

ENVIRONMENTAL PRODUCT DECLARATION (EPD) FOR PLASTIC COATED FABRICS FOR THE AUTOMOTIVE SECTOR OF



PROGRAMME	The International EPD System, www.environdec.com
PROGRAMME OPERATOR	EPD International AB
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CPC DIVISION	27
PCR	PCR 2011:06 "Nonwovens for clothing, protective clothing and upholstery" v. 3.01, 2019-09-06

THE PRESENT DOCUMENT COMPLIES WITH ISO 14025 AND THE REQUIREMENTS OF GENERAL PROGRAMME INSTRUCTIONS FOR THE INTERNATIONAL EPD[®] SYSTEM, VERSION 3.01 DATED 2019-09-18. AN EPD SHOULD PROVIDE CURRENT INFORMATIONS AND UPDATED IF CONDITIONS CHANGE. THE DECLARED VALIDITY IS THEREFORE SUBJECT TO REGISTRATION AND CONTINUOUS PUBLICATION ON WWW.ENVIRONDEC.COM WHERE IT IS POSSIBLE TO CONSULT FURTHER INFORMATION.

THE COMPANY

SPAC SpA is a company founded in 1973 and includes 2 production sites: one in Arzignano (VI), with the production of synthetic leathers through the coating of PVC and PU, and one in Alonte (VI), where the Vegam Division is located, specialized in lamination of high tech fabrics. The company is present in various markets (automotive, high tech fabrics, footwear, furniture, etc.) and with a production capacity of around 60.000 m2 per day.



The constant investments in structures, research and development and new technologies make Spac an avantgarde company in the proposition of new future solutions, always with an eye on the environment.

Spac believes it is possible to produce in a safe and sustainable way for the environment. This is confirmed by the certification of its Environmental Management System in compliance with the standard ISO 14001, of the quality management with the ISO 9001 and ISO 16949, of the occupational health and safety OHSAS 18001.

THE PRODUCTS

Three different models of plastic coated fabrics for the automotive sector have been studied, produced in the Arzignano (VI) plant:

1. Ecocosto 199-10 HTG 13-10
2. Ecocosto 199-16 AC 15-10
3. Alocosto 017-18 CA

Tab. 1 collects the technical characteristics of the three products.

TECHNICAL CHARACTERISTICS						
	ECOCOSTO 199-10 HTG 13-10		ECOCOSTO 199-16 AC 15-10		ALOCOSTO 017-18 CA 12-10	
Grain	PXD R.8		PXD R.8		PXD R.8	
Width (m)	1,4		1,4		1,4	
Cod. Type effect	Normal		Normal		Normal	
Colour	19610		Black 21808		Black 23295	
Tensile strength (N)	700		480		137	
Tear strength (N)	600		410		102	
Abrasion resistance (cycles)	1000		1000		1000	
Flammability (mm/min)	<100		<100		<100	
	Min	Max	Min	Max	Min	Max
Weight (g/mq)	900	1100	900	1100	650	830
Thickness (mm)	1,30	1,70	1,4	1,8	1,10	1,40

Tab. 1- Products technical characteristics

Content declaration

Products composition is:

1. Ecocosto 199-10 HTG 13-10: mix di 80% PVC, 8% PU e 11% PA
2. Ecocosto 199-16 AC 15-10: mix di 72% PVC, 27% CO e 1% PU
3. Alocosto 017-18 CA 12-10: mix di 65% polyurethane, 17,5% polyester e 17,5% cotton.



Packaging informations

There are two types of distribution packaging: large cardboard box (22 m² of capacity) and small cardboard box (16 m² of capacity). In addition, for both boxes, a secondary packaging (LDPE film) is used.



ENVIRONMENTAL PERFORMANCE DECLARATION

The methodology

The products potential environmental impacts assesment was carried out using the characterization factors indicated in www.environdec.com¹, using the LCA (Life Cycle Assessment) methodology. The LCA, applied according to ISO 14044:2006 and 14044:2018, is a procedure for quantify and evaluating the environmental impacts of a product/process by the determination of energy consumption, used materials and wastes released into the environment during the entire product life cycle.

The product category requirements adopted: PCR 2011:06 “Nonwovens for clothing, protective clothing and upholstery product category classification” v. 3.01, UN CPC Code 27922 of 06/09/2019.

Declared Unit

The Declared Unit (DU) is 1m² of product with unit weight in gr/m².

System Boundaries

The system boundaries take into account for each product are divided into three modules: Upstream module, which contains the processes “upstream” of the company, called “from cradle to gate” and generally regarding the supply chain; Core module, which contains the manufacturing processes of the product which take place within the company boundaries called “from gate to gate”; Downstream module, called “form gate to grave”, which contains the product scenarios from the moment it leaves the company gate and ends its “life”, such as the distribution phase and the end of life.

¹ CML-IA baseline method January 2016; CML-IA non baseline method (acidification fate not included) January 2016, IPCC 2013 (Global warming), RECIPE Midpoint v.1.13 (2008) for POCP, CML-baseline v.3.05 for Abiotic Depletion elements and fossil fuels, AWARE v.1.01 for Water Scarcity Potential and CED v.1.10 per Primary Energy Resources.

UPSTREAM MODULE

The *Upstream module* processes are:

- Production of the raw materials needed for the different compounds;
- Production of the fabric;
- Production of the paper support (reusable);
- Production of primary packagings for the raw materials, fabric and paper support;
- Production of (primary e secondary) packaging for the final product.

CORE MODULE

The *Core module* processes are:

- Transports from the producers of raw materials, fabric, paper support and packagings to the production plant;
- The energy (electricity and thermal energy)² and water consumptions and the emissions in all the production phases;
- Scraps and wastes generated in this module and their end of life treatment.

DOWNSTREAM MODULE

The *Downstream module* processes are:

- Distribution transports of the final product;
- End of life treatment of the product packaging;
- End of life treatment of the product.

According to the product specific requirements, the following exclusions from the system boundaries are made:

- The company building construction and the related infrastructures;
- The equipment production;
- The maintenance and the production of spare parts with a life cycle of more than three years;
- Employees activities and trips.

The following figure (fig.1) shows the production flows and the system boundaries take into account for the Life Cycle Assessment of each product, divided in the three modules: *Upstream module*, *Core module* e *Downstream module*.

² The energy consumption for the lighting and warming of premises.

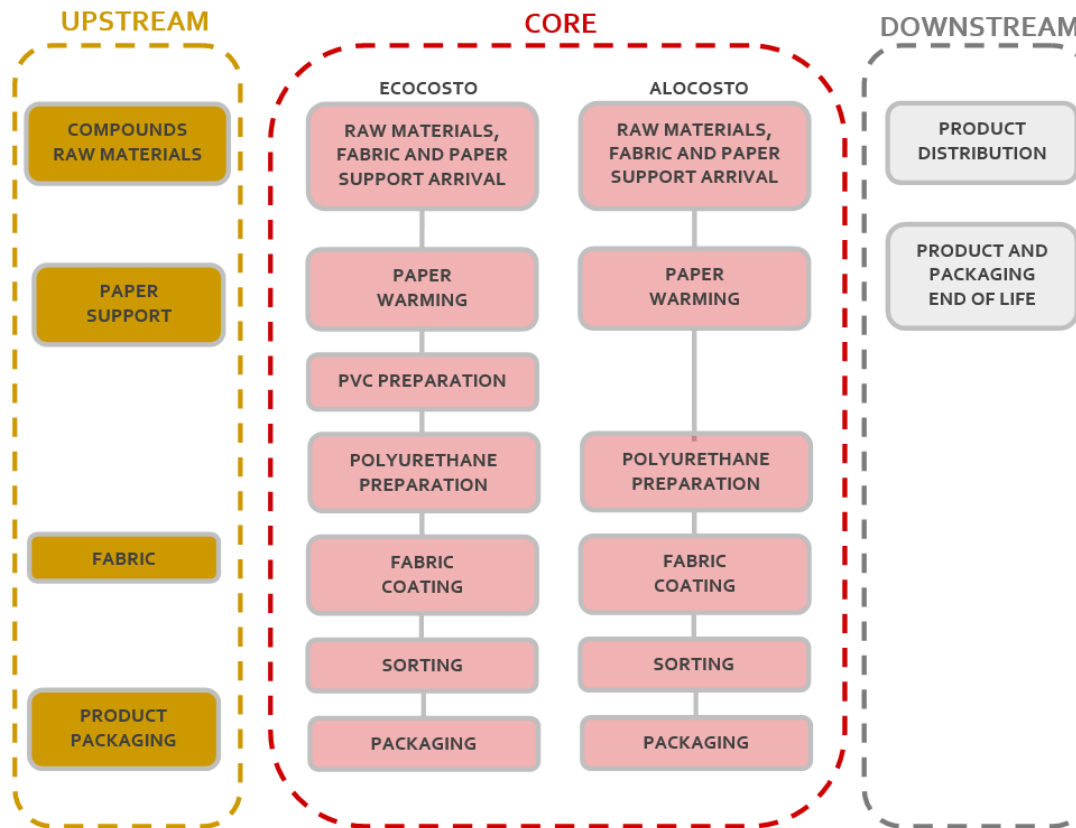


Fig. 1- Production flows and LCA system boundaries

Data quality

Data can be “specific”, “generic” or “proxy data”. Specific data provided by SPAC are used for the *Core module* and the data reference year of production is 2019. *Upstream module* data are provided by the supply chain. For the *Downstream module*, the distribution information are based on specific data, while the product and packaging end of life are based on scenarios and therefore refer to generic data. Proxy data do not exceed the 10% on each category. The electricity used by SPAC comes from the national grid mix. The LCA database used is Ecoinvent v. 3.6 (2019).

Potential environmental impacts, use of resources, waste generation and output flows

The analysis results are shown for the three modules: UPSTREAM MODULE (UPSTREAM), CORE MODULE (CORE), DOWNSTREAM MODULE (DOWNSTREAM) for each product.

The results are referred to the Declared Unit of 1m².

See the following legend for acronyms. [Note: 6,1E-01 = 0,61 e 1,00E+0 = 1].

LEGENDA	
ENVIRONMENTAL IMPACTS	
Global Warming Potential ₁₀₀	GWP ₁₀₀
Fossil	Fossil
Biogenic	Bio
Land use and land transformation	Land Use
Acidification Potential	AP
Eutrophication Potential	EP
Formation Potential of Tropospheric Ozone	POCP
Abiotic Depletion Potential – Elements	ADPe
Abiotic Depletion Potential – Fossil Fuels	ADPff
Water Scarcity Footprint	WSF
INDICATORS OF USE OF PRIMARY AND SECONDARY RESOURCES	
Primary energy resources -Renewable	PERR
Used as energy carrier	energy carrier
Used as raw material	raw material
Primary energy resources- Non-renewable	PERNR
Used as energy carrier	energy carrier
Used as raw material	raw material
Secondary material	SM
Renewable secondary fuels	RSF
Non-renewable secondary fuels	NRSF
Net use of fresh water	FW
WASTE PRODUCTION AND OUTPUT FLOWS	
Hazardous waste disposed	HWD
Non-waste disposed	NHWD
Radioactive waste disposed	RWD
Components for reuse	CFR
Materials for recycling	MFR
Materials for energy recovery	MFER
Exported energy, electricity	EEE
Exported energy, thermal	EET

Ecocosto 199/10 HTG 13-10

INDICATORI			TOTALE	UPSTREAM	CORE	DOWNSTREAM
GWP ₁₀₀	Fossil	kg CO ₂ eq	1,11E+01	8,44E+00	1,66E+00	1,04E+00
	Bio		4,08E-02	1,46E-02	2,72E-03	2,35E-02
	Land use		1,50E-02	1,48E-02	5,58E-05	9,86E-05
	Total		1,12E+01	8,47E+00	1,66E+00	1,07E+00
AP		kg SO ₂ eq	3,99E-02	2,96E-02	7,54E-03	2,72E-03
EP		kg PO ₄ ---eq	1,33E-02	9,58E-03	1,67E-03	2,01E-03
POCP		kg NMVOC eq	3,37E-02	2,20E-02	8,92E-03	2,80E-03
ADPe		kg Sb eq	1,93E-05	1,73E-05	1,35E-07	1,90E-06
ADPff		MJ	1,60E+02	1,29E+02	2,25E+01	7,61E+00
WSF		m ³ eq	4,10E+00	3,30E+00	1,93E-01	6,08E-01
PERR	Energy carrier	MJ	6,86E+00	6,02E+00	7,25E-01	1,13E-01
	Raw material		0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Total		6,86E+00	6,02E+00	7,25E-01	1,13E-01
PERNR	Energy carrier		1,81E+02	1,45E+02	2,79E+01	8,22E+00
	Raw material		2,89E-02	2,89E-02	0,00E+00	0,00E+00
	Total		1,82E+02	1,45E+02	2,79E+01	8,22E+00
SM		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW		m ³	2,55E-02	7,38E-03	1,84E-03	1,62E-02
HWD		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NHWD		kg	6,32E-01	0,00E+00	1,10E-01	5,22E-01
RWD		kg	2,53E-04	1,19E-04	8,04E-05	5,28E-05
CFR		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR		kg	2,61E-01	4,58E-04	1,20E-01	1,41E-01
MFER		kg	5,08E-01	0,00E+00	0,00E+00	5,08E-01
EEE		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Tab. 2-Potential impacts, use of resources, waste and output flows EcoCosto 199/10 HTG 13-10 [DU: 1m²]

EcoCosto 199/16 AC 15-10

INDICATORI			TOTALE	UPSTREAM	CORE	DOWNSTREAM
GWP ₁₀₀	Fossil	kg CO ₂ eq	6,68E+00	3,74E+00	1,77E+00	1,17E+00
	Bio		3,64E-02	1,03E-02	2,79E-03	2,33E-02
	Land use		1,83E-01	1,83E-01	5,95E-05	1,94E-04
	Total		6,90E+00	3,93E+00	1,77E+00	1,19E+00
AP		kg SO ₂ eq	3,28E-02	2,21E-02	7,48E-03	3,17E-03
EP		kg PO ₄ ---eq	1,76E-02	1,36E-02	1,73E-03	2,30E-03
POCP		kg NMVOC eq	2,41E-02	1,20E-02	8,83E-03	3,21E-03
ADPe		kg Sb eq	1,53E-05	1,38E-05	1,45E-07	1,40E-06
ADPff		MJ	9,65E+01	6,37E+01	2,40E+01	8,81E+00
WSF		m ³ eq	1,25E+01	1,19E+01	2,12E-01	3,56E-01
PERR	Energy carrier	MJ	1,83E+01	1,74E+01	7,92E-01	1,89E-01
	Raw material		0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Total		1,83E+01	1,74E+01	7,92E-01	1,89E-01
PERNR	Energy carrier		1,17E+02	7,71E+01	2,98E+01	9,65E+00
	Raw material		3,73E-02	3,73E-02	0,00E+00	0,00E+00
	Total		1,17E+02	7,71E+01	2,98E+01	9,65E+00
SM		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW		m ³	1,29E-02	4,07E-03	2,02E-03	6,81E-03
HWD		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NHWD		kg	6,92E-01	0,00E+00	1,20E-01	5,72E-01
RWD		kg	3,11E-04	1,65E-04	8,58E-05	5,95E-05
CFR		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR		kg	2,61E-01	4,17E-04	1,20E-01	1,41E-01
MFER		kg	5,58E-01	0,00E+00	0,00E+00	5,58E-01
EEE		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Tab. 3- Potential impacts, use of resources, waste and output flows EcoCosto 199/16 AC 15-10 [DU: 1m²]

AloCosto 017/18 CA 12-10

INDICATORI			TOTALE	UPSTREAM	CORE	DOWNSTREAM
GWP ₁₀₀	Fossil	kg CO ₂ eq	6,73E+00	4,26E+00	1,68E+00	7,90E-01
	Bio		3,77E-02	1,23E-02	2,72E-03	2,27E-02
	Land use		8,23E-02	8,22E-02	5,59E-05	9,96E-06
	Total		6,85E+00	4,36E+00	1,68E+00	8,13E-01
AP		kg SO ₂ eq	3,05E-02	2,15E-02	7,20E-03	1,84E-03
EP		kg PO ₄ ---eq	1,08E-02	8,65E-03	1,65E-03	4,74E-04
POCP		kg NMVOC eq	2,52E-02	1,43E-02	8,69E-03	2,21E-03
ADPe		kg Sb eq	7,99E-06	7,76E-06	1,36E-07	9,03E-08
ADPff		MJ	8,64E+01	5,87E+01	2,28E+01	4,89E+00
WSF		m ³ eq	6,79E+00	6,58E+00	1,93E-01	1,37E-02
PERR	Energy carrier	MJ	1,04E+01	9,63E+00	7,24E-01	1,29E-02
	Raw material		0,00E+00	0,00E+00	0,00E+00	0,00E+00
	Total		1,04E+01	9,63E+00	7,24E-01	1,29E-02
PERNR	Energy carrier		1,04E+02	7,07E+01	2,81E+01	5,22E+00
	Raw material		3,92E-01	3,92E-01	0,00E+00	0,00E+00
	Total		1,04E+02	7,11E+01	2,81E+01	5,22E+00
SM		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW		m ³	4,13E-03	2,15E-03	1,83E-03	1,48E-04
HWD		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NHWD		kg	4,97E-01	0,00E+00	1,20E-01	3,77E-01
RWD		kg	1,95E-04	7,75E-05	8,24E-05	3,47E-05
CFR		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR		kg	2,64E-01	3,56E-03	1,20E-01	1,41E-01
MFER		kg	3,63E-01	0,00E+00	0,00E+00	3,63E-01
EEE		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET		MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Tab. 4- Potential impacts, use of resources, waste and output flows 017/18 CA 12/10 [DU: 1m²]

ADDITIONAL ENVIRONMENTAL INFORMATION

Recycling declaration

Waste deriving from the packaging of SPAC products can be treated as municipal solid waste under local regulations. Therefore, each waste component must be collected separately when possible; plastic and cardboard, should be sent to recovery and recycling facilities rather than being disposed in landfill.

Certifications

Quality ISO 9001 and IATF 16949, environment ISO 14001 and occupational health and safety OHSAS 18001.

Environmental policy

SPAC believes that is possible producing in a safe and environmentally sustainable manner and is always focusing on the environmental impact and employee's safety.

SPAC constantly improves the production performances according to current legislations and other voluntary regulations. This contributes to increase a competitive value always maintaining a transparent and faithful profile towards the involved parts (customers, suppliers, employees, Province, Region, etc.).

In order to improve the environmental and safety performances aimed to a sustainable development, SPAC undertakes to:

- Satisfy conformity regulations and obligations applicable in environmental field. In particular Regional environmental authorization and safety obligations;
- Look for new raw materials in order to improve environmental emissions and waste disposal;

- Confer to the final product an ecological aspect;
- Search eco-friendly processes in order to reduce waste materials;
- Guarantee competence and knowhow of human resources in order to ensure a correct environmental and safety management;
- Guarantee human and instrumental resources for a continuous technical research, focusing on the improvement of products and processes; for the prevention of every possible source of environmental pollution;
- Constantly improve environmental and safety performances and the working place, as regards safety, healthiness and interpersonal relationships encouraging guidelines for the realization.

Scope

Italy-Europe-Central America

PROGRAMME AND AUDIT INFORMATION

Programme operator: EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: info@environdec.com.

EPD® within the same product category, but coming from different programs, may not be compared.

SPAC SpA has the sole ownership, liability and responsibility of the EPD®.

Product Category Rules (PCR): PCR 2011:06 "Nonwovens for clothing, protective clothing and upholstery" v. 3.01, 2019-09-06

The review of the PCR document was conducted by: *The Technical Committee of the International EPD® System*, Review chair: Paolo Simon Ostan. Contact via info@environdec.com

Independent verification of the declaration and data, according to ISO 14025:2006:

☐ EPD process certification ☒ EPD verification



Third party verifier: Certiquality srl, via Gaetano Giardino n.4, 20123 - Milano, www.certiquality.it, Accredited by: Accredia, certificate n. 003H rev.15

Data follow-up procedure during the EPD® validity involves the third party verifier:

☐ Yes ☒ No

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Bibliography

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- LCA-lab srl, "Life Cycle Assessment di tessuti spalmati in plastica per il settore automotive di SPAC SpA", RT-214 rev.01 del 22/10/2020, Bologna.
- Product Category Rules "Nonwovens for clothing, protective clothing and upholstery" version 3.01, 2019-09-06; downloadable from www.environdec.com.
- General Programme Instructions of The International EPD® system version 3.01, 2019-09-18, downloadable from www.environdec.com.



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