Environmental product declaration

This EPD has been prepared in accordance with ISO 14025:2006

Shelled peanut

Programme
The International EPD® System
www.environdec.com

Programme operator
EPD International AB

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CPC Code
21421 - Groundnuts, shelled

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

THE INTERNATIONAL EPD® SYSTEM

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THE INTERNATIONAL EPD® SYSTEM

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 may not be comparable. For two EPDs to be comparable, they must be based on the same PCRS (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 versión of characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see ISO 14025.

PRODUCT CATEGORY RULES
PCR 2019:10 - Prepared and preserved vegetable and fruit products, including juice; 2019:10 versión 2.0; UN CPC 213, 214.

PCR review was conducted by: The Technical Committee of the International EPD System. Chair: Nasser Ayoub. The review panel may be contactede via info@environdec.com

LIFE CYCLE ASSESSMENT (LCA)
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THIRD PARTY VERIFICATION
Independent third-party verification of the declaration and data, according to Norma ISO 14025:2006, via:

☑ EPD verification by individual verifier
Third-party verifier: Bárbara Civit – National Technological University
- Mendoza Regional Faculty
Approved by: The International EPD System.

Procedure for follow-up of data during EPD validity involves third-party verifier: ☑ YES ☐ NO

About us

Gastaldi Hnos is an agro-industrial company based in General Deheza, Córdoba, Argentina, specialized in the production and export of high-quality peanuts. We manage the entire value chain: from planting and cultivation to processing and international marketing.

With a strong commitment to sustainability, innovation, and excellence, we implement cutting-edge technology and strict controls at every stage of the production process to ensure quality and food safety.

We were the first peanut company in Argentina to certify BRCGS Food Safety, and we also hold Kosher and SMETA Sedex certifications, demonstrating our compliance with the highest international standards and customer requirements.

------- Vision

To be an innovative, professional and efficient industry. We focus on the satisfaction and recognition of our stakeholders, committing ourselves to sustainable progress.

------- Values

Our guides
Responsibility, honesty and humility are the guiding principles of our culture.

Team
We value truth, loyalty and commitment to our clients and collaborators. We promote a proactive attitude and strong sense of belonging within our team.

Challenges

We seek enthusiasm and a results-oriented mindset as drivers of success, always open to challenges and continuous growth.

Gastaldi around the world

From the province of Córdoba, we export our peanuts to over 80 countries across the Americas, Europe and Asia.

We export 99% of our production.

Export logistics involve multimodal transportation: land transport (by train or truck) is used to move the cargo to the port, followed by sea transport for international shipping.

Product information

Shelled peanut

- Selected peanuts with skin (whole or splits), supplied in bulk to industrial customer (B2B).
- Packaging details. The product is supplied in 1.250 kg polypropylene big bags(tare weight 2.3 kg), identified with a printed paper label, which constitute the sales unit. Big bags are shipped in maritime containers. No consumer packaging is used.
- The product is 100% peanuts, with no additives or other ingredients.
- This product will undergo further industrial processes before direct human consump.
- Count: 30-38, 38-42, 40-50, 50-60, 60-70, 70-80, 80-100, Splits.
- Shelf life: 12 months from the production date under proper storage conditions: 45%-55%humidity and a temperature between 12˚C-15 ˚C

Nutritional information

1. NUTRITIONAL COMPOSITION		
Atributes	Units	Values per 100 g.
Calories	Kcal	570
Proteins	g	26
Total carbohydrates	g	16.6
Fiber	g	7.9
Fats	g	48
Saturated fats	g	5.95
Monounsaturated fats	g	38.54
Polyunsaturated fats	g	3.51
Trans fats	g	0.00
Vitamin E	mg	8.10
Vitamin B9 - Folate	mg	240
Vitamin B3 - Niancin	mg	12.7
Vitamin B1 - Thiamine	mg	0.64
Vitamin B2 - Riboflavin	mg	9.13
Vitamin B5 - Pantothenic Acid	mg	1.77
Vitamin B6 - Pyridoxine	mg	0.35
Zinc	mg	3.30
Copper	mg	0.9
Selenium	mcg	6.90
Magnesium	mg	175
Phosphorus	mg	395
Potassium	mg	682
Calcium	mg	65
Sodium	mg	10
Iron	mg	2.90
Cholesterol	g	0.00

Values taken from a study carried out by the Fundacion Maní Argentino. For mor information http://fundacionmani.org.arg

Content information

The product is 100% peanuts, with no additives or other ingredients. The packaging associated with the declared unit amounts to 3.37E-03 kg; see the table below.

Packaging material	Type/Function	Mass, kg	Mass-% (vs.product)	Biogenic material, kg c/declared unit
Polypropylene	Big bag - bulk containment	1.84E-03	0.18%	0.00E+00
Printed paper	Big bag label - identification	2.76E-06	0.00%	1.17E-06
Silica gel	Moisture absorber -	7.68E-04	0.08%	0.00E+00
Cardboard	Slip sheet - container	6.4E-04	0.06%	2.72E-04
Corrugated paper	Load protection - container	4.16E-05	0.00%	1.77E-05
Kraft paper	Load protection - container	6.50E-05	0.01%	2.76E-05
Aluminium phosphide	Fumigant for pest protection -	8.70E-06	0.00%	0.00E+00
Total		**3.37E-03**	**0.34%**	**3.19E-04**

LCA INFORMATION

Declared unit

One kilogram of shelled and packed peanuts. The weight of the packaging is not included in the weight.

Geographical scope

Global

Time representativeness

The reference period for the analysis is the 2022-2023 crop season and the year 2023 for industrial data.

Databases(s) and LCA software

Ecoinvent V 3.10.1 // SIMAPRO 9.6.0.1 // Agri-Footprint V6.0

Impact assessment methodology

Environmental performance was evaluated through the Life Cycle Assessment (LCA). The product analysed is marketed under the Business-to-business (B2B) business model, and the scope of the analysis is from “cradle to grave”.

The results are calculated with reference to Version 3.0 of the default list of environmental performance indicators based on EF 3.1

The study considers the following impacts:

- Global warming potential
- Ozone layer depletion
- Acidification potential
- Eutrophication potential
- Photochemical oxidant creation potential
- Abiotic depletion potential (metals and minerals)
- Abiotic depletion potential (fossil fuels)
- Water deprivation potential

LCA INFORMATION

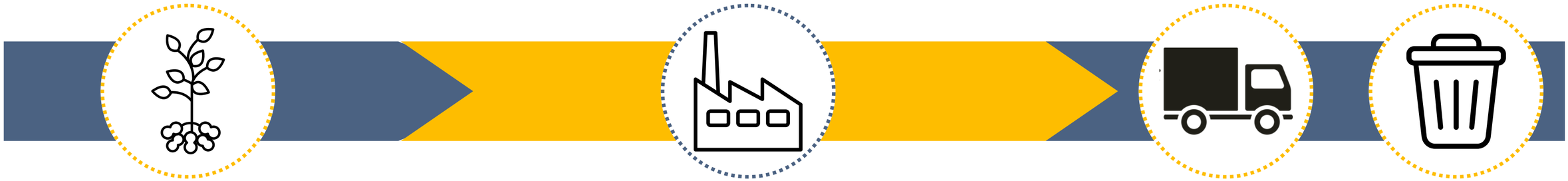
IMPACT CATEGORY	METHOD
Climate change (GWP): fossil, biogenic, LULUC	GWP100, IPCC 2021
Acidification potential (AP)	EN 15804 (accumulated exceedance)
Freshwater eutrophication potential (EP)	EUTREND (EN 15804, based on ReCiPe)
Marine eutrophication potential (EP)	EUTREND (EN 15804, based on ReCiPe)
Terrestrial eutrophication potential (EP)	EN 15804 (accumulated exceedance)
Photochemical ozone formation (POCP)	LOTOS-EUROS (ReCiPe)
Ozone depletion (ODP)	EN 15804
Depletion of mineral resources (ADP minerals & metals)	CML 2001 (EN 15804)
Depletion of fossil resources (ADP fósil)	CML 2001 (EN 15804)
Water use (WDP)	AWARE method

The results are calculated with reference to Version 3.0 of the default list of environmental performance indicators, based on EF 3.1.

System boundaries: From “cradle to grave”

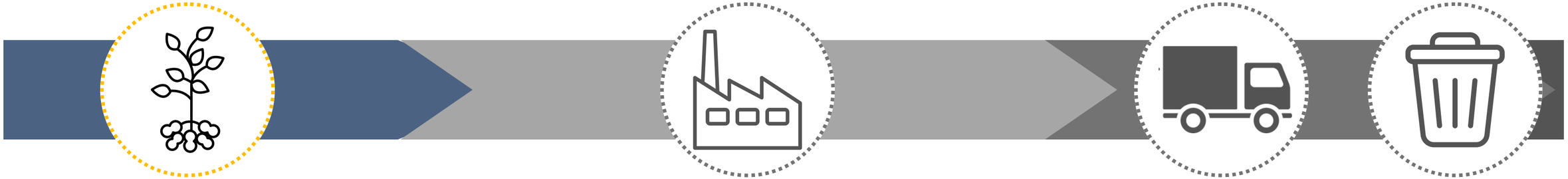
Declared unit

One kilogram of shelled and packed peanuts. The weight of packaging not included in the weight.



The mass allocation criterion was used, as indicated for industrial processes in the reference PCR.

Upstream process: agricultural process



Raw material
Agricultural production

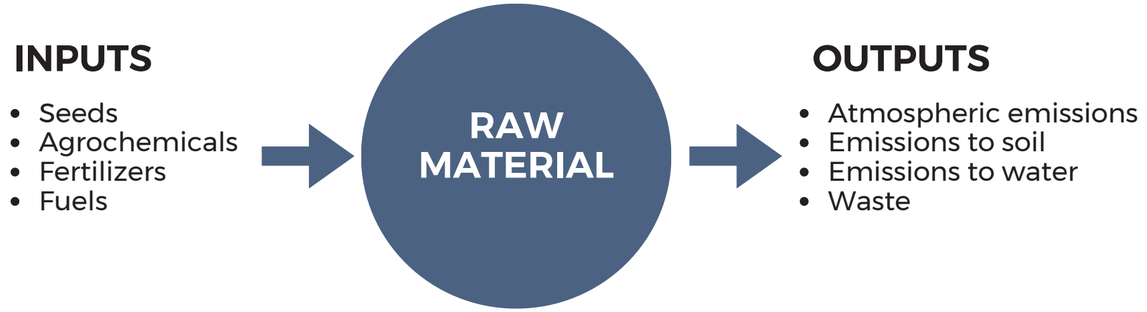
Production process

Transportation of finished product

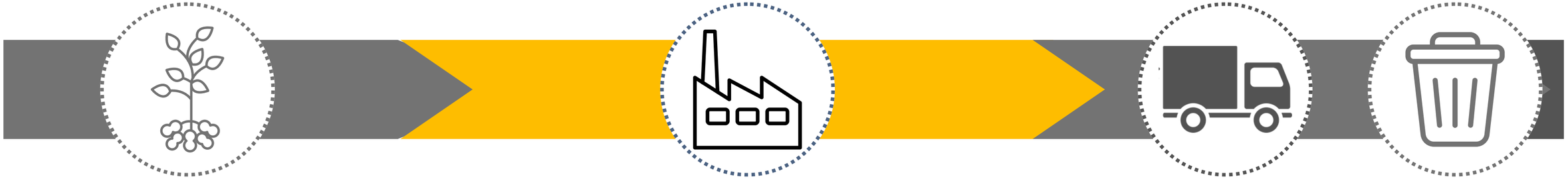
Final packaging disposal

Agricultural production - Raw peanuts

The agricultural data corresponds to the 2022/2023 crop year and the industry data corresponds to 2023.
For raw peanut production, emissions from the decomposition of aboveground and belowground crop residues were included in the study. Tier 2 (TIER 2) of the IPCC emissions calculation was used, which uses the IPCC default equations and calculates crop-specific emissions with country-specific emission factors taken from Argentina´s Biennial Update Reports (MAyDS, 2019). Tier 2 uses disaggregated activity data.
The stages of planting, crop protection, digging, and harvesting are considered.



Production process: Industrial process in Plant



Raw material
Agricultural production

Production process

Transportation of finished product

Final packaging disposal

Principal production

In this stage of precessing raw peanuts into shelled peanuts, Gastaldi Hnos´s own data was used. The inputs used, fuel and energy consumption, the suppliers involved, as well as the losses and byproducts generated during the process were identified. The stages involved are: transportation of raw material from de field to the Plant, reception of raw material at the Plant, pre-cleaning, drying, storage of raw material, cleaning and shelling, electronic selection, packaging and storage of finish product.

INPUTS

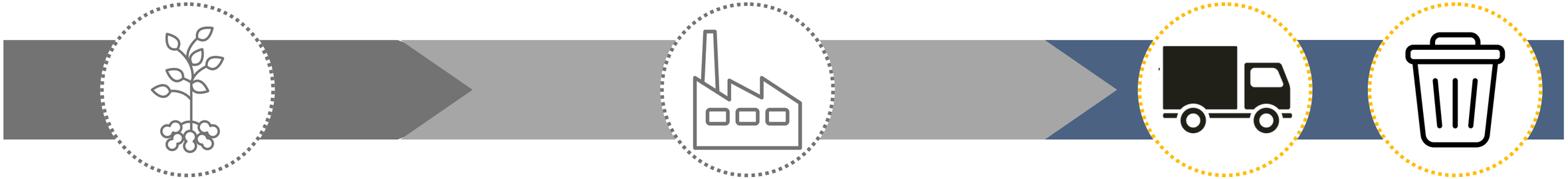
- Inputs
- Electricity
- Natural gas
- Fuels
- Packaging

SHELLED PEANUTS

OUTPUTS

- Atmospheric emissions
- Waste

Downstream: transporation of finished product and final packaking



Raw material
Agricultural production

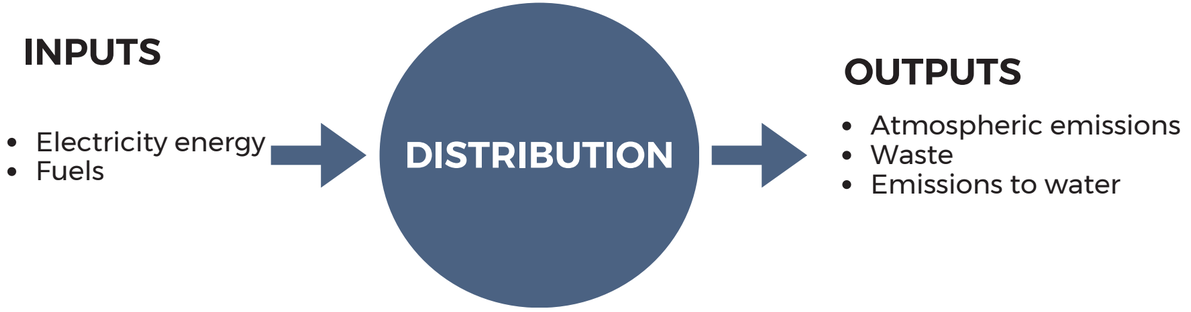
Production process

Transportation of finished product

Final packaging disposal

Regarding logistics, product packaging was considered, including additional packaging to accommodate containers. For each declared unit, a weighted average of the various routes by train and truck was calculated, and shipping was also included, also considering a weighted average according to the most important destinations: European Union.

It is assumed that all necessary packaging, including wrapping, plastic and cardboard wil be disposed of in a landfill at the end of its useful life. However, these materials are recyclable.



Environmental results

Table 1: Impact category indicators for the UD 1 kilogram of shelled peanuts packaged and delivered to the customer.

PARAMETER		UNIT	Upstream		Core	Downstream		TOTAL
			Agricultural production	Packaging production	Shelled peanut production	Distribution	End of life	
Global warming potential (GWP)	Fossil	kg CO_2 eq.	2.82E-1	7.26E-3	1.18E-1	1,83E-1	4.21E-5	5.91E-1
	Biogenic	kg CO_2 eq.	1.67E-1	9.79E-6	5.6E-4	6.32E-6	2.01E-9	1.68E-1
	Land use and land transformation	kg CO_2 eq.	2.76E-4	8.99E-6	9.78E-4	5.30E-6	1.33E-9	1.27E-3
	GHG	kg CO_2 eq.	4.5E-1	7.28E-3	1.19E-1	1.83E-1	4.21E-5	7.60E-1
	Global warming potential	**kg CO_2 eq.**	**4.50E-1**	**7.28E-3**	**1.19E-1**	**1.83E-1**	**4.21E-5**	**7.60E-1**
Ozone layer depletion (ODP)		kg CFC 11 eq.	2.62E-6	1.67E-10	1.78E-9	2.66E-9	5.74E-13	2.62E-6
Acidification potential (AP)		mol H+ eq.	2.86E-3	2.45E-5	2.55E-4	4.41E-3	1.69E-7	7.55E-3
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	8.37E-5	1.64E-6	2.08E-6	1.76E-6	9.41E-10	8.92E-5
	Aquatic marine	kg N eq.	9.16E-4	5.39E-6	7.69E-5	1.13E-3	6.88E-8	2.13E-3
	Aquatic terrestrial	mol N eq.	1.07E-1	5.42E-5	8.35E-4	1.25E-2	7.50E-7	1.20E-1
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	2.5E-3	2.88E-5	3.88E-4	3.39E-3	2.54E-7	6.39E-3
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	9.65E-8	2.02E-9	5.13E-9	4.11E-9	2.30E-12	1.08E-7
	Fossil resources	MJ, net calorific value	3.91E+0	1.65E-1	1.84E+0	2.30E+0	5.54E-4	8.21E+0
Water deprivation potential (WDP)*		m3 world eq. deprived	2.30E-1	1.72E-3	6.50E-2	1.17E-3	5.09E-7	2.98E-1
Land use		m²a	7.33E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.33E+0

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

Environmental results

Table 2: Resource usage indicator for the UD 1 kilogram of shelled peanuts packaged and delivered to the customer.

PARAMETER		UNIT	Upstream		Core	Downstream		TOTAL
			Agricultural production	Packaging production	Shelled peanut production	Distribution	End of life	
Primary energy resources - Renewable	Use as energy carrier	MJ, net calorific value	4.25E-1	2.91E-2	1.75E-1	4.23E-3	1.22E-6	6.33E-1
	Used as raw materials	MJ, net calorific value	0.00E+0	7.76E-3	0.00E+0	0.00E+0	0.00E+0	7.76E-3
	TOTAL	MJ, net calorific value	4.25E-1	3.69E-2	1.75E-1	4.23E-3	1.22E-6	6.41E-1
Primary energy resources - Non-renewable	Use as energy carrier	MJ, net calorific value	3.91E+0	1.65E-1	1.84E+0	2.30E+0	5.54E-4	8.21E+0
	Used as raw materials	MJ, net calorific value	2.01E-1	6.03E-2	0.00E+0	0.00E+0	0.00E+0	2.61E-1
	TOTAL	MJ, net calorific value	4.11E+0	2.25E-1	1.84E+0	2.30E+0	5.54E-4	8.47E+0
Secondary material		kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Net use of fresh water		m3	7.25E-3	4.48E-5	1.42E-3	5.24E-5	1.87E-8	8.77E-3

Environmental results

Table 3: Waste indicator for the UD 1 kilogram of shelled peanuts packaged and delivered to the customer.

PARAMETER	UNIT	Upstream		Core	Downstream		TOTAL
		Agricultural production	Packaging production	Shelled peanut production	Distribution	End of life	
Hazardous waste disposed	kg	4.58E-5	2.38E-6	9.61E-6	1.24E-5	3.76E-9	7.03E-05
Non-hazardous waste disposed	kg	9.79E-4	2.99E-5	1.28E-3	5.74E-4	3.36E-3	6.22E-3
Radioactive waste disposed	kg	2.10E-6	6.06E-8	4.83E-6	9.79E-8	2.29E-11	7.09E-6

Table 4: Outbound flow indicators for the UD 1 kilogram of shelled peanuts packaged and delivered to the customer.

PARAMETER	UNIT	Upstream		Core	Downstream		TOTAL
		Agricultural production	Packaging production	Shelled peanut production	Distribution	End of life	
Components for reuse	kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Material for recycling	kg	0.00E+0	0.00E+0	9.88E-5	0.00E+0	0.00E+0	9.88E-5
Materials for energy recovery	kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported energy, electricity	MJ per energy carrier	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported energy, thermal	MJ per energy carrier	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

Our commitment to sustainable peanut production

Good Agricultural Practices (GAP)

We use less heavy machinery compared to other countries, which helps us reduce emissions associated with fossil fuel consumption.

Favorable climate conditions

Our peanut-growing regions benefit from a climate that supports optimal crop development, reducing the need for additional inputs such as fertilizers and intensive irrigation.

Technology for efficient agriculture

We implement advanced technologies like precision agriculture, drone monitoring and variable-rate applications. These practices optimize resource use and minimize environmental impacts.

Crop rotation to protect soil healt

We rotate peanuts with crops like corn and soybeans to improve soil health and reduce the use of chemical fertilizers, which lowers greenhouse gas emissions.

Version history

Changes in version 003 versus the previously published version:

Programme information

- The reference to the PCR has been corrected to PCR 2019:10 “Prepared and preserved vegetable and fruit products, including juice” version 2.0, UN CPC 213, 214. The same correction has been made in the referecnes section.
- The PCR review chair has been corrected to Nasser Ayoub, chair of the review of PCR 2019:10 version 2.0.

Product and LCA information

- Packaging details have been added to the product information section, in accordance with PCR 2019:10, Section 5.4.3.
- A content declaration section has been added, including the packaging content declaration in accordance with PCR 2019.10, Section 5.4.4.1.
- The description of the allocation method has been corrected to mass allocation, in accordance with the reference PCR.

Environmental results

- Results are now reported separately for agricultural production and packaging production within upstream processes, and for distribution and end of life within downstream processes, in accordance with PCR 2019:10, Section 5.4.5. Aggregated results remain unchanged.
- The land use indicator has been added to the impact category indicators.

Version history

- The classification of primary energy use between energy carrier and raw materials has been corrected in the resource use indicators; as a result, the total renewable and non-renewable primary energy values have changed.
- The mandatory indicators “Secondary material” and “Net use of fresh water” have been added to the resource use indicators.
- Waste indicators (Table 3) and outbound flow indicators (Table 4) have been added.
- The results analysis section, which showed contribution charts, has been removed.

References

ISO 14040:2006

Environmental management - Life cycle assessment - Principles and framework

ISO 14044:2006

Environmental management - Life cycle assessment - Requirements and guidelines.

ISO 14067:2018

Greenhouse gases. Carbon footprint of products. Requirements and guidelines for their quantification.

ISO 14025:2006

Environmental labels and declarations. Type III environmental declaration. Principles and procedure.

International EPD System

General Programme instructions (EPD) - Version 5.0.1

PCR 2019:10

Prepared and preserved vegetable and fruit products, including juice; 2019:10 version 2.0; UN CPC 213, 214.

Life cycle assessment (LCA)

Life cycle assessment (LCA) applied to peantus. Report date: 10/03/2025

Gastaldi

Environmental product declaration

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