

Environmental Product Declaration



EVlzero | Transparent binder for conglomerates



Programme

The International EPD® System
www.environdec.com

Programme Operator
EPD International AB

Registration number
EPD-IES-0022544

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21/9/2030

This EPD has been developed in accordance with ISO 14025.

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


ENVIRONMENTAL PRODUCT DECLARATION



PROGRAMME INFORMATION

Program Operator: EPD INTERNATIONAL AB, Box 210 60, SE-100 31 Stockholm, Sweden,
Email: support@environdec.com

EPDs within the same product category but from different programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

The EPD owner has the sole ownership, liability and responsibility of the EPD

ACCOUNTABILITIES FOR PCR, LCA AND INDEPENDENT, THIRD-PARTY VERIFICATION

PRODUCT CATEGORY RULES (PCR)

PCR: Plastics in primary forms, PCR 2010:16 , 2024-07-01 v. 4.0.0, CPC 347

PCR Review was conducted by: Anna Bortoluzzi, Maurizio Fieschi, Quota Sette S.r.l. Studio Fieschi, Paolo Simon-Ostan, MAPPINGLCA; anna.bortoluzzi@quotasette.it, fieschi@studiofieschi.it

LIFE CYCLE ASSESSMENT (LCA)

LCA accountability: Elisa Savio, Riccardo Novelli, Life Cycle Engineering

THIRD-PARTY VERIFICATION

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

☒ EPD verification by individual verifier

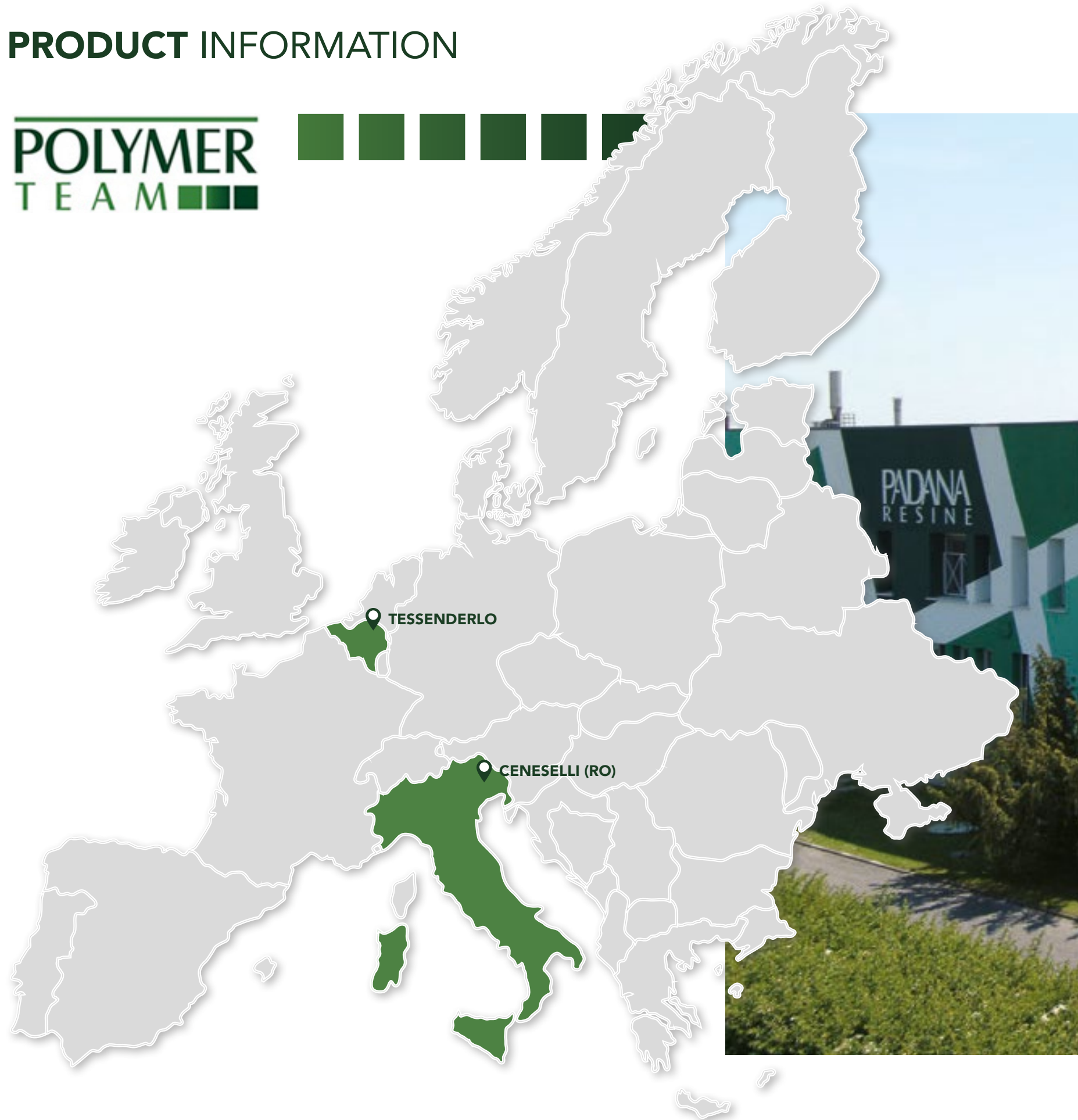
Third-party verifier: Elia Rillo

Approved by: The International EPD System

Procedure for follow-up of data during EPD validity involves third-party verifier: ☐ YES ☒ NO

PRODUCT INFORMATION

POLYMER
TEAM



THE GROUP

For more than 30 years POLYMER TEAM is known as one of the market leaders in **production and sales of APP compounds** (Atactic Polypropylene) and IPP (Isotactic Polypropylene) compounds for application in modified bitumen roofing. The company owns 2 production sites. The Italian sites produce APP compounds and compound for road applications whereas the Belgian factory in Tessenderlo is dedicated to both APP and IPP compounds.

The flexible company attitude enables a smooth and close cooperation with the customer in all aspects, beginning at the product development stage until the supply on industrial scale.

POLYMER TEAM is ready to learn about your needs and eager to work together with you towards the optimal custom made solution.

POLYMER TEAM is a dynamic, market-leading company in the **production of Polyolefins compounds**. Parallel to a broad range of APP- and IPP-compounds for bitumen modification, a range of IPP compounds (homo- and copolymer) for injection molding and extrusion applications is offered as well. Combining customized product development, technical support and flexible service, Polymer Team is the reliable partner for your PP compounding projects or toll manufacturing.

Polymer Team group which produces in the Ceneselli plant (Rovigo in Italy) products for road applications such as EVlzero®.

PRODUCTION SITE: via Calto 731 - 45030 - Ceneselli (RO)

PRODUCT INFORMATION

THE PRODUCT



EVlzero is an innovative clear eco-friendly synthetic binder for conglomerates. It is the ideal product for road wearing surfaces (cycle and pedestrian paths, parks, villas and private homes, redevelopment of rural areas, squares and parking lots, historic centers) with natural colors and low visual impact.

EVlzero enhances historical contexts and the landscape. It is also an ecological product that helps reduce heat islands. Its transparency highlights the natural colors of the aggregates.

Its technical characteristics are in line with the typical requirements of the reference sector.

EVlzero is a patented product N°0001422317

STORING AND MIXING TEMPERATURE	
Storing temperature	Ambient temperature
Mixing temperature	190 °C

PRODUCT PRESENTATION	
Colour	Transparent
Shape	Chips: 10 x 10 x 3 mm approx.
Packaging	20 kg PE bags



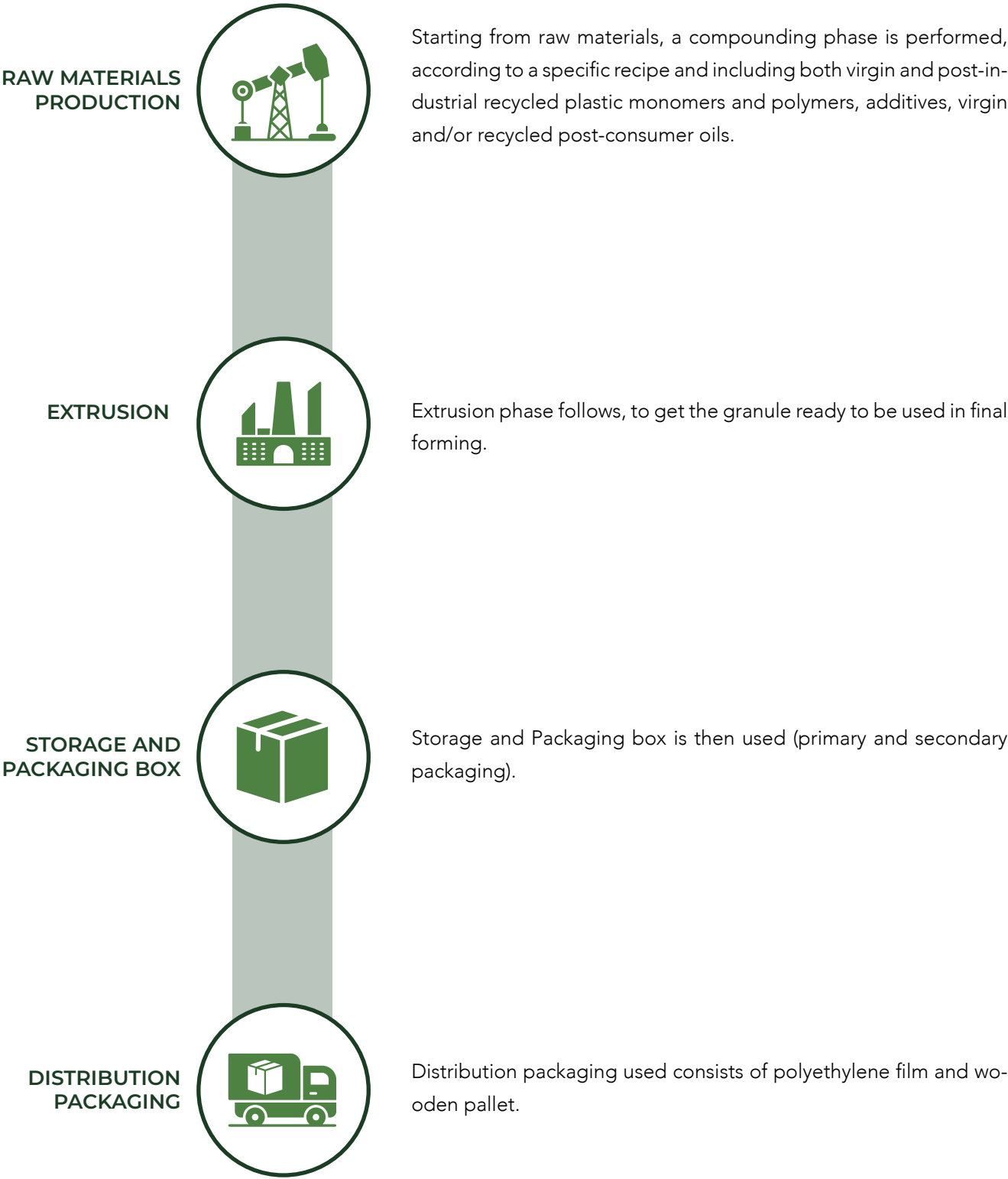
TECHNICAL FEATURES	TYPICAL VALUES	STANDARD APPLIED
Dynamic viscosity at 160°C	> 700 mPa*s	UNI EN 13702
Penetration at 25°C	25 - 55 dmm	UNI EN 1426
Softening point	> 75 °C	UNI EN 1427
Flash point	> 220 °C	DIN 51755 ASTM D92,D93
Density at 25°C	850 kg/m³	EN ISO 3838
Calorific value	35.3 MJ/kg	

The above data indicate average production values. Their purpose is to give general indications and they do not constitute a guarantee of certain specific properties of the product illustrated. Deviation from the requirement requested by the reference PCR; not all specifications are measurable and consistent with the scope of the product under study.

CPC CODE	3479
GEOGRAPHICAL SCOPE OF THE EPD	Italy (Production)
DECLARED UNIT	1 kg of product in the form of granules, chips, pellets, powder, gel, including its packaging (the weight of the packaging is not included in this 1 kg)
YEAR COVERED BY THE DATA USED FOR THE LCA	2023
MAIN DATABASES:	EcoInvent 3.10, cm.chemicals, Industry Data
LCA SOFTWARE USED	verified Tool "Base Tool Polymer Team" v1.0
ALLOCATION METHOD	physical, by mass
CUT-OFF	Production and disposal of packaging for all semi-finished products included in the bill of materials Machinery maintenance and their general life cycle impacts other than their consumptions and emissions during their operating phase in the year 2023
CONSULTACY COMPANY	LIFE CYCLE ENGINEERING spa www.lcengineering.eu - info@lcengineering.eu

PRODUCT INFORMATION

MANUFACTURING PROCESS



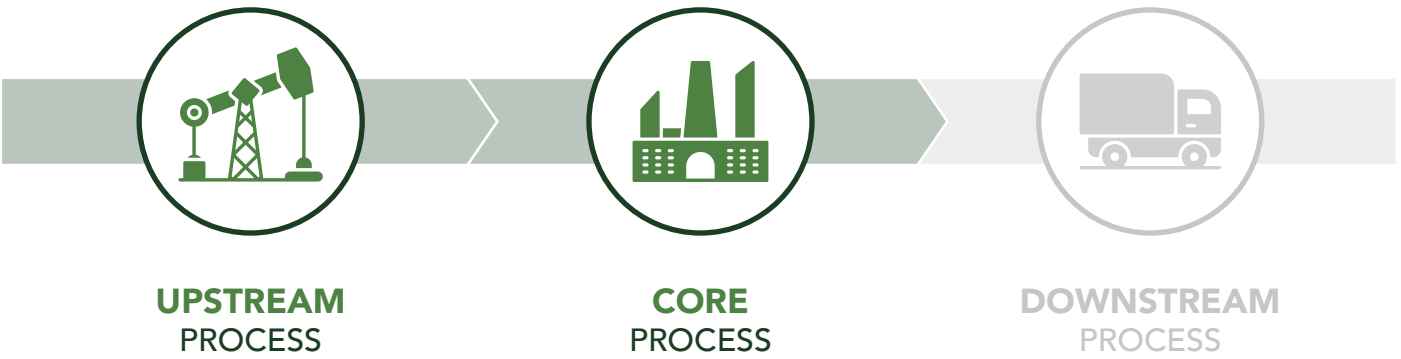
SYSTEM BOUNDARIES

According to PCR 2010:16 v.4.0.0, the scope of this EPD is cradle-to-gate. The life cycle of the product is divided into life cycle stages: **Upstream processes**, **Core processes**, Downstream processes (not applicable).

Plastic in primary form (mainly granules but also chips, pellets, powder, gel) is raw material or an intermediate material (for example compounds) for which further processing may, and often includes, chemical additivation and/or incorporation into many different possible articles for many different market applications.

These materials form the “building blocks” for a production chain of countless items in very different markets, making their end use and end-of -life treatment often unpredictable: that is the reason why the cradle-to-gate approach was chosen.

The information offered by the EPD regarding the raw material is not of interest to the consumer, therefore, this EPD shall not be used for business-to-consumer communication.



LCA METHODOLOGY

Product environmental burden has been processed in accordance with EPD general instructions issued by International EPD® System (GPI v4.0) and N.PCR 2010:16 v4.0.0, Plastics in primary forms UN CPC 347.

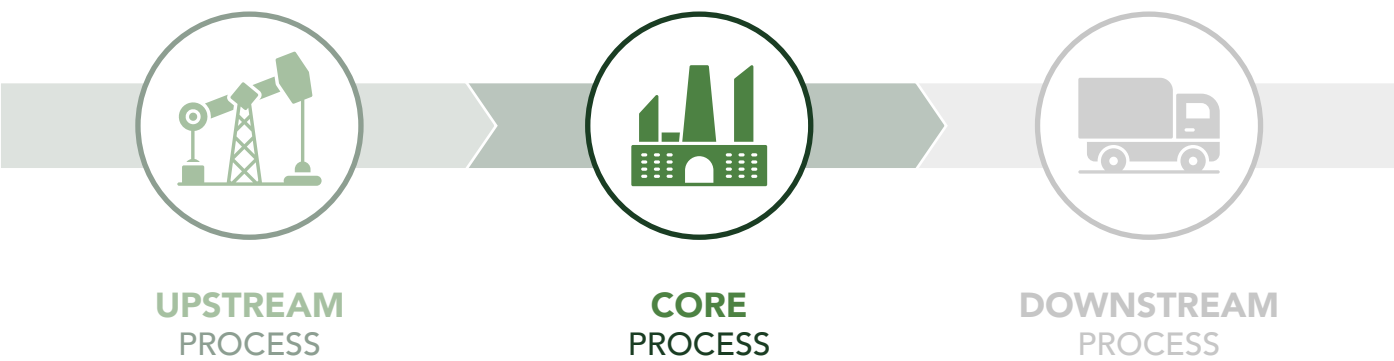
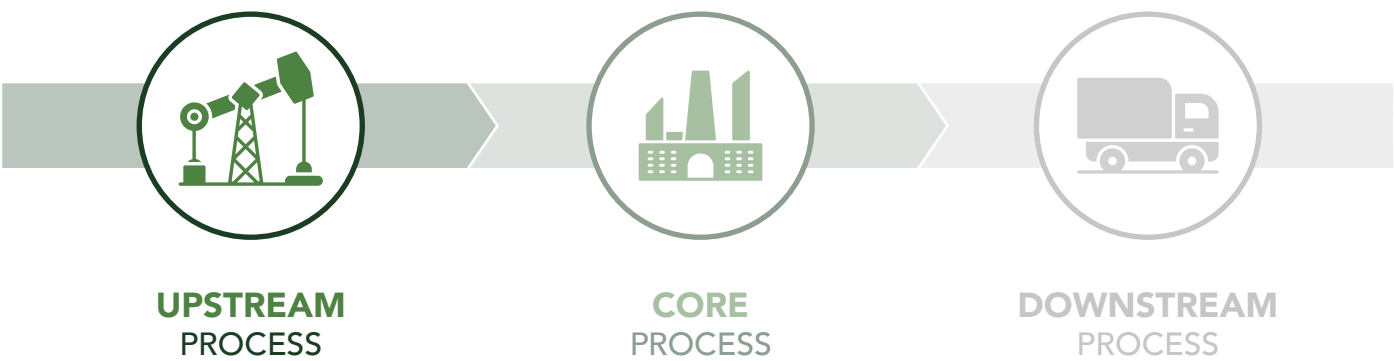
EVlzero at plant level was described by using specific data from Italian manufacturing facility, located in Ceneselli (IT), collected during the year 2023.

The Base Tool Polymer Team version 1.0 pre-verified was used to gather in-depth information about all aspects of the production system such as bill of material, process efficiencies, compounding process, air emissions and process waste management. From a methodological point of view, the classification of recycled materials considers post-consumer recycling as “burden-free” in the perspective of the pollution-pay principle; pre-consumer (or post-industrial) recycling has been modelled with an economic allocation equal to 50% of the production impacts of the equivalent virgin material; the by-product has been modelled with an impact similar to the equivalent virgin material.

The primary resource consumption results declared in the EPD can be interpreted by the reader using indifferently all three options available according to the EPD regulation, knowing that the calorific value of the product is equal to 35.3 MJ/kg.

PRODUCT INFORMATION

SYSTEM BOUNDARIES



UPSTREAM PROCESS



CORE PROCESS



CONTENT DECLARATION

EVlzero does not contain any materials / substances hazardous to health and the environment (carcinogenic, mutagenic or toxic to reproduction, allergic, PBT, vPvB), according to Regulation (EC) No 1907/2006 of the European parliament and of the council of 18 December 2006 concerning the Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH).

EVlzero			
	RELATIVE MATERIAL CONTENT PER DECLARED UNIT [%]	RECYCLED CONTENT PER DECLARED UNIT [%]	BY-PRODUCT CONTENT PER DECLARED UNIT [%]
PLASTICS	81,32%	7,57%	0,77%
ADDITIVES	12,78%	0,00%	0,00%
OILS	5,90%	5,90%	0,00%
TOTAL	100,00%	13,47%	0,77%

The percentage content related to recycled plastic refers entirely to plastic sourced from post-industrial collection.
The percentage of recycled oil instead refers to oil sourced from post-consumer collection.

From a methodological point of view, the classification of recycled materials considers post-consumer recycling as “burden-free” in the perspective of the pollution-pay principle; pre-consumer (or post-industrial) recycling has been modelled with an economic allocation equal to 50% of the production impacts of the equivalent virgin material; the by-product has been modelled with an impact similar to the equivalent virgin material.

PACKAGING			
	RELATIVE MATERIAL CONTENT PER PACKAGING UNIT [%]	RECYCLED CONTENT PER PACKAGING UNIT [%]	BY-PRODUCT CONTENT PER PACKAGING UNIT [%]
WOOD	72%	0%	0%
PLASTICS	28%	0%	0%
TOTAL	100,00%	0,00%	0,00%

ENVIRONMENTAL PERFORMANCE

ENVIRONMENTAL IMPACT FOR 1 kg OF EVlzero				
	UNITS / F.U.	UPSTREAM PROCESS	CORE PROCESS	
		A1	A2	A3
Climate change - Total	kg CO ₂ eq	2.26E+00	1.17E-01	2.30E-01
Climate change - Fossil	kg CO ₂ eq	2.26E+00	1.17E-01	2.30E-01
Climate change - Biogenic standard	kg CO ₂ eq	3.02E-03	3.90E-06	6.11E-05
Climate change - Land use and LU change	kg CO ₂ eq	1.07E-03	3.06E-06	1.24E-05
Climate change - GWP GHG or irreversible	kg CO ₂ eq	2.26E+00	1.17E-01	2.30E-01
Acidification	mol H+ eq	6.34E-03	1.75E-03	3.52E-04
Eutrophication. aquatic freshwater	kg P eq	4.42E-05	9.57E-08	1.53E-06
Eutrophication. aquatic marine	kg N eq	1.22E-03	4.77E-04	9.81E-05
Eutrophication. terrestrial	mol N eq	1.31E-02	5.28E-03	1.07E-03
Photochemical ozone formation	kg NMVOC eq	1.03E-02	1.50E-03	5.25E-04
Ozone depletion ODP	kg CFC11 eq	1.43E-07	2.10E-09	8.04E-09
ADP for minerals and metals	kg Sb eq	7.11E-07	2.77E-09	2.03E-09
ADP for fossil resources	MJ	6.49E+01	1.49E+00	3.59E+00
Water deprivation potential (WDP)	m ³ depriv.	5.68E-01	6.08E-04	2.70E-02

Totals may not match, because of rounded data

USE OF PRIMARY RESOURCES FOR 1 kg OF EVIzero				
	UNITS / F.U.	UPSTREAM PROCESS	CORE PROCESS	
		A1	A2	A3
Primary renewable energy (carrier)	MJ	1.49E+00	4.26E-03	1.33E-01
Primary renewable energy (feedstock)	MJ	5.27E-03	0.00E+00	0.00E+00
PRIMARY RENEWABLE ENERGY (TOTAL)	MJ	1.50E+00	4.26E-03	1.33E-01
Primary non-renewable energy (carrier)	MJ	3.55E+01	1.49E+00	3.59E+00
Primary non-renewable energy (feedstock)	MJ	3.53E+01	0.00E+00	0.00E+00
PRIMARY NON-RENEWABLE ENERGY (TOTAL)	MJ	7.08E+01	1.49E+00	3.59E+00

Totals may not match, because of rounded data

USE OF SECONDARY RESOURCES FOR 1 kg OF EVIzero				
	UNITS / F.U.	UPSTREAM PROCESS	CORE PROCESS	
		A1	A2	A3
Secondary materials	kg	1.61E-01	0.00E+00	0.00E+00
Renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00

Totals may not match, because of rounded data

USE OF WATER FOR 1 kg OF EVIzero				
	UNITS / F.U.	UPSTREAM PROCESS	CORE PROCESS	
		A1	A2	A3
Net use of fresh water(EI3.9)	m³	1.31E-02	3.46E-05	8.16E-04

Totals may not match, because of rounded data

WASTE PRODUCTION FOR 1 kg OF EVIzero				
	UNITS / F.U.	UPSTREAM PROCESS	CORE PROCESS	
		A1	A2	A3
Hazardous waste disposed	kg	2.33E-02	4.93E-05	4.19E-04
Non hazardous waste disposed	kg	3.70E+00	1.70E-03	9.15E-02
Radioactive waste disposed	kg	6.74E-05	1.11E-07	1.29E-06

Totals may not match, because of rounded data

OUTPUT FLOWS AND EXPORTED ENERGY FOR 1 kg OF EVIzero				
	UNITS / F.U.	UPSTREAM PROCESS	CORE PROCESS	
		A1	A2	A3
Components for re-use	kg	4.90E-01	0.00E+00	0.00E+00
Materials for recycling	kg	7.48E-04	0.00E+00	1.09E-02
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00
Exported Energy	MJ	0.00E+00	0.00E+00	0.00E+00

Totals may not match, because of rounded data



REFERENCES

- Life Cycle Assessment appliet to plastic pellet EVIzero, 2024, Polymer Team NV

- General Programme Instructions for the International EPD®System v. 4.0, 2021-03-29

- PCR 2010:16 v. 4.0.0: Plastics in primary forms (International EPD® System, 2016)

- ISO 14040:2021

- ISO 14044:2021

- ISO 14025:2010





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