Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Sealed Air® brand Opti-Step® 1003

from

SEE
Automation • Digital • Packaging

Programme:	**The International EPD® System,**
Programme operator:	EPD International AB
EPD registration number:	S-P-11207
Publication date:	2023-12-29
Valid until:	2028-12-28
Revision	Rev. 0

EPD of multiple products thickness (2 mm and 3 mm), based on worst-case results.
EPDs within the same product category but from different programmes may not be comparable.
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.

General information

Programme:	**The International EPD® System**
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
CPC code: *3691 - Floor coverings of plastics, in rolls or in the form of tiles; wall or ceiling coverings of plastics*
PCR review was conducted by: Martin Erlandsson, IVL Swedish Environmental Research Institute, martin.erlandsson@ivl.se

Life Cycle Assessment (LCA)

LCA accountability: SEE, laura.passerini@sealedair.com

Third-party verification

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

X EPD verification by EPD Process Certification*

Third-party verification DNV Business Assurance Italia S.r.l. is an approved certification body accountable for third-party verification
Third-party verifier is accredited by: ACCREDIA (Registration number 008H rev.01)

*For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI.

Procedure for follow-up of data during EPD validity involves third-party verifier:
Yes X No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.
EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, 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. For further information about comparability, see EN 15804 and ISO 14025

Company information

Owner of the EPD:

SEE
Sealed Air Corporation
2415 Cascade Pointe Boulevard
Charlotte, NC 28208

Contact for the EPD:
laura.passerini@sealedair.com

Name and location of production site:

Aneby SEE plant

Sealed Air Svenska AB,
Patorpsvagen 2,
S-578 33 Aneby (Sweden)

Product-related or management system-related certifications

qValify

CERTIFICATE

This is to certify that

Sealed Air Svenska AB

556209-8979

Påtorpsvägen 2, Aneby, Sweden

has established and applied a management system according to

ISO 9001:2015

regarding

Manufacturing of polyethylene foam and similar products for shock absorption and scratch protection as well as insulation.

The certificate is valid provided that Qvalify AB:s certification rules are fulfilled.

Jönköping 2021-05-24

Carina Björsell
On behalf of Qvalify AB

Certificates of Origin issued:
ISO 9001 1996-04-25

qValify ISO 9001

Cert no. 1147 *Valid until 2024-05-31* *www.qvalify.se*

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

Company information

Headquartered in Charlotte, North Carolina, SEE **is a global company that designs and produces digital, automated and packaging solutions**. The company partners with leading brands to address their critical challenges and protect essential resources including fresh food, health-care products, liquids, and other valuable goods as they are transported and marketed to consumers worldwide.

Capitalizing on its industry-leading expertise in technology, science, and engineering, SEE is transforming the industries it serves with solutions that enable e-commerce and digital connectivity across the value chain and promote a safer, more resilient, and less wasteful global food supply chain.

https://www.sealedair.com/company/our-company/who-we-are

Company information

SEE's Net Positive approach is about innovating to deliver new market-centric solutions that are creating environmental, social, and economic value that largely exceed their investment. We are achieving Net Positive outcomes through **our four strategic sustainability pillars** focused on

1. solving customer challenges,
2. mitigating climate change,
3. accelerating a circular economy,
4. and partnering to transform through innovations.

Our report shows our top priorities and progress including our company's:

- Zero-harm strategy for the well-being of our people, facilities, and customers
- Leadership in Diversity, Equity, and Inclusion
- Innovations and investments for sustainable solutions
- Advancement in our 2025 Sustainability and Materials Pledge
- Accelerated progress toward our Net Zero by 2040 commitment

https://www.sealedair.com/company/corporate-responsibility-esg

Product information

- **PRODUCT NAME: Sealed Air® Brand Opti-Step® 1003**
- **UN CPC CODE:** 36390*: Other plates, sheets, film, foil, and strip, of plastics.*
- **GEOGRAPHICAL SCOPE:** Europe
- **PRODUCT DESCRIPTION:** Sealed Air® brand Opti-Step® is a flooring underlayment for floor systems.
- **APPLICATIONS:** It's for both residential and commercial applications for sound absorption and moisture resistance. Supplied in both a retail roll for the DIY market and jumbo rolls to service professional flooring installers.

- **DECLARED UNIT:**
  1 m^2 of Sealed Air® Brand Opti-Step® 1003 having the weight of 90 grams.

Product	Grammage [g/m^2]
Sealed Air® Brand Opti-Step® 1003	**90**

The mass is indicated in the table as grammage (g/m^2)

*Sealed Air is a registered trademark of SEE -Sealed Air Corporation

Technical Data Sheet, 3 mm

Opti-Step® 1003

PRODUCT SPECIFICATION SHEET
POLYETHYLENE FOAM FLOOR UNDERLAYMENT
FOR LAMINATE AND WOODEN FLOOR

CS	CC	R	SD	IS	PC	RLB	EMISSION VALUE
							
>20kPa	>2kPa	<0,06 m²K/W	>12m	≥19dB	1,3mm	800mm	

Physical Properties*	Test Method	Unit	Value	Tolerances
Nominal Density	ISO 845	Kg/m³	30	± 15%
Area Weight (AW)	EN 1923	gr/m²	90	± 15%
Thickness (t)	EN 823 + A.3.1	mm	3	± 15%
Length (l)	EN 822 + A.3.3	m	15-150	-0%, +5%
Width (w)	EN 822 + A.3.3	mm	1000-1500	-1%, +2.5%
Compression Strength (CS)	EN826 + A.3.7.	kPa	>20	-
Compressive Creep (CC)	EN 1606 + A.3.8	kPa	>2	-
Punctual Conformability (PC)	EN 869 + A.3.6	mm	1,3	-
Resistance to Impact by Large Diameter Ball (RLB)	EN 13329	mm	800	-
Thermal Resistance (R)	EN 12667	m²K/W	0,06	-
Moisture Resistance (SD)	EN 12086, Method A	m	>12	-
Impact Sound Reduction (IS)	EN ISO 10140-3 EN ISO 717-2	ΔLw in dB	≥19	-
Emission of Formaldehyde and VOC	EN ISO 16000-9		Class A+	-
Alkaline Resistance (AR)	EN 14909	Pass or Fail	Pass	-
Ageing Resistance	SP0414 / ISO 1798	years	50	-
Compression Strength (4th compr.) 25% 50%	ISO 3386	kPa	>18 >54	-

*All above according to EN 16354:2018. Fulfils the requirements for the EU floor Underlay standard.

Technical Data Sheet, 2mm

Opti-Step® 1003

PRODUCT SPECIFICATION SHEET
POLYETHYLENE FOAM FLOOR UNDERLAYMENT
FOR LAMINATE AND WOODEN FLOOR

CS	CC	R	SD	IS	PC	RLB	EMISSION VALUE
							
›20kPa	›2kPa	‹0,04 m²K/W	›8m	≥19dB	1,3mm	800mm	

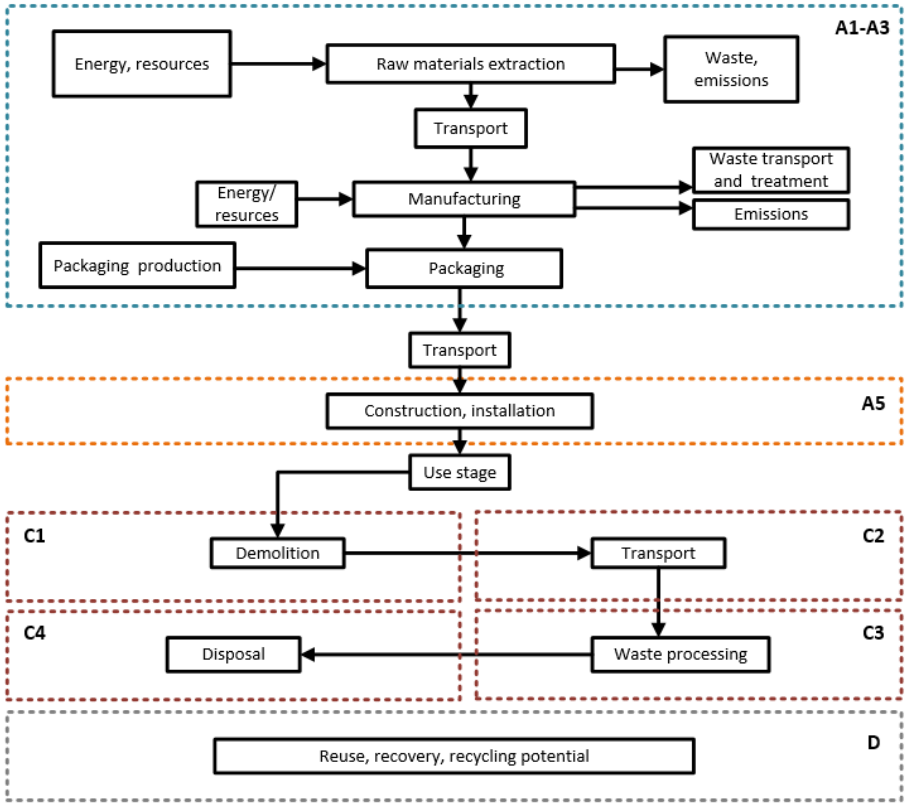
Physical Properties*	Test Method	Unit	Value	Tolerances
Nominal Density	ISO 845	Kg/m³	30	± 15%
Area Weight (AW)	EN 1923	gr/m²	60	± 15%
Thickness (t)	EN 823 + A.3.1	mm	2	± 15%
Length (l)	EN 822 + A.3.3	m	15-150	-0%, +5%
Width (w)	EN 822 + A.3.3	mm	1000-1500	-1%, +2.5%
Compression Strength (CS)	EN826 + A.3.7.	kPa	›20	-
Compressive Creep (CC)	EN 1606 + A.3.8	kPa	›2	-
Punctual Conformability (PC)	EN 869 + A.3.6	mm	1,3	-
Resistance to Impact by Large Diameter Ball (RLB)	EN 13329	mm	800	-
Thermal Resistance (R)	EN 12667	m²K/W	0,04	-
Moisture Resistance (SD)	EN 12086, Method A	m	›8	-
Impact Sound Reduction (IS)	EN ISO 10140-3 EN ISO 717-2	ΔLw in dB	≥19	-
Emission of Formaldehyde and VOC	EN ISO 16000-9		Class A+	-
Alkaline Resistance (AR)	EN 14909	Pass or Fail	Pass	-
Ageing Resistance	SP0414 / ISO 1798	years	50	-
Compression Strength (4th compr.) 25% 50%	ISO 3386	kPa	›18 ›54	-

*All above according to EN 16354:2018. Fulfils the requirements for the EU floor Underlay standard.

LCA information

DECLARED UNIT: **1 m² of Sealed Air® Brand Opti-Step® 1003, having the weight of 90g.**
SYSTEM BOUNDARIES: cradle to gate with options (modules A1-A3, A5, C1-C4 and module D)
REFERENCE SERVICE LIFE: the RSL corresponds to the life of the buildings where the product is installed, and assumed to be 50 years.
TIME REPRESENTATIVENESS: 2022
DATABASE(S) AND LCA SOFTWARE USED: SimaPro v9.5 software and Ecoinvent v3.9.1 database

SYSTEM DIAGRAM:



PRIMARY DATA: all the primary data were collected for the production year 2022 in the manufacturing site of Aneby (Sweden) and refer the technology used in that year.
LCI data shall according to EN 15804 include a minimum of 95% of total inflows (mass and energy) per module (e.g. A1-A3, A5, C1-C4 and module D).

PROXY DATA: proxy data, do not exceed 10% of the overall environmental impact, as per PCR of reference.

ENERGY MIX USED FOR CORE PHASE: Renewable mix from hydropower certified by Supplier. GWP-GHG of the electricity mix: 0.02136 $KgCO_2eq/kWh$

CUT-OFF: Elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts are included (no processes within the boundaries are excluded).

END OF LIFE TREATMENTS: disposal scenario for construction materials, corresponding to 100% landfill. The result of phase D is zero, because no end-of-life benefits comes from recycling, recovery and/or reuse.

ALLOCATIONS PROCEDURE: mass allocation used for all input/output processes linked to SEE activities. Economic allocation for principal products flows coming from other products systems.

DESCRIPTION OF SYSTEM BOUNDARIES: cradle to gate with options (modules A1-A3, A5, C1-C4 and module D)

A1:

- Extraction and processing of raw materials;
- Reuse of products or materials from a previous product system,
- Processing of secondary materials
- Generation of electricity, steam and heat from primary energy resources,
- Transport of resources to refinement;
- Refinement of resources and polymers production;
- Energy recovery and other recovery processes from secondary fuels

A2:

- Transportation up to the factory gate and internal transport

A3:

- Production of ancillary materials or pre-products;
- All the manufacturing processes necessary to generate the product, including
  - extrusion, printing, perforation, winding
  - scrap and waste handling
- Electricity used in manufacturing processes
- Warehousing, storage and handling of materials, storage and packaging of final product;
- Maintenance of equipment;
- Packaging manufacturing
- Processing up to the end-of-waste state or disposal of final residues including any packaging not leaving the factory gate with the product.

A5:

- Construction, installation

C1:

- Deconstruction, including dismantling or demolition, of the product from the building, including initial on-site sorting of the materials;

C2:

- Transportation of waste to final disposal

C3:

- Waste processing for reuse, recovery and/or recycling

C4:

- Disposal

D:

- Benefits and loads beyond the product system boundary

The technical system does not include:

- Manufacturing of production equipment, buildings, and other capital goods;
- Business travel of personnel;
- Travel to and from work by personnel.

MODULES DECLARED, GEOGRAPHICAL SCOPE, SHARE OF SPECIFIC DATA (IN GWP-GHG RESULTS) AND DATA VARIATION (IN GWP-GHG RESULTS):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	SE	-	EU27	-	-	-	-	-	-	-	EU27	EU27	EU27	EU27	EU27
Specific data used	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	33%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	Not Relevant					-	-	-	-	-	-	-	-	-	-	-	-

Content Declaration

PRODUCT

Opti-Step® 1003 is composed by PE and PE based masterbatches.

Product components	Weight %	Environmental / hazardous properties
LDPE	98	polymer
Additives MB in LDPE	2	processing aids

DISTRIBUTION PACKAGING

Opti-Step® 1003 may have different packaging configurations. The one with the highest packaging vs product ratio was selected as a worst-case approach.

Packaging components	Weight %	Environmental / hazardous properties
carton box	30	cardboard
pallet	70	wood

SVHC DECLARATION

Opti-Step® 1003 is not produced with intentional addition of Substances of Very High Concern (SVHC), update of 14th June 2023 and therefore, SVHC are not expected to be present above 0.1% threshold in the product.

Biogenic CO2 contained in packaging is on avg 0.73Kg/Kg carton and 0.5Kg/Kg wood.
This packaging configuration contains 22 biogenic CO_2 per 1 m^2 of product.

Results of the environmental performance indicators

Impact category indicators

PARAMETER		UNIT	A1-A3	A5	C1	C2	C3	C4	D
Global warming potential (GWP)	Fossil	kg CO2 eq	2.09E-01	1.82E-04	0.00E+00	3.02E-03	0.00E+00	9.24E-04	0.00E+00
	Biogenic	kg CO2 eq	-1.96E-02	2.48E-02	0.00E+00	4.16E-07	0.00E+00	6.49E-07	0.00E+00
	Land use and land transformation	kg CO2 eq	1.22E-03	1.35E-07	0.00E+00	3.82E-07	0.00E+00	2.84E-07	0.00E+00
	TOTAL	kg CO2 eq	1.91E-01	2.50E-02	0.00E+00	3.02E-03	0.00E+00	9.25E-04	0.00E+00
Ozone layer depletion (ODP)		kg CFC 11 eq.	2.90E-09	4.41E-12	0.00E+00	4.62E-11	0.00E+00	2.56E-11	0.00E+00
Acidification potential (AP)		mol H^+ eq.	8.11E-04	1.39E-06	0.00E+00	1.62E-05	0.00E+00	5.01E-06	0.00E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	4.59E-05	3.40E-08	0.00E+00	5.52E-08	0.00E+00	5.12E-08	0.00E+00
	Aquatic marine	kg N eq.	2.12E-04	5.98E-06	0.00E+00	7.02E-06	0.00E+00	2.12E-06	0.00E+00
	Aquatic terrestrial	mol N eq.	1.82E-03	5.15E-06	0.00E+00	7.60E-05	0.00E+00	2.27E-05	0.00E+00
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	6.30E-03	2.47E-06	0.00E+00	2.97E-05	0.00E+00	8.66E-06	0.00E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	9.91E-07	3.88E-10	0.00E+00	1.90E-09	0.00E+00	1.69E-09	0.00E+00
	Fossil resources	MJ, net calorific value	7.11E+00	3.38E-03	0.00E+00	3.87E-02	0.00E+00	1.86E-02	0.00E+00
Water deprivation potential (WDP)*		m^3 world eq. deprived	2.04E-01	1.55E-04	0.00E+00	7.31E-05	0.00E+00	7.16E-05	0.00E+00
GWP-GHG**		kg CO2 eq	2.13E-01	3.27E-03	0.00E+00	3.02E-03	0.00E+00	9.25E-04	0.00E+00

*The results of this environmental impact indicator shall be used with care as the uncertainties of the results are high and as there is limited experience with the indicator.

**This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Impact category indicators

PARAMETER		UNIT	A1-A3	A5	C1	C2	C3	C4	D
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1.38E+00	7.95E-05	0.00E+00	1.51E-04	0.00E+00	4.60E-04	0.00E+00
	Used as raw materials	MJ, net calorific value	5.00E-01	-4.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	MJ, net calorific value	1.88E+00	-4.75E-01	0.00E+00	1.51E-04	0.00E+00	4.60E-04	0.00E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	7.11E+00	3.38E-03	0.00E+00	3.87E-02	0.00E+00	1.86E-02	0.00E+00
	Used as raw materials	MJ, net calorific value	4.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	MJ, net calorific value	1.11E+01	3.38E-03	0.00E+00	3.87E-02	0.00E+00	1.86E-02	0.00E+00
Secondary material		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water		m^3	3.39E-03	4.11E-06	0.00E+00	2.58E-06	0.00E+00	1.66E-05	0.00E+00

Waste indicators

PARAMETER	UNIT	A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3.18E-02	1.54E-08	0.00E+00	2.60E-07	0.00E+00	9.59E-08	0.00E+00
Non-hazardous waste disposed	kg	5.57E-06	3.82E-02	0.00E+00	1.94E-04	0.00E+00	9.03E-02	0.00E+00
Radioactive waste disposed	kg	0.00E+00	1.42E-09	0.00E+00	2.80E-09	0.00E+00	5.44E-09	0.00E+00

Output flow indicators

PARAMETER	UNIT	A1-A3	A5	C1	C2	C3	C4	D
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	3.05E-03	2.61E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	9.27E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ per energy carrier	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional Environmental information

Opti-Step® 1003 is produced in two different thicknesses, 2 and 3 mm.

In alignment with the PCR (5.4.6.1), conversion factors may be included in an EPD for the purposes of converting the declared results of a product group to results for specific products within the group.

The environmental impact of Opti-Step® 1003, 2mm thick, can be obtained multiplying by 0.67 the values of Opti-Step 3 mm.

Differences versus previous versions

2023 12 29 First issue

References

- ISO 14040:2006, Environmental Management - *Life Cycle Assessment - Principles and Framework* International Organization for Standardization, Geneve, Switzerland.
- ISO 14040:2006/AMD 1:2020 - Environmental management — *Life cycle assessment — Principles and framework — Amendment 1,* International Organization for Standardization, Geneve, Switzerland
- ISO 14044:2006. Environmental Management - *Life Cycle Assessment – Requirements and Guidelines*, International Organization for Standardization, Geneve, Switzerland.
- ISO 14044:2006/AMD 1:2017, Environmental Management - *Life Cycle Assessment - Requirements and Guidelines - Amendment 1 2017* International Organization for Standardization, Geneve, Switzerland.
- ISO 14044:2006/AMD 2:2020, Environmental Management - *Life Cycle Assessment - Requirements and Guidelines - Amendment 2 2020* , International Organization for Standardization, Geneve, Switzerland.
- ISO 14025:2006, Environmental labels and declarations - *Type III environmental declarations – Principles and procedures, ISO 14025:2006*, International Organization for Standardization, Geneve, Switzerland.
- ILCD handbook, International Reference Life Data System, General guide for Life Cycle Assessment –Detailed guidance, JRC European Commission
- PCR 2019:14 “Construction” version 1.3.1 dated 2023-07-08, www.environdec.com
- General Programme Instructions for the International EPD System, version 4.0, dated 2021-03-29, www.environdec.com
- Central Product Classification (CPC) Series M No. 77, Ver.2.1 https://unstats.un.org/unsd/classifications/Econ/search
- http://www.assosistema.it/wp-content/uploads/2015/05/Lyfe-Cycle-Assessment-sui-prodotti-tessili.pdf
- Plastics RecyclersEurope (*https://www.plasticsrecyclers.eu/wp-content/uploads/2022/10/flexible-films-market.pdf*)
- Plastics Europe (*https://plasticseurope.org/knowledge-hub/plastics-the-facts-2022/*).
- Michael Ioelovich. Energy Potential of Natural, Synthetic Polymers and Waste Materials - A Review. Academ J Polym Sci. 2018; 1(1): 555553. DOI: 10.19080/AJOP.2018.01.555553
- 20231219 LCA Report_OptiStep1003_e1r0.xls

Visit our website
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www.sealedair.com