Environmental Product Declaration

In accordance with ISO 14025:2006 for:

XLPE compound siloxane 1 step (KTT120PA)
from
POLYCOM COMPANY LIMITED

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-09072
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Programme information

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

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: *PCR2010:16 VERS. 3.02 and UN CPC 347*
PCR review was conducted by: *Technical Committee of the International EPD System*
Life Cycle Assessment (LCA)
LCA accountability: *Le Van Tam, SIS CERT COMPANY LIMITED*
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: Sergio A. Ballén Zamora, Constructora Acuario Ltda. Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third-party verifier: ☒ Yes ☐ No

EPDs within the same product category but registered in different EPD programmes may not be comparable.

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

This Environmental Product Declaration (EPD) has been developed in accordance with the International EPD System and the specific requirements outlined in Product Category Rules (PCR). We confirm that this EPD does not duplicate any other EPD developed for the same product and has not been submitted to any other EPD program. Additionally, we declare that this EPD complies with ISO 14020, which ensures that it has been developed using a rigorous, transparent, and consistent methodology to provide credible and scientifically sound information about the environmental performance of the product.

Company information

Owner of the EPD:
POLYCOM COMPANY LIMITED
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To get more information about this environmental declaration or about POLYCOM activities please contact:
info@polycomplastic.com

Description of the organisation:
POLYCOM CO., LTD- an XLPE manufacture brand- was established in 2006. Polycom has been constantly growing and growing, reaching the Vietnam No. 1 and becoming to the top of Asia of XLPE manufacture. This result is derived from the heart. The founder's desire to create a standardized enterprise that is admired by the community based on core values.
The company's products with fine lines are rich in aesthetics, convenient and durable features, are manufactured from modern equipment and the production process is strictly controlled from the beginning to ensure perfect product quality.
Towards the sustainable development, the company constantly builds talented personnel, standard management system, optimizes the operation process to expand domestic and foreign markets.

- Value for life
- Creativity day by day
- Accountability to society
- Reputation
- Outstanding Quality

The name POLYCOM represents the heart of the Founders. It is the passion and pursuit of the goal: to create products, different values and excellence for everyone. With experience in the field of chemicals of over 15 years from Korea, from a small production team, POLYCOM has leapfrogged to become a leading brand in Vietnam. We have been consistently committed to our goals since its inception
Management system-related certifications: ISO 9001- and 14001-certificates

Name and location of production site: Lot C.II.I-1, Long Thanh Industrial Zone, Tam An Commune, Long Thanh District, Dong Nai Province, Vietnam.

Product information

Product name:
XLPE compound siloxane 1 step (KTT120PA)
Product identification:
POLYCOM SILANE XLPE – SILOXANE® ONE STEP

UN CPC code:
Class 3471 Polymers of ethylene, in primary forms
Geographical scope: Vietnam

Product description:

- KTT120PA is the product code of PolyCom XLPE compound in granule type, used for insulation in low voltage wire and cable production.
- Silane XLPE– one step technology – with KTT120PA code is a main product of PolyCom that mainly made of imported high-quality LLDPE[1] and other suitable additives such as: cross-linking agents, antioxidant, heat stabilizer, etc. and being produced from a closed production process of mixing with other additives.
- KTT120PA consists of all material mixed polyethylene, silane, masterbatch and other additives already mixed.
- KTT120PA has some key features such as: easy-to-use, simple processing steps, high productivity, stable temperature, fast curing time in ambient weather temperature, much efficient for low voltage cable production.

1: LLDPE stands for Linear Low-Density Polyethylene,

Product Specifications

NO.	ITEM		SPEC. IEC60502	MEAS. UNIT	KTT120PA	STANDARD
1.	Density		-	g/cm^3	0.92	ASTM D1505
2.	Melting flow index of polyethylene		-	g/10min	2.8	ASTM D1238
3.	Tensile strength		≥ 12.5	N/mm^2	20	IEC60811-1-1
4.	Elongation at break		≥ 200	%	570	IEC60811-1-1
5.	135°C at 168h Ageing in air Circumstance	Variation of tensile	Max. ±25	%	1.8	IEC60811-1-2
		Variation of elongation	Max. ±25	%	-10	IEC60811-1-2
6.	Hot set elongation 200°C at 0.2MPa, 15min	Elongation under load	Max.175	%	90	IEC60811-2-1
		Permanent deformation after cooling	Max.15	%	7.5	IEC60811-2-1
7.	Water absorption (14 days at 85°C)		≤ 1	mg/cm^2	0	IEC 60811-1-3
8.	Shrinkage (130°C, 1 hour)		≤ 4	%	≤ 4	IEC 60811-1-3
9.	Dielectric constant 20°C, 50Hz		-	-	1.9	IEC 60250
10.	Volume resistivity 20°C		≥ 10^{16}	Ω.cm	≥ 10^{17}	IEC 60093
11.	Volume resistivity 90°C		≥ 10^{12}	Ω.cm	≥ 10^{13}	IEC 60093
12.	Dielectric Strength		-	KV/mm	40	IEC 60243

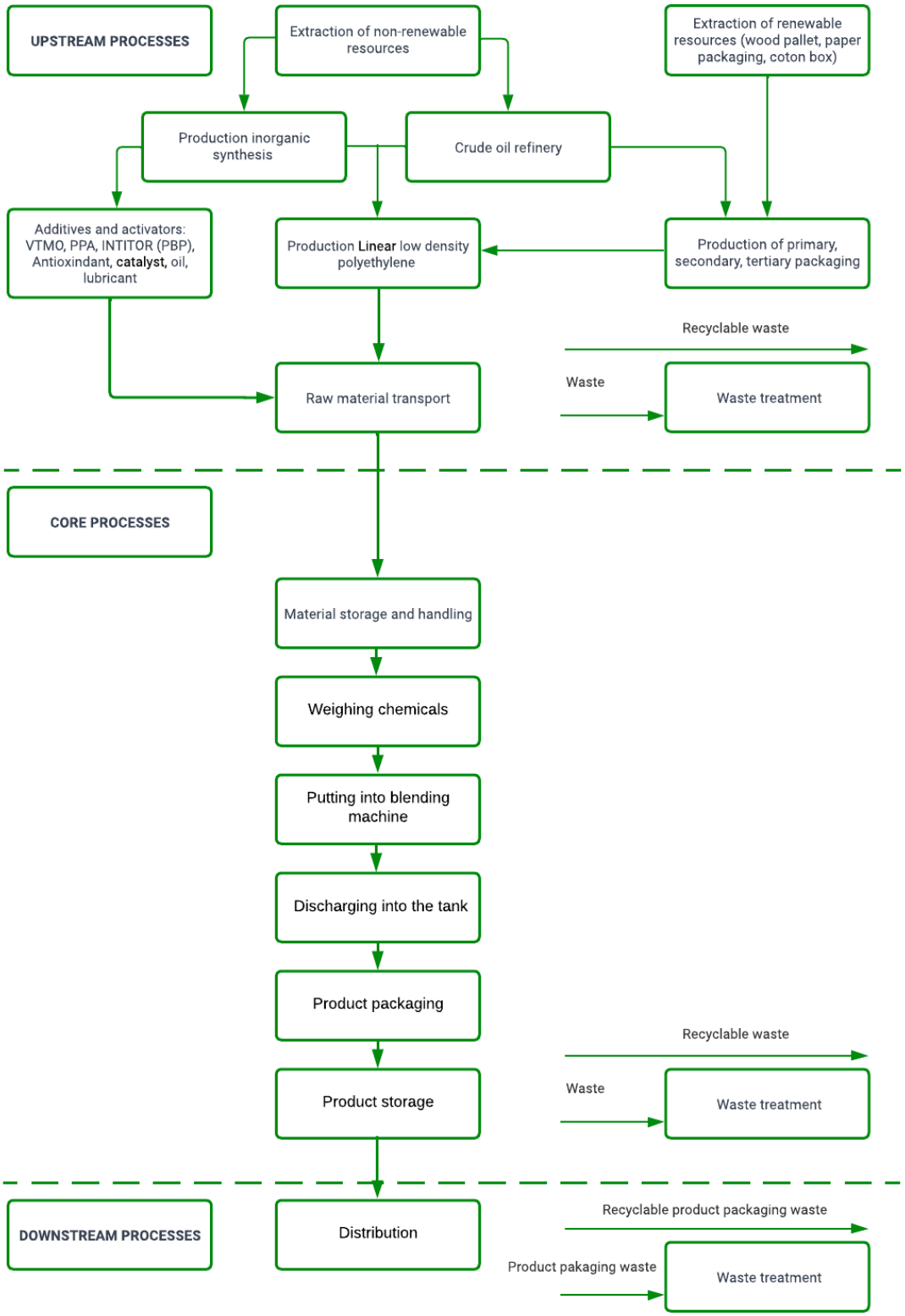
LCA information

Functional unit / declared unit: 1kg of plastic pellet
Time representativeness: The study is based on data representing year-round production. The data is from 2021
Database(s) and LCA software used: The Ecoinvent 3.6, 2019 database and the One Click LCA EPD Generator software: *https://oneclicklcaapp.com/main/*
Description of system boundaries: The scope of the EPD is cradle-to-gate.

Excluded lifecycle stages: Use stage, final disposal
More information: For all Core processes use the Market for electricity, low voltage (Reference product: electricity, low voltage) Ecoinvent 2.6, 2019, country: Vietnam.

For more information please contact: Le Van Tam, Email: tamvan68@gmail.com

System diagram:



Content declaration

Product

Product components	Kg	%	Environmental / hazardous properties
Linear low density Polyethylene	0.979	97.9	NA / no hazardous properties known
Vinyltrimethoxysilane	0.014	1.4	NA / no hazardous properties known
Additives	0.007	0.7	NA / no hazardous properties known
TOTAL	1	100	

Packaging

Distribution packaging:
KTT120PA is packed in two different ways:
In the first method, it is packed into a single vacuumed aluminum net bag weighing 25kg, which is then covered with a layer of Kraft paper on the outside.
In the second method, it is packed into a larger vacuumed aluminum net bag weighing 530kg, which is then covered with a layer of carton Octabin on the outside.

The following table displays the packaging components in detail.

Type	Packaging components	kg of packaging per kg of product
Primary	Aluminum bag	0.006
Secondary	Carton Octabin	0.003
Secondary	Paper bag	0.006
Tertiary	Plastic pallet	0.005
Tertiary	Wood pallet	0.010

Consumer packaging: No consumer packaging

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product: There is no recycled material in the Polycom product

Results of the environmental performance indicators
Impact category indicators

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	3.13E+00	3.18E-01	1.06E-01	6.89E+00
	Biogenic	kg CO_2 eq.	-3.48E-02	-1.36E-02	0.00E+00	-9.68E-02
	Land use and land transformation	kg CO_2 eq.	1.36E-03	4.47E-04	4.39E-05	3.62E-03
	TOTAL	kg CO_2 eq.	3.10E+00	3.04E-01	1.05E-01	6.80E+00
Ozone layer depletion (ODP)		kg CFC 11 eq.	9.19E-06	9.65E-09	2.32E-08	1.84E-05
Acidification potential (AP)		mol H^+ eq.	1.29E-02	2.24E-03	9.49E-04	3.04E-02
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	6.37E-05	1.45E-05	1.00E-06	1.56E-04
	Aquatic marine	kg N eq.	2.69E-03	3.33E-04	2.89E-04	6.04E-03
	Aquatic terrestrial	mol N eq.	2.97E-02	3.60E-03	3.20E-03	6.66E-02
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	1.12E-02	1.02E-03	8.83E-04	2.44E-02
Abiotic depletion potential (ADP)	Metals and minerals	kg Sb eq.	3.69E-05	1.32E-06	2.45E-06	7.65E-05
	Fossil resources	MJ, net calorific value	8.31E+01	3.71E+00	1.57E+00	1.74E+02
Water deprivation potential (WDP)		m^3 world eq. deprived	2.04E+00	3.20E-01	6.13E-03	4.72E+00

Resource use indicators

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1.28E+00	9.33E-01	1.73E-02	4.42E+00
	Used as raw materials	MJ, net calorific value	3.35E-01	1.56E-01	0.00E+00	9.82E-01
	TOTAL	MJ, net calorific value	1.61E+00	1.09E+00	1.73E-02	5.40E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	3.87E+01	3.46E+00	1.57E+00	8.44E+01
	Used as raw materials	MJ, net calorific value	4.44E+01	2.55E-01	0.00E+00	8.93E+01
	TOTAL	MJ, net calorific value	8.31E+01	3.71E+00	1.57E+00	1.74E+02
Secondary material (optional)		kg	5.53E-03	3.30E-04	0.00E+00	1.17E-02
Renewable secondary fuels (optional)		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels (optional)		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water (optional)		m^3	9.13E-03	1.79E-03	2.81E-04	2.18E-02

Waste indicators (optional)

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Hazardous waste disposed	kg	1.16E-01	3.41E-02	2.05E-03	3.00E-01
Non-hazardous waste disposed	kg	3.41E+00	5.38E-01	1.25E-01	7.89E+00
Radioactive waste disposed	kg	9.92E-05	3.06E-06	1.04E-05	2.04E-04

Output flow indicators (optional)

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Components for reuse	kg	INA	INA	INA	INA
Material for recycling	kg	INA	INA	INA	INA
Materials for energy recovery	kg	INA	INA	INA	INA
Exported energy, electricity	MJ per energy carrier	INA	INA	INA	INA
Exported energy, thermal	MJ per energy carrier	INA	INA	INA	INA

References

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ISO 14040 (2006). “Environmental management- Life cycle assessment - Principles and Framework.”

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The International EPD® System The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025. www.environdec.com.

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