Environmental Product Declaration

In accordance with ISO 14025:2006 for:

PA6 G35 OPE NAT NEVIECO

from

NEXEO PLASTICS ITALY Srl

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-07881
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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: *2010:16 Plastics in primary forms, version 3.0.2, CPC 347*
PCR review was conducted by: *Quota Sette S.r.l. and Studio Fieschi*
Life Cycle Assessment (LCA)
LCA accountability: *Ecoinnovazione Srl – c.fontana@ecoinnovazione.it*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☒ EPD verification by accredited certification body Third-party verification: *DNV Business Assurance Italy* is an approved certification body accountable for the third-party verification DNV The certification body is accredited by: ACCREDIA (Registration number 008H rev.01)
Procedure for follow-up of data during EPD validity involves third-party verifier: ☒ Yes ☐ No

EPDs within the same product category but from different programmes may not be comparable.

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

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.

Company information

Owner of the EPD: Nexeo Plastics Italy Srl, Via Maso, 27, 42045 Luzzara (RE), 0522 976421/02.25547060.

Description of the organisation: Nexeo Plastics is a leading global distributor of thermoplastic resin, commodity plastics, compounds, and 3D printing materials sourced from renown global suppliers. Nexeo Plastics Italy Srl offers its solutions and services in Italy. More in detail, the company provides services including material selection support, application development, process optimization, sustainable solutions, laboratory services and supply chain optimization.

Name and location of production site: Via Maso, 27, 42045 Luzzara (RE), 0522 976421

Product information

Product name: PA6 G35 OPE NAT NEVIECO (it was NEVIECO PA6 G35 OPE NAT in 2021)

Product identification: The studied nylon PA6 granulate compound is an intermediate product containing a percentage of recycled PA6 granulate, used the moulding of plastic products.

Product description: Recycled PA6 is mixed with virgin PA6 and glass fibre. The production process includes the production of ancillary components and packaging for distribution. All components are transported to the company's Reggio Emilia facility where they are mixed and extruded, the outgoing noodles are then cooled in water, dried and pelletised. The final granulate is then packed in LDPE bags and stored to be sold externally.

UN CPC code : 347

Geographical scope: Europe

TECHNICAL DESCRIPTION: PA6 G35 OPE NAT NEVIECO		
IUPAC name		poly[azanediyl(1-oxohexane-1,6-diyl)]
CAS number		25038-54-4
Density	ISO 1183	1,42 g/cm3
Tensile strength at break	ISO 527	175 MPa
Melting T	ISO 11357	250 - 280 °C
HDT @ 1.8 MPa	ISO 75f	205 ° C
GHS classification	GHS Rev. 9, 2021	N.a. (not dangerous)

LCA information

Functional unit / declared unit: The declared unit is 1 kg of product in the form of granules, plus its packaging.

Reference service life: Not applicable for this product category.

Time representativeness: The reference year of the study is 2021.

Database(s) and LCA software used: The EPD is mainly addressed to the business-to-business communication. The data elaboration has been performed with the Gabi software, version 10.6.2.9. The database used are the most updated ones implemented in Gabi software. The LCIA method used is 15804 +A2.

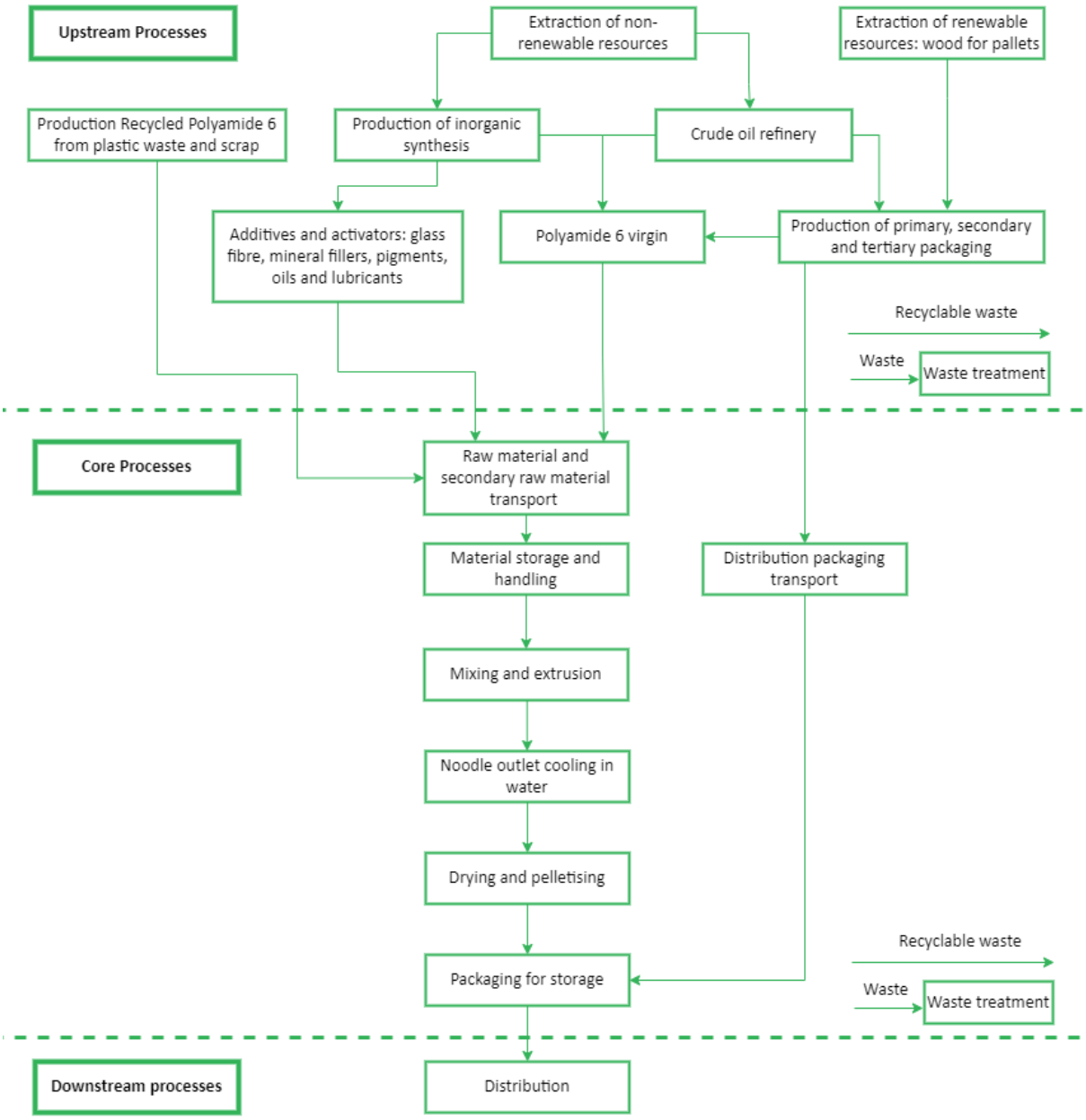
Description of system boundaries: The EPD is a “Cradle to Gate”, including the distribution of the product to the clients.

Excluded lifecycle stages: In the absence of specific information, the use and end-of-life phases of the product are excluded from the study, in compliance with the relevant PCR.

More information: For all Core processes the Italian Residual Mix, based on the AIB report for the reference year, was used. The same mix was used with specific data for Upstream processes performed in Italy. For the other processes, where specific data were not available, the generic European energy mix was used. For all other information more precise

details are available in the website datasheets or from the company.

System diagram:



Content declaration

Product

Materials / chemical substances	CAS number	% *(in weight) of materials /components to the declared unit*
PA6 recycled granulate	N.a.	**24,86**
PA6 virgin granulate	25038-54-4	**37,3**
Glass Fiber	65997-17-3	**37**
Vaseline oil	8002-74-2	**0,05**
Lubricant-stabilizer	32687-78-8	**0,79**

Packaging

Type	Materials	kg of packaging per kg of PA6 G35 OPE NAT NEVIECO
Primary	HDPE bag	**0,002**
Secondary	Corrugated board Octabin	**0,020**
Tertiary	Wood pallet	**0,010**

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product: Yarn PA6 scrap (**pre-consumer**). The product contains more than 24% recycled PA6 granulate. The reported percentage of recycled product is based on self-declarations made by our suppliers which have not been verified by an independent third party.

Environmental performance

Potential environmental impact

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	3,64E+00	4,11E-01	3,69E-03	**4,05E+00**
	Biogenic*	kg CO_2 eq.	0,00E+00	3,45E-02	4,75E-05	**3,46E-02**
	Land use and land transformation	kg CO_2 eq.	3,99E-04	2,62E-04	2,08E-05	**6,82E-04**
	TOTAL	kg CO_2 eq.	3,64E+00	4,45E-01	3,76E-03	**4,09E+00**
Acidification potential (AP)		kg mol H^+ eq.	9,02E-03	4,92E-04	1,26E-05	**9,53E-03**
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	6,03E-06	1,84E-05	1,11E-08	**2,44E-05**
	Aquatic marine	kg N eq.	2,11E-03	2,45E-04	5,84E-06	**2,36E-03**
	Aquatic terrestrial	mol N eq.	2,21E-02	1,92E-03	6,52E-05	**2,41E-02**
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	7,48E-03	4,96E-04	1,14E-05	**7,98E-03**
Ozone layer depletion (ODP)		kg CFC 11 eq.	1,03E-11	3,51E-12	2,23E-16	**1,38E-11**
Abiotic depletion potential (ADP)	Metals and minerals	kg Sb eq.	5,24E-07	4,92E-08	3,11E-10	**5,74E-07**
	Fossil resources	MJ, net calorific value	6,71E+01	5,43E+00	4,98E-02	**7,25E+01**
Water deprivation potential (WDP)		m^3 world eq.	1,27E-01	8,47E-02	3,34E-05	**2,12E-01**

Use of resources

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	5,54E+00	8,63E-01	2,83E-03	6,40E+00
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	TOTAL	MJ, net calorific value	5,54E+00	8,63E-01	2,83E-03	6,40E+00

Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	5,47E+01	5,43E+00	4,99E-02	6,02E+01
	Used as raw materials	MJ, net calorific value	2,05E+01	0,00E+00	0,00E+00	2,05E+01
	TOTAL	MJ, net calorific value	7,52E+01	5,43E+00	4,99E-02	8.07E+01
Secondary material (optional)		kg	2.58E-01	0,00E+00	0,00E+00	2,58E-01
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	1,01E-02	7,69E-04	3,20E-06	1,09E-02

Our Portfolio of advanced Thermoplastics

Our line card of advanced thermoplastics is rapidly expanding, as our global suppliers continue to develop more bio-based, recycled, compostable and renewable options.

Our portfolio of thermoplastics, include:

- Bio-based resins, including certified compostable polymer blends and polyethylene (PE), polypropylene (PP) and other materials that are sourced from sugarcane, grapeseed and other plant-based sources.
- Recycled-content resins, including polyethylene (PE), polypropylene (PP), acrylonitrile butadiene styrene (ABS), polybutylene terephthalate (PBT), polycarbonate (PC), nylon (PA 6 and PA 66) and other materials sourced from recycled plastics, commercial fishing nets and bailing twine.
- Resins based on renewable content sourced from wood-based materials.

Nexeo Plastics looks at its goals from three different perspectives:

Design Requirements

Are there other ways to make parts thinner, while still meeting the same functional performance requirements, ultimately using less material?

Production and Manufacturing Processes

Can production processes be optimized to find untapped sustainability benefits that can lower the carbon footprint, such as reducing energy consumption and the material scrap rate?

Material Selection

Are there bio-based, recycled or renewable thermoplastics that can be used to help meet your current and future application requirements?

References

General Programme Instructions of the International EPD® System. Version 3.01.
PCR 2022-08-17. Plastics in primary forms. 3.0.2
Other references: Technical Report - LCA STUDY OF PA6 G35 OPE NAT NEVIECO manufactured by NEXEO PLASTICS ITALY SRL – Via Maso, 27 - 42045 Luzzara (RE).

Edits

2023-02-21, the following editorial changes were made: in the Product Table under the Content declaration section, the commercial name of the input materials that compose the Bill of Material has been replaced by the generic name of each material.

2023-10-26, the following changes were made: as a result of the implementation of waste and emissions data in the LCA model, the Potential environmental impact results and resource use results were updated.

2024-10-09, the following changes were made: a change within the production process resulted in a slight increase in water consumption per kg of product, the results of the potential environmental impact and resource use were updated.

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