products containing R-PET.

PET, mainly coming from bottles and trays, is recycled to produce again packaging suitable to come into contact with food, in line with the values of the circular economy.



## ➤ R-PET and packaging in fruit & vegetables sector



### Transparency:

In fruit and vegetables sector, R-PET is used thanks to its transparency which allows consumers to see the quality of the fruit, possible presence of mold and evaluate its ripening.



### Use of post-consumer recycled plastic:

The recycling of post-consumer PET is aimed to avoid the use of virgin polymers, thus saving non-renewable resources.

INFIA srl, pursuing its mission, used an average percentage of post-consumer recycled PET of 94% on the whole production of 2018.



### Machinability:

R-PET trays can be denested manually or with automatic machines.

According to specific applications, punnets can be used with or without lid or closed through heatsealing technology using automatic machines.



### Food contact:

R-PET is a polymer which, after its recycling, has regulations and technologies that allow its reuse again in high quality value applications such as direct contact with food.

R-PET is regulated by Reg 10/2011 EC specific for food contact must pass severe standardized migration tests.



### Resistance to humidity:

Trays in R-PET, for their resistance to humidity and ability to minimize condensation thanks to holes on the bottom that allow the ventilation of the food inside, are suitable for applications that require temperature changes (passage from cold rooms to ambient temperature), minimizing potential food wastes.

## Declared unit

Data refers to an empty punnet containing R-PET weighing 5,6 g and internal volume of 0,252 L



	Articolo	Weight [kg]	External dimensions LxIxh [m]	Internal volume [L]	Nominal capacity [kg]
REPRESENTATIVE PRODUCT	TR80 H25 R-PET	0,0056	0.143x0.096x0.025	0,252	0,125
ALIAS	K29 H26 R-PET	0,0061	0.141x0.118x0.026	0,334	0,125

### Function of the product:

The tray object this EPD is designed to contain and protect 125 g of berries (raspberries, blueberries, strawberries, currants, etc ...)

### Features:

- Customizable with embossing or adhesive labels
- It can be used with or without lid or heat-sealed even with automatic machines.
- Suitable for storage at room temperatures or below for long time
- Suitable for food contact applications thanks to its inertia, verified through regulated migration tests
- Laser markeable with batch number
- Transparent to allow consumers to view the content
- Composed only of PET polymer therefore designed to facilitate its recyclability

### Legislative compliance with applicable regulations:

- EC Regulation 10/2011 and subsequent amendments
- EC regulation 1907/2006 (REACH) and EC regulation 1272/2008 (CLP)

\* According to GPI v.3.01, the TR80 H25 RPET was chosen as the representative item, and all the data used for the calculation of the various environmental impact refers to its characteristics.  
It was also possible to include K29 H26 RPET as ALIAS item in this EPD as it performs the same function as the representative one and shows differences in environmental performance less than 10% in all the impact categories.

# Calculation methodology\_LCA Cradle-to-Gate

## Data quality:

In Core phase, primary data relating to 2018 were used, including production phase of post-consumer R-PET flakes in upstream. In remaining upstream phases, data from the Ecoinvent database were used.

## Geographical application field:

Italy

## Reference year:

2018

## Software:

SimaPro v. 9.0.0.35

## Database:

Ecoinvent v. 3.5

## Cut-off rules:

A cut-off of 1% has been applied in terms of environmental relevance, as required by PCR

## Considerations about end-of-life (EOL) scenarios:

In the case of trays object of this EPD, specific and official data relating to recycling, energy recovery and disposal are not available. To provide the interlocutor with an indication of how much the end of life can impact on life cycle of a tray, specific disposal scenarios, coming from collaborations with customers and recyclers, were compared with Italian average data and European targets referred to plastic packaging.

## Allocation:

In processes belong to Core phase, mass allocation of auxiliary plants and energy consumptions has been utilized.

## Recycled material content:

In order to determine the percentage of recycled material contained in trays produced, only post-consumer material was considered, in accordance with Italian Decree No. 203 of 8 May 2003, art.2.

The average percentage of recycled material, relative to the whole production of R-PET items, was calculated through mass balance considering reference year 2018.

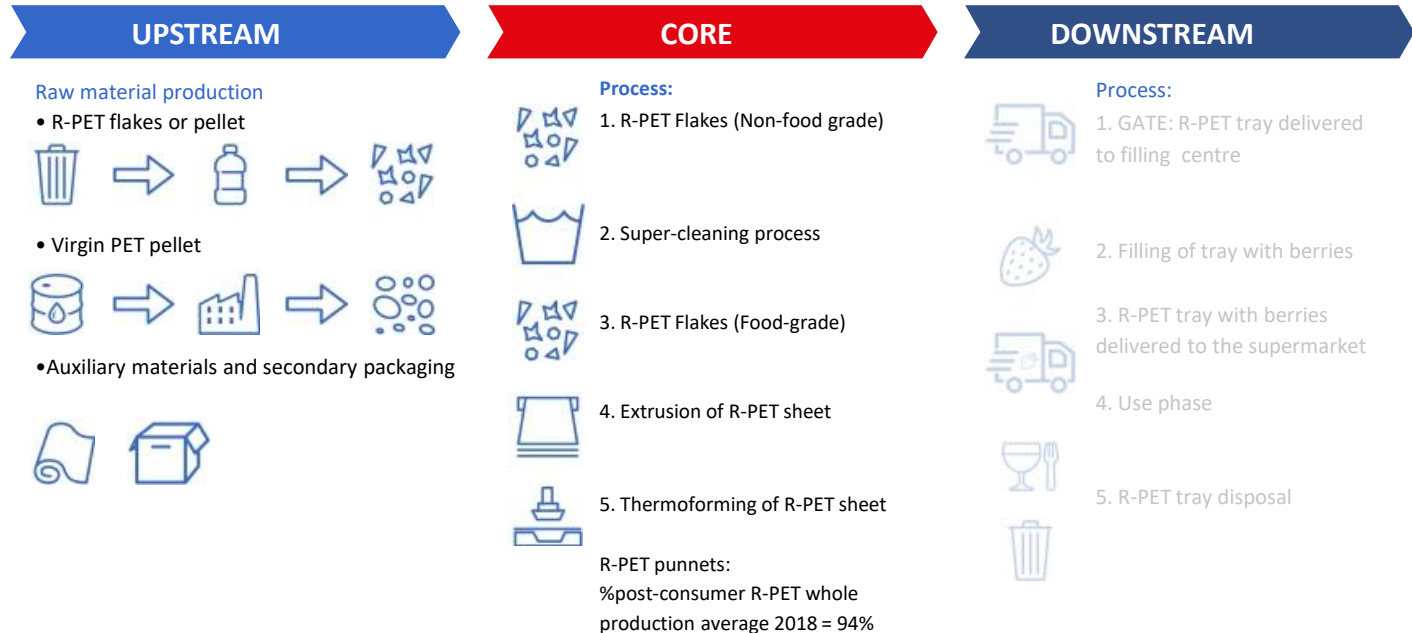
It should be noted that even post-industrial material, following the classification to waste during its life cycle, could be considered, to all effects, recycled material.

# ➤ System boundaries: LCA Cradle-to-Gate


Declared unit is 1 empty punnet containing R-PET weighting 5,6 g.

Specific data collected for the study refer to 2018

Processes composing the downstream phase are reported in transparency because they are not included into system boundaries, but still evaluated to provide additional environmental information



## ➤ Environmental impacts

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
 Global warming potential (GWP)	Fossil	kg CO <sub>2</sub> eq.	0,60*10 <sup>-2</sup>	0,71*10 <sup>-2</sup>	1,31*10 <sup>-2</sup>
	Biogenic	kg CO <sub>2</sub> eq.	31,94*10 <sup>-5</sup>	4,68*10 <sup>-5</sup>	36,63*10 <sup>-5</sup>
	Land use and land transformation	kg CO <sub>2</sub> eq.	5,95*10 <sup>-6</sup>	0,97*10 <sup>-6</sup>	6,92*10 <sup>-6</sup>
	<b>TOTAL</b>	kg CO <sub>2</sub> eq.	0,64*10 <sup>-2</sup>	0,71*10 <sup>-2</sup>	1,35*10 <sup>-2</sup>
Acidification potential (AP)		kg SO <sub>2</sub> eq.	2,42*10 <sup>-5</sup>	2,91*10 <sup>-5</sup>	5,33*10 <sup>-5</sup>
Eutrophication potential (EP)		kg PO <sub>4</sub> <sup>3-</sup> eq.	1,52*10 <sup>-5</sup>	1,14*10 <sup>-5</sup>	2,67*10 <sup>-5</sup>
Formation potential of tropospheric ozone (POCP)		kg NMVOC eq.	1,83*10 <sup>-5</sup>	2,05*10 <sup>-5</sup>	3,89*10 <sup>-5</sup>
Abiotic depletion potential - Elements		kg Sb eq.	1,64*10 <sup>-8</sup>	1,01*10 <sup>-8</sup>	2,65*10 <sup>-8</sup>
Abiotic depletion potential - Fossil fuels		MJ, net calorific value	9,47*10 <sup>-2</sup>	9,25*10 <sup>-2</sup>	18,72*10 <sup>-2</sup>
Water scarcity potential		m <sup>3</sup> H <sub>2</sub> O eq.	2,90*10 <sup>-3</sup>	0,95*10 <sup>-3</sup>	3,86*10 <sup>-3</sup>



## ➤ Use of resources

PARAMETER		UNIT	UPSTREAM	CORE	TOTAL
 Primary energy resources - Renewable	Use as energy carrier	MJ, net calorific value	19,49*10 <sup>-3</sup>	6,71*10 <sup>-3</sup>	26,19*10 <sup>-3</sup>
	Used as raw materials	MJ, net calorific value	0	0	0
	Total	MJ, net calorific value	19,49*10 <sup>-3</sup>	6,71*10 <sup>-3</sup>	26,19*10 <sup>-3</sup>
 Primary energy resources - Non-Renewable	Use as energy carrier	MJ, net calorific value	0,115	0,118	0,234
	Used as raw materials	MJ, net calorific value	0	0	0
	Total	MJ, net calorific value	0,115	0,118	0,234
Secondary Material		kg	5,24*10 <sup>-3</sup>	0	5,24*10 <sup>-3</sup>
Renewable secondary fuels		MJ, net calorific value	0	0	0
Non-renewable secondary fuels		MJ, net calorific value	0	0	0
Net use of fresh water		m <sup>3</sup>	5,35*10 <sup>-5</sup>	2,54*10 <sup>-5</sup>	7,89*10 <sup>-5</sup>

## Waste production and output flows

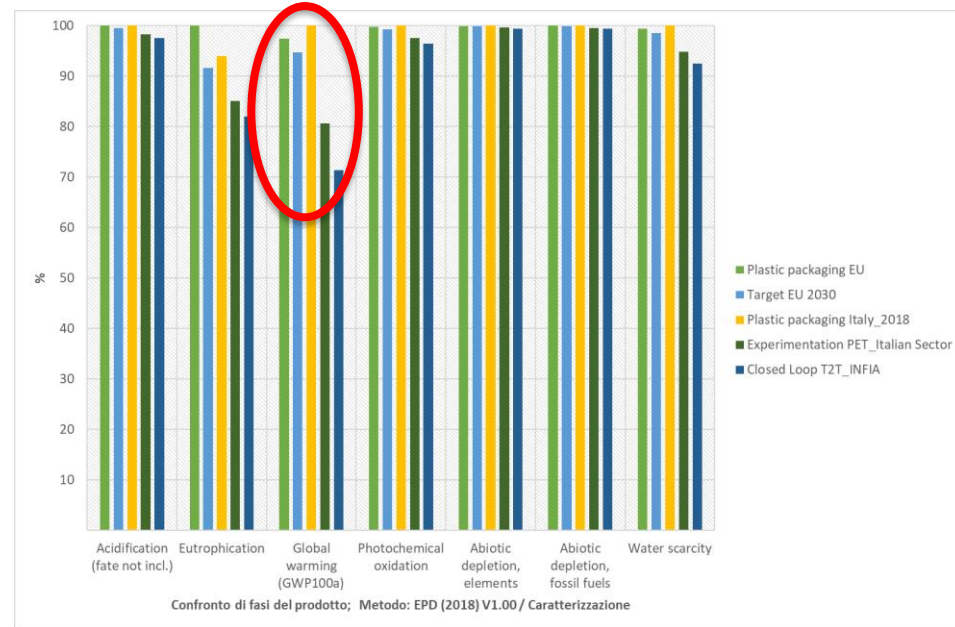
PARAMETER	UNIT	UPSTREAM	CORE	TOTAL
Hazardous waste disposed	kg	$2,74 \cdot 10^{-7}$	$2,72 \cdot 10^{-7}$	$5,46 \cdot 10^{-7}$
Non-hazardous waste disposed	kg	$0,18 \cdot 10^{-2}$	$0,13 \cdot 10^{-2}$	$0,31 \cdot 10^{-2}$
Radiocative waste disposed	kg	$0,29 \cdot 10^{-6}$	$0,43 \cdot 10^{-6}$	$0,72 \cdot 10^{-6}$
Components for reuse	kg	0	0	0
Material for recycling	kg	0	$1,62 \cdot 10^{-2}$	$1,62 \cdot 10^{-2}$
Materials for energy recovery	kg	0	$1,25 \cdot 10^{-2}$	$1,25 \cdot 10^{-2}$
Exported energy, electricity	kg	0	0	0
Exported energy, thermal	kg	0	0	0

## ➤ Considerations about End-Of-Life (EOL) and GWP

It is noted that are not available, for R-PET trays covered by this EPD, specific national or European data about recycling, energy recovery and disposal. For this reason, specific scenarios resulting from collaborations with customers and recyclers, have been compared with Italian average data and European targets related to plastic packaging, in order to objectively assess the environmental performance.

In the graph is possible to highlight how the impact categories GWP and eutrophication are those most influenced by different end-of-life scenarios:

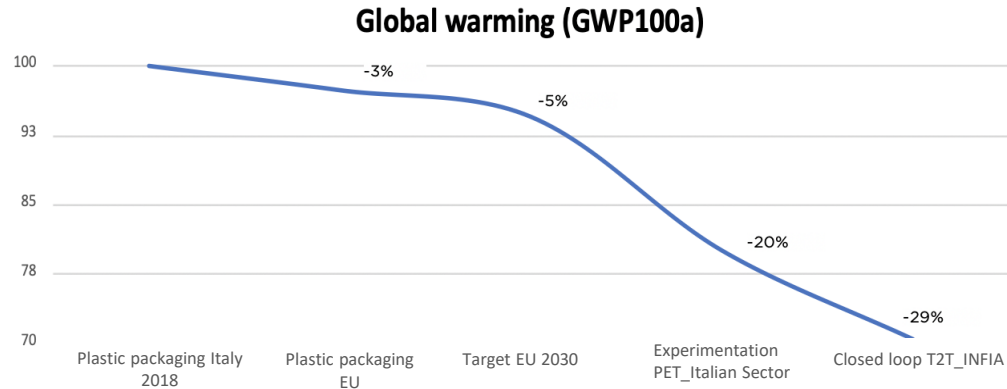
- EOL scenario of plastic packaging in Italy in 2018 (Corepla, Rapporto di sostenibilità 2018<sup>1</sup>)
- EOL scenario of plastic packaging in Europe (data from “Plastics – The Facts 2018”<sup>2</sup>)
- EU 2030 Target<sup>3</sup>: in Europe, the recycling target is set at 55% (by 2030) for plastic packaging waste, while the maximum delivery target in landfills of 10% (by 2035) refers to all urban collection materials. An end-of-life scenario was therefore considered, which consider the achievement of both these targets; the percentage of energy recovery, on the other hand, was calculated by difference from the two previous targets.
- Experimentation for recycling PET trays between PROFOOD, association of producers of packaging for fresh food, and COREPLA, Italian plastic packaging waste management consortium
- Management of R-PET trays in closed loop, with complete recycling (closed-loop T2T). Experimentation start up in 2018 and positively concluded in 2019.



It is interesting to consider how the two EOL scenarios resulting from the companies' commitment to effectively improve the recycling of the trays by putting into practice concrete actions (INFIA T2T Closed Loop and PET experimentation - Italian sector), allow to overcome the recycling targets set by the European legislator.

## ➤ Observation about End-Of-Life (EOL) and GWP

EOL SCENARIOS (AND DATA ORIGIN)	Recycling	Dump	Energy recovery
Plastic packaging Italy 2018	44,5%	12,5%	43%
Plastic packaging EU	40,8%	20,4%	38,8%
Target EU 2030	55%	10%	35%
Experimentation PET Italian Sector	83%	3%	14%
Closed loop T2T_INFIA	100%	0%	0%



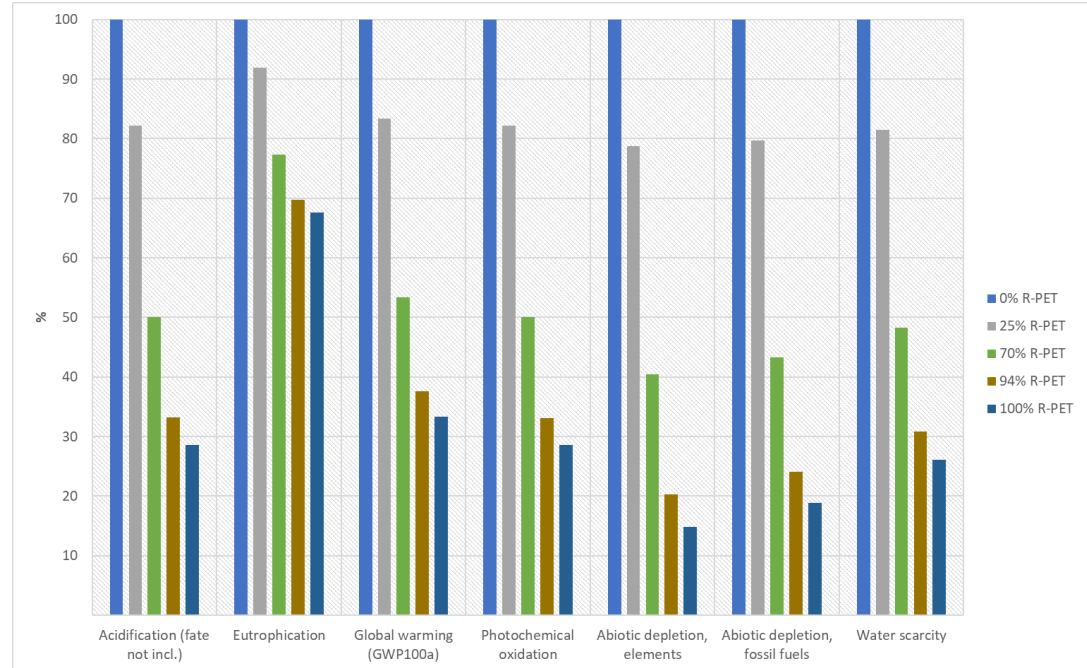
## ➤ Recycled PET content



### Percentage of recycled PET

For a critical and objective assessment of company strategies adopted, the environmental impact is evaluated in relation to the content of recycled raw materials:

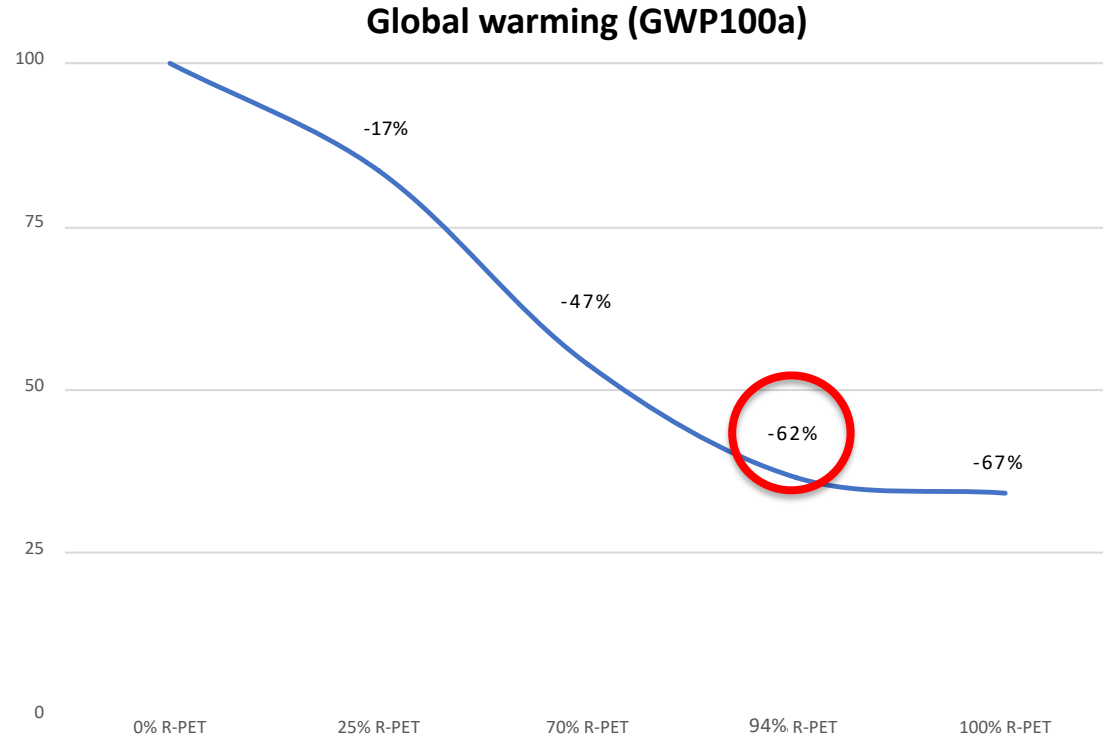
- 0% recycled or only virgin raw materials uses
- 25% recycled, equal to the 2025 target set in the EU regarding PET bottles for mineral water. This reference is used as it refers to the same polymer matrix of the trays object of this EPD, which however are not currently subject to the obligation to incorporate recycled raw material
- 70% average for the Italian sector (EPD trays for fresh food PROFOOD)
- 94% recycled equal to the quantity used by INFIA in 2018, as the production average of all R-PET items
- 100% recycled



## ➤ Recycled PET content

As the content of recycled raw materials increases, there is an overall improvement in all the environmental impact categories.

The GWP impact category is reduced by 62% by using 94% of recycled PET, or the average production data for the year 2018, compared to the only use of virgin PET.



## ➤ R-PET tray to tray (T2T)

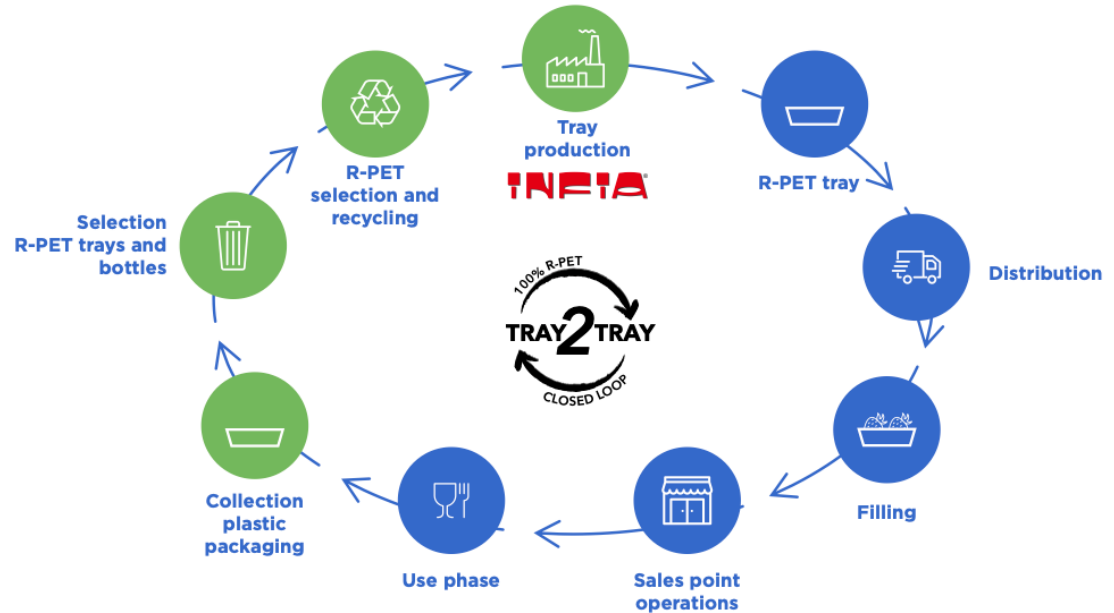
### R-PET closed loop trays

Thanks to tray-to-tray project (T2T), it was possible to experiment how R-PET trays produced by INFIA can be object of closed-loop recycling.

R-PET trays for berries are collected by customer in a differentiated way at processing centers and supermarkets. R-PET trays are subsequently selected, grinded and washed at an authorized recycling plant and finally are reintegrated by INFIA into the production cycle.

In this closed-loop process, 100% recycling rate is considered.

This experimentation has started in 2018 and successfully finalized in 2019.



## ➤ Additional information



### Recycling of plastic packaging

PET is classified by the recycle code 1, is recyclable and it has to go to separate collection system, according to local rules depending on facilities in place.



### Product certification

The products object of this study complies with BRC (British Retail Consortium) standard for packaging regarding product safety, legality and quality.



### Design for recycling

Trays object of this EPD are not composed of polymers other than PET or coupled with other materials, this to facilitate recycling \*

\*<https://reciclass.eu/it/reciclass/linee-guida-per-il-riciclo/>



### HSHE

INFIA has the OHSAS 18001 certification for the management of health and safety in the workplace



## ➤ Differences from previous versions of the EPD

Differences compared to previous versions of the EPD are due to the updating of Secondary Material indicator value



# Glossary

## Life Cycle

Consecutive and interconnected phases of a product system, from the acquisition of raw materials or from the generation of natural resources, to final disposal.

[ISO 14044:2018]

## Functional Unit

Quantified performance of a product system to be used as a unit of reference.

[ISO 14044:2018]

## System boundary

Set of criteria that specifies which unit processes are part of a product system.

[ISO 14044:2018]

## Environmental Aspect

Element of an organization's activities or products or services that can interact with the environment.

[ISO 14001:2004] - [ISO 14044:2018]

## Environmental impact

Any modification of the environment, negative or beneficial, caused totally or partially by the environmental aspect of an organization.

[ISO 14001:2004] - [ISO 14025:2010]

## Impact category

Class that represents the environmental problems of interest to which the results of the life cycle inventory analysis can be assigned.

[ISO 14044:2018]

## Impact category indicator

Measurable representation of an impact category.

[ISO 14044:2018]

## Global warming

Global warming is the phenomenon of raising planet's surface temperature, with reference to Earth's atmosphere and oceans' waters.

## Acidification

Acidification is the process determined by emission of compounds which, with action of catalysts, generate hydrogen ions causing a decrease in the pH of agricultural soils, aquifers, lakes and forests, with serious consequences on living organisms; also buildings, monuments and materials in general report significant damages following acid rain.

## Photochemical oxidant formation

Photochemical formation of tropospheric ozone is due to some volatile organic substances in presence of solar radiation.

## Eutrophication

Eutrophication is the phenomenon caused by an excessive intake of nutrients such as nitrogen, phosphorus and sulfur in an aquatic ecosystem, which determines proliferation of microscopic algae and an increased bacterial activity. The consequent decrease of oxygen in surface waters and in soil causes a degradation of the environment becoming asphyxia leading, in a long period, to death of aquatic creatures.

## Abiotic depletion - Elements and fossil fuels

Abiotic depletion represents the use of abiotic resources, defined as "non-living" natural sources (sources of energy, soil and subsoil, rocks, water, air, set of climatic factors, etc)

## Water scarcity footprint(WSF)

Evaluate the potential for water depletion, both for humans and for ecosystems.

# Information

**PROGRAM OPERATOR:** EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden e-mail: [info@environdec.com](mailto:info@environdec.com)

In compliance with ISO 14025, EPDs within the same product category but from different programmes may not be comparable.

INFIA srl is the EPD owner and has the exclusive ownership and responsibility of this EPD

Environmental impacts of different EPDs can only be compared considering all the technical information that supports the definition of the declared/functional unit required by the PCR

This environmental declaration has been developed referring to Product Category Rules (PCR): PCR 2019:13 PACKAGING PRODUCT CATEGORY CLASSIFICATION: MULTIPLE CPC, version 1.0 The Product Category Rules (PCR) review was performed by Maurizio Fieschi (chair) contactable through the Programme Operator: [info@environdec.com](mailto:info@environdec.com).

Independent third-party verification of the declaration and data, according to the standard ISO 14025:2006:

- ☐ EPD process certification  
☒ EPD verification

Third-party verifier: SGS ITALIA SPA, Via Caldera 21, 20153 – Milano (MI) - Italy

Accredited by: ACCREDIA – Accreditation: 006H

Data follow-up procedures during the EPD validity involves the third-party verifier: ☒ Yes ☐ No

The EPD was verified remotely without an on-site visit. The on-site verification will be performed within 6 month from the date of approval

- **ISO 14040:2006** Environmental management — Life cycle assessment — Principles and framework
- **UNI EN ISO 14025:2006** Environmental labels and declarations – Environmental declarations of type III
- **UNI EN ISO 14044:2018 + AMD 2017** Environmental management – Life cycle assessment – Requirements and guidelines
- **PCR 2019:13 VERSION 1.0 VALID UNTIL: 2023-11-08 PACKAGING PRODUCT CATEGORY CLASSIFICATION: MULTIPLE CPC**
- Central Product Classification (CPC) Series M No. 77, Ver.2.1
- **GENERAL PROGRAMME INSTRUCTIONS FOR THE INTERNATIONAL EPD® SYSTEM VERSION 3.01**
- Reg. EC 10/2011, reg. EC 2023/2008, reg. EC 1935/2004 e reg. EC 2026/2006



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