

Environmental Product Declaration



In accordance with ISO 14020 / ISO 14025 for:

GREEN BOX G70

from

GREEN BOX S.L.



Programme:	The International EPD® System, www.environdec.com
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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
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Product category rules (PCR): PCR 2018:02 <i>Crates for food, version 1.22, CPC 3170, 32153, 36490.</i>
PCR review was conducted by: The Technical Committee of The International EPD [®] System. Review chair: Maurizio Fieschi. Contact via info@environdec.com .
Independent third-party verification of the declaration and data, according to ISO 14025:2006: <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification
Third party verifier: <i>Marcel Gómez Ferrer.</i> <i>Marcel Gómez Consultoría Ambiental.</i> www.marcelgomez.com <i>Tlf 0034 630 64 35 93</i> <i>Email: info@marcelgomez.com</i>
Accredited by: The International EPD [®] System.
Procedure for follow-up of data during EPD validity involves third party verifier: <input type="checkbox"/> Yes <input type="checkbox"/> No

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

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

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: **GREEN BOX S.L.**

Contact information: Oscar Rivas Calderón

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Description of the organisation:

Green Box, S.L. specialises in packaging and logistics systems for the agri-food sector since 1924. Its headquarter is based in Alcácer (Valencia, Spain). Green Box, S.L. is ISO 9001:2015 certified.

Green Box, S.L. has developed its models for over 30 years, and offers companies an immediate service. GreenBox as a product helps both producers and distributors to save time, money, and effort. Thanks to its attractive, environmentally friendly product designs - which can also be completely personalised - companies are able to increase their sales. Its unique, high-quality packaging system prevents incidents from occurring during transportation.

Green Box, S.L. offers 3 models which differ in height and consequently in loading capacity: G50, G70 and G100.

Name and location of production site:

GREEN BOX S.L.

Carrer dels Fusters, 5

46290 Alcácer (Valencia) SPAIN

Tel. +34 96 124 0118

E-mail: comercial@greenbox.es

Web: <https://greenboxsl.com/>

Product information

Product name: **GREEN BOX G70**

UN CPC code:

31700: Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; casks, barrels, vats, tubs and other cooper's products and parts thereof, of wood (including staves).

Product description:

The G70, with a load capacity of up to 120kg, is the most versatile product in the range. It is also the most popular amongst our clients as it is easy to handle, and it has a considerable load capacity. The replenishment times can be reduced and thanks to the carefully-polished image the products are more visible at the point of sale which can considerably increase their sales. As with the other Green Box products, thanks to the vertical ventilation system and robust structure, the products are preserved better, and incidents are prevented during transportation.

	TARE		7kg
			120kg

The container is made of three well differentiated materials:

- Polypropylene base (TRADE PALLET): It is manufactured from recycled polypropylene.
- Wood structure: 4 pine triangular laths of 690mm in the edges, 2 pine slats 760 mm and 2 poplar slats 545 mm.
- Corrugated cardboard that surrounds the structure of the Green Box, of 5-layer (4 of recycled paper and one exterior of printed Kraft paper). Layers 2 and 4 are corrugated.
- Polyester straps to give consistency to the container. Each container has 2 straps. Additionally, 2 containers are strapped together to give the measure of a Europallet (80x120 cm).

The characteristics of each of them are indicated in the following tables:

TRADE PALLET	
Height	14,5 cm
Wide	60,0 cm
Length	80,0 cm
Weight	2,9 kg

WOOD STRUCTURE				
Component	Height (m)	Wide (m)	Length (m)	Weight (kg)
Pine square lath 690 mm (= 2 triangular lath)	0,048	0,048	0,69	0,7949
Pine slats 760 mm	0,09	0,009	0,76	0,3078
Poplar slats 545 mm	0,06	0,009	0,545	0,1324

CORRUGATED CARDBOARD SIDE	
Height	56,5 cm
Wide	274,8 cm
Weight	1,4 kg

POLYESTER STRAP	
Weight	0,064 kg

The mass and volume of the container are indicated in the following table:

GREEN BOX G70	
TRADE PALLET	2,9 kg
WOOD STRUCTURE (4 triangular lath 690 mm + 2 slats 760 mm + 2 slats 545 mm)	2,47 kg
CORRUGATED CARDBOARD SIDE	1,4 kg
POLYESTER STRAP	0,064 kg
WEIGHT (kg)	6,834
USEFUL VOLUME (L)	261,6

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0,1% of the weight of the product.

MAIN ADVANTAGES:

Our products are designed to be robust and long-lasting, without any incidents during transportation. The vertical ventilation system and its optimum stability reduces product loss. GreenBox reduces handling expenses in platforms and stores and reduces transportation costs thanks to the low packaging tare. Also, it is 100 % recyclable and environmentally friendly. Plus, it offers an eye-catching design boosting sale instore.

- ORIGIN OF RAW MATERIALS

All of the materials used to make the Green Box are recycled, recyclable or come from certified sustainable sources.

- Polypropylene pallet, 100% recycled.
- Wood from plantations with PEFC certificate.
- Cardboard manufactured using recycled paper.

- AMOUNT OF RAW MATERIAL CONSUMED

The amount of raw material used in packaging is considerably reduced in relation to the amount of product packed.

- SAVINGS IN TRANSPORTATION/ LOGISTICS

Green Box offers the most favourable tare/useful load ratio on the market. By simplifying the packaging and palleting task (without using lower and intermediate pallets) it is possible to save 10% of transportation needs thus reducing the environmental impact.

The vertical ventilation system helps to maintain the products at an ideal temperature, thus reducing energy expenses.

- SAVE IN REPLENISHMENTS

The Green Box can also be used as an in-store display container. More product is displayed on a small floor space in the POS, freeing up shelf space. Consequently, the need to constantly refill the product is also reduced. This frees up resources for other activities with higher value. Plus, using GreenBox improves sales and contributes to a higher product rotation as GreenBox is placed in more visible places.

Using GreenBox the fresh produce does not have to be re-packaged, and less effort will be required while at the same time complying with the Recommendations by the Spanish Association of Manufacturers and Distributors (AECOC) regarding height of loaded pallet units.

- **RECYCLING USED MATERIAL**

Another advantage that these products offer is that used material can be sent back for recycling.

- **GREEN BOX DISTRIBUTORS**

We are strategically located close to the main fruit and vegetable production areas in Spain (**Valencia, Almería, Sevilla and Murcia**).

Thanks to our collaborators, our GREEN BOX can be re-collected throughout Europe. Our GREEN BOXES are also available in the following distribution points in Europe: United Kingdom, Finland, France, Belgium, Holland, Italy and Germany.



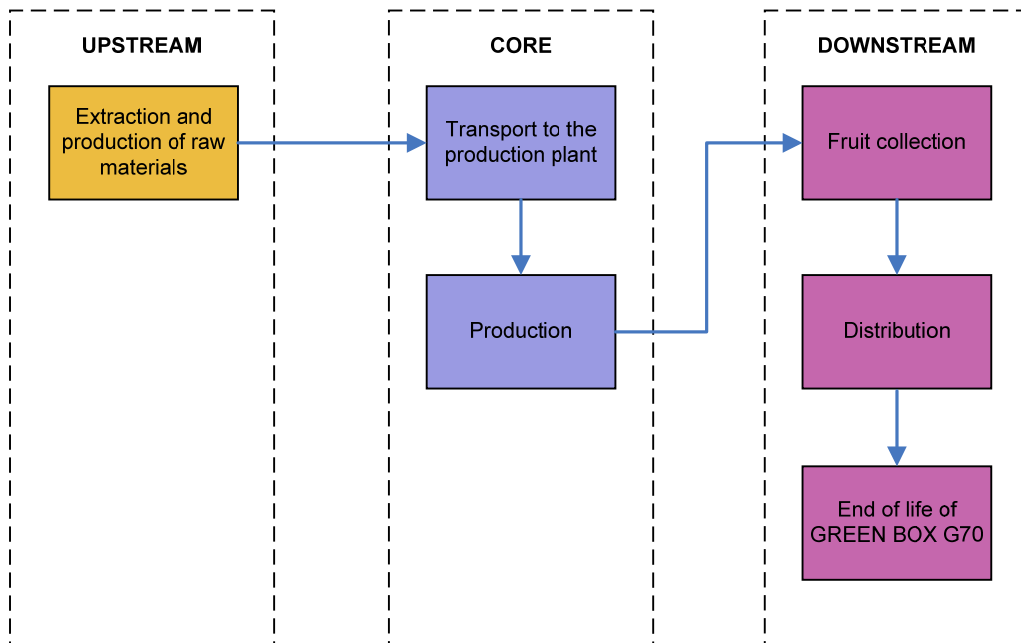
LCA information

Functional unit / declared unit:

According to PCR, 2 functional units are considered:

- 1 container GREEN BOX G70 (Functional Unit = 261,6 L)
- 1 container STANDARD (Functional Unit = 30 L)

System diagram:



Description of system boundaries:

In accordance with PCR, a "cradle to grave" life cycle analysis has been carried out. The system boundaries include the production of raw materials (upstream), crate manufacturing and energy wares production needed to the core process as well as the distribution to the customers and the end of life (downstream).

The different indicators have been calculated by functional unit and by life cycle stage (upstream, core and downstream).

Main hypotheses and exclusions:

A minimum of 99% of the total weight of the declared product considering packaging is included.

In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded per module cannot be bigger than the 5%

of the whole mass and energy used, as well of the emissions to environment occurred. Flows related to human activities such as employee transport are excluded.

In the stage of extraction and production of raw materials, the packaging production has been taken into account. In the case of recycled materials, "polluter pays principle" has been applied: Only the environmental load of the recycling process is considered, not the previous processes. Thus, in the case of the trade pallet (recycled polypropylene), the electrical consumption of its manufacture has been considered, data provided by the supplier.

In the transport to the production plant, the real distances from the supplier to GREEN BOX have been considered. Real data of return of Trade Pallets and wood to Green Box in the end-of-life stage has been considered. Transport in lorry 16-32 metric ton, EURO6.

In the production stage, the consumption of raw material, electricity and water has been considered, as well as the generation and external management of waste (transport in lorry 16-32 metric ton, EURO6, real distances). The use of auxiliary materials in the maintenance of machinery has been excluded. Also, the discharge of urban wastewater.

In the fruit collection stage, the transport distances to an assembly plant have been considered when the container is shipped unassembled. Transport in lorry 16-32 metric ton, EURO6.

An average transport distance of 50 km has been assumed for the container once assembled to the filling point (transport in lorry with reefer).

For distribution, the weighted average distance of the container has been calculated, resulting in 1878 km. Transport in lorry with reefer.

In the end-of-life stage, the data on recycling and recovery of packaging waste EU-27 in 2018 has been taken as a reference (66,3% recycling, 14,6% energy recovery and 19,1% dump).

In waste management, "polluter pays principle" has been applied: If the waste is recovered or recycled, only the transport is considered. If it is eliminated, transport to treatment and the treatment applied to the waste are considered both. Transport in lorry 16-32 metric ton, EURO6, distance 25 km.

Data quality:

Specific data of the production plant:

- Consumption of raw materials and packaging
- Consumption of electricity and water
- Waste production

Generic data (ECOINVENT 3.6) for:

- Production of raw materials and packaging
- Production of electricity and water
- Transport
- Waste management

Long-term emissions and infrastructure processes have not been excluded in the datasets de ECOINVENT.

Allocation:

Direct allocation for the consumption of raw materials.
 Physical allocation (mass) for electricity consumption and waste.
 Wherever possible allocation has been avoided.

Time representativeness:

Consumption and production data for 2019.

Database used: ECOINVENT 3.6 (2019)

Geographical scope: Europe

Content declaration

Product

Materials / chemical substances	kg	%	Environmental / hazardous properties
Polypropylene	2,9	42,43	100% recycled & recyclable
Pine wood	2,21	32,34	PEFC certificate
Corrugated cardboard	1,4	20,49	4 layers of recycled paper and one exterior of printed Kraft paper FSC Certificate
Poplar wood	0,26	3,80	PEFC certificate
Polyester	0,064	0,94	

During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0,1% of the weight of the product.

Environmental performance

1 container GREEN BOX G70 (F.U.= 261,6 L)

Potential environmental impact

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	2,56E+00	5,45E-01	3,10E+00	6,21E+00
	Biogenic	kg CO ₂ eq.	7,92E-02	2,55E-04	3,20E-02	1,11E-01
	Land use and land transformation	kg CO ₂ eq.	7,33E-02	6,22E-04	7,99E-04	7,47E-02
	TOTAL	kg CO ₂ eq.	2,72E+00	5,46E-01	3,14E+00	6,40E+00
Acidification potential (AP)		kg SO ₂ eq.	1,29E-02	1,58E-03	1,06E-02	2,50E-02
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	6,59E-03	3,47E-04	6,00E-03	1,29E-02
Formation potential of tropospheric ozone (POCP)		kg C ₂ H ₄ eq.	7,90E-04	7,41E-05	3,15E-04	1,18E-03
Abiotic depletion potential - Elements		kg Sb eq.	4,00E-05	1,40E-05	5,19E-05	1,06E-04
Abiotic depletion potential - Fossil resources		MJ, net calorific value	4,08E+01	8,22E+00	3,20E+01	8,10E+01
Water scarcity potential		m ³ eq.	2,91E+00	6,65E-02	1,94E-01	3,17E+00
Land use		m ² a	1,02E+01	3,72E-02	1,64E-01	1,04E+01
Freshwater aquatic eco-toxicity		kg 1,4-dichloroben zene eq.	2,05E+00	5,90E-02	5,66E+00	7,77E+00
Human toxicity		kg 1,4-dichloroben zene eq.	1,90E+00	2,05E-01	2,93E+00	5,03E+00
CED (cumulative energy demand)		MJ	1,14E+02	8,88E+00	3,39E+01	1,57E+02

Use of resources

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	2,64E+01	3,76E-01	4,50E-01	2,72E+01
	Used as raw materials	MJ, net calorific value	5,05E+01	0,00E+00	0,00E+00	5,05E+01
	TOTAL	MJ, net calorific value	7,69E+01	3,76E-01	4,50E-01	7,77E+01
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	3,53E+01	8,50E+00	3,34E+01	7,72E+01
	Used as raw materials	MJ, net calorific value	1,57E+00	0,00E+00	0,00E+00	1,57E+00
	TOTAL	MJ, net calorific value	3,69E+01	8,50E+00	3,34E+01	7,88E+01
Secondary material		kg	4,29E+00	0,00E+00	0,00E+00	4,29E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m ³	3,66E-02	8,39E-04	2,45E-03	3,99E-02

Waste production and output flows

Waste production

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Hazardous waste disposed	kg	1,64E-03	2,03E-05	8,29E-05	1,74E-03
Non-hazardous waste disposed	kg	3,40E-01	3,81E-01	3,19E+00	3,91E+00
Radioactive waste disposed	kg	1,44E-04	6,05E-05	2,15E-04	4,20E-04

Output flows

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Components for reuse	kg	0,00E+00	0,00E+00	5,52E-01	5,52E-01
Material for recycling	kg	0,00E+00	6,51E-01	4,13E+00	4,78E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	9,53E-01	9,53E-01
Littering	kg	0,00E+00	7,36E-03	1,25E+00	1,26E+00
Exported energy, electricity	MJ	-	-	-	-
Exported energy, thermal	MJ	-	-	-	-

Other environmental indicators

Energy content of product: 198 MJ

Content of recycled material of product: 61 %

Photovoltaic installation (power 120 kW) for self-consumption of the electrical energy produced. In operation since June 2021. Percentage of GREEN BOX consumption covered in June 2021: 59%.

1 container STANDARD (F.U.= 30 L)

Potential environmental impact

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL	
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	2,94E-01	6,25E-02	3,56E-01	7,13E-01
	Biogenic	kg CO ₂ eq.	9,08E-03	2,93E-05	3,67E-03	1,28E-02
	Land use and land transformation	kg CO ₂ eq.	8,40E-03	7,13E-05	9,17E-05	8,57E-03
	TOTAL	kg CO ₂ eq.	3,12E-01	6,26E-02	3,60E-01	7,34E-01
Acidification potential (AP)	kg SO ₂ eq.	1,48E-03	1,81E-04	1,21E-03	2,87E-03	
Eutrophication potential (EP)	kg PO ₄ ³⁻ eq.	7,56E-04	3,98E-05	6,88E-04	1,48E-03	
Formation potential of tropospheric ozone (POCP)	kg C ₂ H ₄ eq.	9,06E-05	8,50E-06	3,62E-05	1,35E-04	
Abiotic depletion potential - Elements	kg Sb eq.	4,59E-06	1,61E-06	5,95E-06	1,21E-05	
Abiotic depletion potential - Fossil resources	MJ, net calorific value	4,68E+00	9,42E-01	3,66E+00	9,29E+00	
Water scarcity potential	m ³ eq.	3,33E-01	7,63E-03	2,23E-02	3,63E-01	
Land use	m ² a	1,17E+00	4,26E-03	1,88E-02	1,19E+00	
Freshwater aquatic eco-toxicity	kg 1,4-dichlorobenzene eq.	2,36E-01	6,77E-03	6,49E-01	8,91E-01	
Human toxicity	kg 1,4-dichlorobenzene eq.	2,18E-01	2,35E-02	3,36E-01	5,77E-01	
CED (cumulative energy demand)	MJ	1,30E+01	1,02E+00	3,89E+00	1,79E+01	

Use of resources

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	3,03E+00	4,32E-02	5,16E-02	3,12E+00
	Used as raw materials	MJ, net calorific value	5,79E+00	0,00E+00	0,00E+00	5,79E+00
	TOTAL	MJ, net calorific value	8,82E+00	4,32E-02	5,16E-02	8,91E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	4,05E+00	9,75E-01	3,84E+00	8,86E+00
	Used as raw materials	MJ, net calorific value	1,80E-01	0,00E+00	0,00E+00	1,80E-01
	TOTAL	MJ, net calorific value	4,23E+00	9,75E-01	3,84E+00	9,04E+00
Secondary material	kg	4,92E-01	0,00E+00	0,00E+00	4,92E-01	
Renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
Non-renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
Net use of fresh water	m ³	4,20E-03	9,62E-05	2,81E-04	4,58E-03	

Waste production and output flows

Waste production

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Hazardous waste disposed	kg	1,88E-04	2,33E-06	9,51E-06	2,00E-04
Non-hazardous waste disposed	kg	3,90E-02	4,37E-02	3,66E-01	4,49E-01
Radioactive waste disposed	kg	1,65E-05	6,94E-06	2,47E-05	4,81E-05

Output flows

PARAMETER	UNIT	Upstream	Core	Downstream	TOTAL
Components for reuse	kg	0,00E+00	0,00E+00	6,33E-02	6,33E-02
Material for recycling	kg	0,00E+00	7,47E-02	4,74E-01	5,48E-01
Materials for energy recovery	kg	0,00E+00	0,00E+00	1,09E-01	1,09E-01
Littering	kg	0,00E+00	8,44E-04	1,43E-01	1,44E-01
Exported energy, electricity	MJ	-	-	-	-
Exported energy, thermal	MJ	-	-	-	-

Other environmental indicators

Energy content of product: 23 MJ

Content of recycled material of product: 61 %

References

ISO 14020:2002. Environmental labels and declarations. General principles.

ISO 14025:2010. Environmental labels and declarations. Type III environmental declarations. Principles and procedures

ISO 14040:2006. Environmental management. Life cycle assessment. Principles and framework.

ISO 14044:2006/A1:2018. Environmental management. Life cycle assessment. Requirements and guidelines.

General Programme Instructions of the International EPD[®] System. Version 3.01.

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Life Cycle Analysis of the packaging GREEN BOX G70. Version 1, 2021-07-06.

