



ONGROFOL[®], stretch film

Product Carbon Footprint Background Report

Report: 2024-09 | Client: Ongropack Kft.

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1. General Information

Commissioner of the study

Ongropack Kft.

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Manufacturing plant:

Szirmabesenyő, Hungary

The declaration is prepared by

EY denkstatt Kft.

Report date

09.2024

Declared product / Declared unit

1 kg Ongrofol, stretch film application

Standards

This Product Carbon Footprint (PCF) and background report have been developed in accordance with the documents ISO 14040/44, ISO 14067, and the Product Life-Cycle Analysis and Reporting Standard (GHG Product Standard).

2. Goal of the Study

The purpose of this research is to assess the potential environmental impacts of producing Ongrofol, stretch film application at the production plant of Ongropack Kft. in Szirmabesenyő, Hungary. The results of the PCF will be used for external communication to both consumers and businesses.

3. Scope of the Study

This document contains requirements on the project report for PCF creation as GHG Product Standard.

The requirements on the project report include:

- Requirements from EN ISO 14040/14044
- Requirements from EN ISO 14067
- Requirements from GHG Product Standard

3.1. Declared unit

This PCF is concerned with the manufacture of the product:

- 1 kg Ongrofol, stretch film application

3.2. Declaration of Product Classes

The declared units refer to the product Ongrofol, stretch film application of 1 kg. The PCF calculation and the present study covers each product within the product group of Ongrofol, which are as follows: Ongrofol Converted®, Ongrofol Industrial®, Ongrofol Jumbo®. Product manufacturing is located at one plant in Szirmabesenyő, Hungary, and refers to the same technology. Data used in calculations represents site-specific production volumes for 2023 January – 2023 December (12-month period). There are no by-products formed from the production lines subject to this study and their impacts are taken into account during the PCF study.

3.3. Description of the Product

Field of application of the product group

ONGROFOL CONVERTED

ONGROFOL® CONVERTED stretch films manufactured by Ongropack Kft. are fully in compliance with the relevant European directives. At determining the product composition, EC regulation No. 10/2011 on plastic materials and articles intended to come into contact with food was taken into consideration. The product is suitable for packaging of alimentary products in X2 and X3 food categories. The film is available in a wide range of sizes with different parameters of thickness, width and length.

ONGROFOL INDUSTRIAL

ONGROFOL® INDUSTRIAL stretch films manufactured by Ongropack Kft. are fully in compliance with the relevant European directives. When determining product composition, EC regulation No. 10/2011 on plastic materials and articles intended to come into contact with food was taken into consideration. The product is

suitable for packaging of alimentary products in X2 and X3 food categories. the film can be easily applied on automatic packaging machines for tray packaging of foods such as fruits, meat, cheese and bakery products to retain their freshness, thus assuring a longer shelf-life in stores and supermarkets. The film can be applied for refrigerated products, as well. All of our ONGROFOL® INDUSTRIAL products contain anti-fogging additive to ensure better visibility of the wrapped food. The film is available in a wide range of sizes with different parameters of thickness, width and length.

ONGROFOL JUMBO

ONGROFOL® JUMBO stretch films manufactured by Ongropack Kft. are fully in compliance with the relevant European directives. At determining the product composition, EC regulation No. 10/2011 on plastic materials and articles intended to come into contact with food was taken into consideration. The product is suitable for packaging of alimentary products in X2 and X3 food categories. The film can be easily and economically applied for alimentary products of any shape. The Jumbo films can be rewound easily and foldlessly even at a high speed on various types of rewinding machines. The rewound film is suitable for manual wrapping of various alimentary products such as cheese, various types of meat, bakery products and fruits. The film is available in a wide range of sizes with different parameters of thickness, width and length.

4. Life Cycle Inventory Analysis

4.1. Data collection and calculation procedures

Primary data representative for the specific production processes is provided by the manufacturer. Data collected refers to all inputs and outputs included in the system boundary and represents the technological advances for 2023 January - 2023 December (12-month period). Data was collected over several phases to ensure as far as possible completeness, precision, consistency, reproducibility, and coverage (geographical, time-related, and technological).

Calculations were performed using Excel-based model, where inputs and outputs are listed. The LCA impacts were calculated using an Excel model and the characterization factors from the product carbon footprint calculations from the suppliers of Ongropack Kft., Ecoinvent 3.10. and in one case (NOx emission) from external source. The appropriate impact factor was multiplied by the respective quantity of inputs/outputs. In the case of energy used, inputs in natural units are converted to the corresponding energy units using country-specific or generic net calorific values. Impact from electricity consumption is assessed applying the country specific factor reflecting the corresponding purchased electricity: 'electricity, low voltage, residual mix' for part of the energy consumption, and the other part of the energy used is provided by photovoltaic energy production. Therefore, the appropriate factor was also selected: 'electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted'.

4.2. Allocation

ISO 14040 defines the allocation as "partitioning the input or output flow of a unit process to the product system under study". Other products are not manufactured in the same manufacturing hall as Ongrofol, thus

allocation was necessary only for water consumption and packaging waste. Allocation was done to identify the associated quantity of flows that are common for the factory: use of packaging materials (EUR-pallets, plastic packaging material and paper packaging material), and water usage. Allocation is based on product volume, mass (kg), because there is a linear causation between water use demand, used packaging materials and weight mass of materials (product volume) and the inputs and outputs were provided in mass (kg).

5. Life cycle impact assessment

Statement that the estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

Considering the quality of the LCI data and results, it is deemed sufficient to conduct the LCIA in accordance with the study goal and scope definition. Additionally, the system boundary and data cut-off decisions have been sufficiently reviewed to ensure the availability of LCI results necessary to calculate indicator results for the LCIA. Last but not least, the environmental relevance of the LCIA results is not decreased due to the LCI functional unit calculation, system wide averaging, aggregation and allocation. The assessment best reflects the causal relationship between the LCI and the resulting emissions. Overall, the assignment of LCI results to the selected impact categories (classification) has been done accordingly.

5.1. Selected impact assessment indicators

Characterization factors for the impact assessment calculations are derived from Ecoinvent 3.10 database. The preferred system model is 'Allocation, cut-off by classification'.

The calculation and categorization of life cycle emissions have been carried out in accordance with the ISO 14040 principles. The impact assessment is prepared for the following mid-point impact categories, regarded as relevant for the goal of the study:

Category	Indicator	Unit
Climate change-total	Global warming potential-total (GWP-total)	kg CO ₂ -eq.

Table 1 Core environmental indicators assessed

Characterization factors for the impact assessment calculations are derived from Ecoinvent 3.10 database. In this PCF study, the EF v3.1 characterization method is applied.

5.2. Environmental profile of the Ongrofol, stretch film application

The assessment results, summarized in the tables below, show the estimated potential impacts from the lifecycle of the products with a scope of cradle-to-gate (A1-A3).

Potential environmental impact of 1 kg Ongrofol, stretch film application:

Results per functional or declared unit					
Indicator	Unit	A1	A2	A3	Tot. A1-A3
GWP-total	kg CO ₂ eq.	1,94E+00	7,41E-02	2,57E-02	2,04E+00
Acronyms	GWP-total = Global Warming Potential fossil fuels + Global Warming Potential biogenic + Global Warming Potential land use and land use change				