

Carbon Footprint Declaration

EqoYarn PA6 BCF Yarn



Yarns

Declared unit: 1 kg EqoYarn PA6 BCF yarn, wound on cardboard tubes

Type: Cradle-to-gate with options, C and D



Product Description

The declared unit is 1 kg EqoYarn produced by B.I.G. Yarns. The tube on which the yarn is wound is considered as well and added on top of the 1

kg of EqoYarn. Bulk Continuous Filament (BCF) yarn is used as raw material for carpet and carpet tile production for contract, automotive and residential applications. The BCF yarn is formed by extrusion which contain stretching, texturizing and entangling processes.

Description of the Organisation

B.I.G. Yarns is a yarn specialist, providing high expertise and know-how in producing polyamide and polypropylene yarns addressing high demanding needs from the commercial contract market, the customized residential flooring and the automotive interiors. Customer focus, innovation and sustainability are the main drivers for

collaborative product development and long-term relationships. B.I.G. Yarns has two production sites in Europe (site Berry Yarns in Belgium and site Ideal Fibres & Fabrics Comines in France) and one production site in China.

Carbon Footprint Declaration

The climate declaration shows the emissions of greenhouse gases, expressed as CO₂-equivalents per 1 kg EqoYarn PA6 BCF yarn. The end-of-life declared is 100% incineration.

This declaration is based on verified results from a life cycle assessment (LCA), in accordance with EN 15804. For the full LCA document, please contact B.I.G. Yarns.

Contact

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Total Global Warming Potential (kg CO₂ eq./ 1 kg)

100% incineration at end of life

Global Warming Potential	Product Stage
	A1-A3
Fossil	4,06
Biogenic	-0,069
Luluc	0,017
Total	4,00

De-construction	Transport to waste processing	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
C1	C2	C3	C4	D
0,00	0,009	2,28	0,00	-0,93
0,00	0,00	0,07	0,00	-0,004
0,00	0,00	0,00	0,00	0,00
0,00	0,009	2,35	0,00	-0,93

This declaration only addresses one environmental impact category and does not assess other potential social, economic, and environmental impacts arising from the provision of this product. These aspects may be of equal or greater importance than the single impact category displayed.

Additional Background information

EqoYarn PA6 BCF Yarn



Yarns

Product specification

Name	Value	Unit
Type of manufacture	Bulk Continuous Filament (BCF), solution dyed	-
Material	Polyamide 6	-
Yarncount ¹	650 to 8400	dtex
Tenacity at break ²	1 - 3,5	cN/dtex
Elongation at break ²	25 - 75	%

¹ Internal test method ² Test method according to ISO 2062

Product composition and information on biogenic carbon content

Product components	Weight%	Post-consumer material weight-%	Renewable material weight-%
Polyamide 6 granulate	90% - 94,25%	0%	0%
Pigments (e.g. Carbon black or TiO ₂)	0% - 4,25%	0%	0%
Lubricant - Spinfinish	<1%	0%	<1%
Humidity - Water	4,75%	0%	0%
Total	100%	0%	0%

Indicator	Unit	Value
Biogenic carbon content in product	Kg C	0,00E+00
Biogenic carbon content in packaging	Kg C	1,54E-02

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

Description of system boundaries

This LCA study covers the Cradle-to-Gate with modules C1-C4 and module D of EqoYarn BCF yarns. This includes raw material supply, transport of raw materials and manufacturing, end-of-life scenario of 100% incineration, and energy-to-waste benefits.

Regional and temporal scope

Produced in B.I.G. Yarns, site Belgium in Comines-Warneton and site France in Comines. Primary data from reference year 2022. Masterbatch and monobatch production is based on 2019 data.

Limitations, assumptions and allocations

As little cut-off as possible is used in the foreground system. All flows with an influence higher than 1% of the total mass, energy or environmental impact are included. Some assumptions are made due to limitations in the available databases, limitations to the availability of primary data, or to simplify when impact is considered low.

The process generates some waste products that are still valuable and are sold in the market to be used in secondary applications. This waste product is considered as co-product for which economical allocation is applied.

The amounts of energy are allocated from the annual total energy demand according to annual production volumes of PP and PA6 yarn on the two production sites. It is considered that the difference between energy use for PP or PA6 yarn is relatively small and this is an appropriate way of working. The energy consumed by B.I.G. Yarns is 100% renewable energy.

Since EqoYarn relies on supplier specific granulates with low CO₂e emissions, these datasets were received from the specific suppliers. Not all indicators necessary for compliance to EN 15804:2012+A2:2019/AC:2021 were received. Where there was information missing, the datasets were supplemented with the information from the region-specific secondary fossil PA6 dataset. It is considered that this is a conservative approach, since the average polyamide 6 supplier is regarded as less advanced than the partners of B.I.G. Yarns.

Impact assessment method

GaBi software from Sphera GmbH was used to model the LCA, using database content version 2022.2. EN 15804:2012+A2:2019/AC:2021 climate change indicators are reported.

For additional information on the calculation methods, please contact B.I.G. Yarns.