noma

Environmental Product Declaration

LAIME Armchairs

In accordance with ISO 14025

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

EPD®

Programme:	**The International EPD® System, www.environdec.com**
Programme operator:	**EPD International AB**
EPD registration number:	**S-P-03871**
Publication date:	**2021-05-25**
Valid until:	**2026-05-25**

The visual of the product may not be compatible with the product information which is registered.

The environmental impacts of this product have been assessed from cradle to grave.
Environmental Product Declaration has been verified by an independent third party.

For more information about this Environmental Product Declaration or its content,
please contact hello@noma-editions.com

Programme information

The LCA for this EPD is conducted according to the guidelines of ISO 14040/44 and the requirements given in the Product Category Rules (PCR) document for Seats, (ver. 3.0) and the general program guidelines by The International EPD System in accordance with ISO 14025 standards.

The LCA and EPD have been prepared by Coopérative Mu.

The inventory for the LCA study is based on the 2020 production figures for LAIME armchairs manufactured by Noma Editions in their supplier production plants located in France.

This LCA was modelled with SimaPro 9.1 LCA software using the impact factors and Ecoinvent database (ver. 3.5) for secondary data.

The programme operator address is the following : EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: info@environdec.com

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

The EPD owner NOMA Editions has the sole ownership, liability and responsibility of the EPD.

Product Category Rules (PCR)	PCR Seats 2009:02 (version 3.0) UN CPC 3811
PCR review conducted by	The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com.
Independent third-party verification of the declaration and data, according to ISO14025:2006	EPD verification
Third party verifier	M. Damien PRUNEL from LCIE Bureau Veritas as an individual independent verifier approved by: The International EPD®SystemTechnical Committee, supported by the Secretariat
Procedure for follow-up of data during EPD validity involves third party verifier	Yes No

Product information

EPD owner

This EPD is owned by Noma Editions which may be contacted by mail : bruceribay@noma-editions.com or guillaumegalloy@noma-editions.com

Company information

NOMA manufactures high-quality furniture and everyday objects, conceived by today's influential designers. At the heart of the approach of its founders, Guillaume Galloy and Bruce Ribay, is purely ecological design, from A to Z .
In its first collection, NOMA wanted above all to promote the use of recycled materials through their design.
Creation was totally free and their focus on an ecological conception sought to minimize the environmental impact of the products created by their designers.

NOMA means "noble materials." Its founders come from the luxury and green-design sectors, and intend to change our outlook on recycled materials, which are a veritable treasure-trove for contemporary interiors.
NOMA's founders believe elegance means surrounding oneself with objects that are beautiful, virtuous and responsible. They are convinced that beauty is a powerful
vector of change.

About Noma

NOMA is a French high-end furniture and objects editor, imagined by renowned designers and made from recycled and bio-sourced materials.

Our whole project is about eco-responsibility and eco-conception. We are also the first editor whose furniture is made almost completely is France with recycled materials.

We want to encourage people to take a different perspective on recycled materials. Because elegance, according to NOMA, is to be surrounded by beautiful, virtuous and responsible objects.

To master this challenge, we have assembled a team of experienced and influential designers eager to combine creation of desirable objects with ecological responsibility.

Because we believe :

Beauty is the most powerfull change agent.

We must work towards circular economy models.

Everyone has the right to be transparently informed about what we do and how we do it.

Recycled materials are the noblest materials.

Guillaume Galloy and Bruce Ribay

More information on **www.noma-editions.com**

Production site

The structure is made in Saint Lubin de la Haye in France and the armchair LAIME is assembled in Montreuil in France.

Product description

LAIME is an armchair designed for residential and contract indoors use.
The seats and backs are upholstered either with an undyed French wool fabric, or with recycled plastic fabrics or with a fabric from Pierre Frey in recycled wool and the base is in recycled steel painted.

LAIME 42

Designed by Charlotte Juillard

42% recycled materials

Made in France.

Laime is a line of armchairs, fireside chairs and poufs.

The frame is made of recycled steel tubing. The seats and backs are covered by untinted French wool fabric.

Laime comes in models with and without armrests.

« At first glance, Laime seems to not take up the recycling challenge. The chair is made up of a tubular steel structure worked around the seat cushion on which the back is placed. The seat overflows the structure and seems to slide between the metal tubes. A crimped effect lends bounty and generosity to the whole. »

Charlotte Juillard

List of materials for LAIME armchair

Materials / chemical substances	kg	Environmental / hazardous properties
Wool	0,5	
Recycled foam	4	35% recycled
Wood	3,7	100% recycled
Steel, low alloyed	10,7	30% recycled
Paint	0,05	
Sheep leather	0,15	
Nylon	0,1	50% recycled
Polypropylene	0,05	
Steel (for screws)	0,1	
Total (furniture only)	19,35	
Polyurethane foam	0,77	
Polyethylene film	0,26	
Cardboard box	4,11	Average recycled rate
Paper	0,01	
Total (packaging only)	5,15	
Total (with packaging)	24,50	

System boundary

Upstream Process

Upstream processes include raw material extraction and production processes and manufacturing of auxiliary materials, chemicals and packaging materials.

Core Process

Core processes include transport of materials to the manufacturer and operations for manufacturing. Manufacturing includes sizing, welding, folding, wood cutting, removal of grease marks, spinning, combing, finishing, dying, vegetable tanning and painting of product parts and assembly. The end products are then packaged to be sold.
A polyester powder paint has been used for the metallic parts.

Downstream Processes

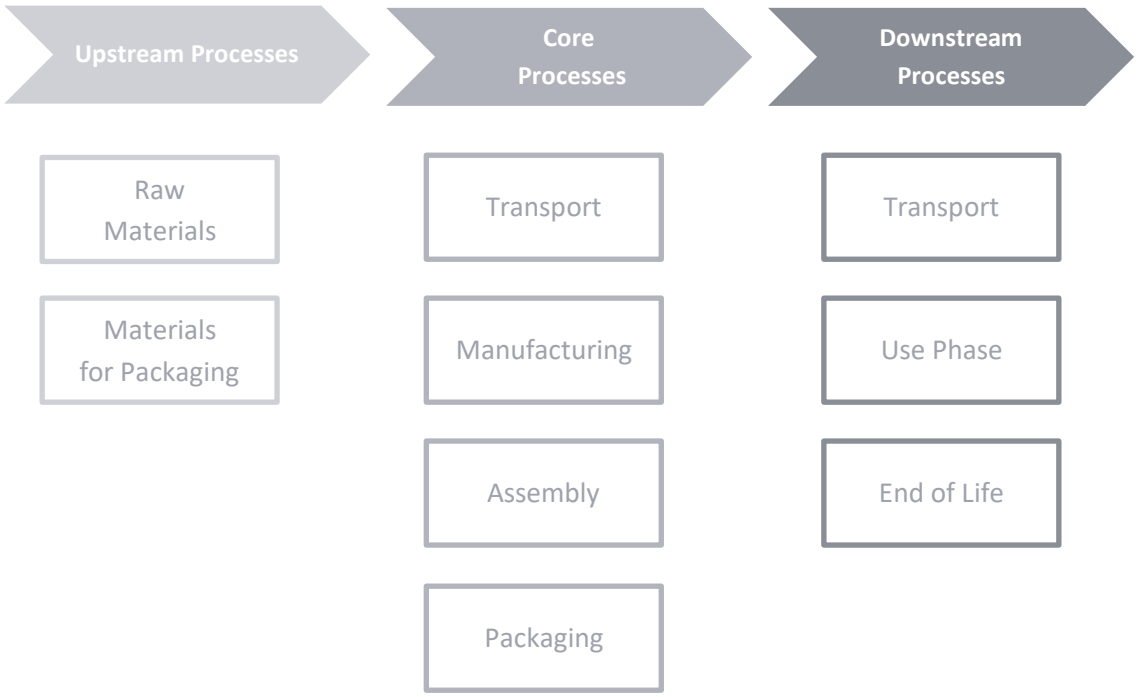
Downstream processes include transportation from manufacturer to consumer, product use and disposal of both product and packaging.

Distribution of final product to customer is assumed to be a default distance transport from France to France of 500 km by lorry.

During use phase of the product, no energy or water is consumed.

At the end of its life, it is expected from customers to dispose the product in accordance with the legal regulations of the country where they reside, in France, as it is assumed that the products are sold only in France. The product is easy to disassemble and recycle. For the disposal scenario of the product, French average recycling values from professional and individuals eco-organisms were taken only for steel, wood, textile and plastic parts as 20%, 18%, 9% and 18% respectively. These values are applied only on the caught rates of the old furniture from these eco-organisms, contributing in the reduction of the final recycling values. Other materials assumed to end up at landfill and incineration as 42% and 58% respectively.

Packaging waste is assumed to end up at packaging recycling streams.



Environmental Performance related information

Functional unit / Declared unit	The declared unit is the production of one unit of furniture with a minimum 7 years lifetime.
Goal and scope	This EPD evaluates the environmental impacts of one unit of furniture from cradle to grave life cycle perspective.
System boundary	The system boundary covers upstream, core and downstream processes within the life cycle.
Estimates and assumptions	Distribution of final product to customer is assumed to be a default distance transport from France to France of 500 km by lorry. During use phase of the product, no energy or water is consumed. At the end of its life, it is expected from customers to dispose the product in accordance with the legal regulations of the country where they reside, in France, as it is assumed that the products are sold only in France. The product is easy to disassemble and recycle. For the disposal scenario of the product, French average recycling values from professional and individuals eco-organisms were taken only for steel, wood, textile and plastic parts as 20%, 18%, 9% and 18% respectively. These values are applied only on the caught rates of the old furniture from these eco-organisms, contributing in the reduction of the final recycling values. Other materials assumed to end up at landfill and incineration as 42% and 58% respectively. Packaging waste is assumed to end up at packaging recycling streams.
Cut-off rules	For this LCA study, no cut off criteria was applied.
Background data	Ecoinvent, ver. 3.5, Switzerland
Data quality	Geographical representativeness When the information is available, the processes (in particular the energy mix) and transport distances are representative of their actual geographic location. Otherwise, inventories representative of the European or global market were considered. Temporal representativeness The primary data relate to the final version of the furniture and come from a collection carried out in June 2020. Most of the secondary data come from the Ecoinvent 3.5 database published in August 2018. For inventories absent from the Ecoinvent 3.5 database, the most recent possible external sources have been considered. Technological representativeness Most of the inventories of technical processes come from the Ecoinvent 3.5 database. For the inventories absent from the Ecoinvent 3.5 database, external sources as close as possible to the technologies actually used were considered.
Period under review	All primary data collected from Noma Editions is for the period year of 2020.
Allocations	The background data for this study comes from the Ecoinvent 3.5 Cut-Off database which uses different allocation factors to distribute the environmental impacts of multi-functional processes, the economic allocation being the choice by default. Due to the low density of the product, transport was allocated according to volume.

Environmental performance

The results of the LCA with the indicators as per EPD requirement are given in the following tables for upstream, core and downstream processes shown in the system boundary section.
Environmental impacts are calculated with the CML-IA baseline V4.1 except Human toxicity and Ecotoxicity with USEtox 2, Land use with ReCiPe 2016 Endpoint (H) v1.03, Water scarcity with AWARE v1.02.
Global warming potential is calculated with the IPCC 2013 baseline.
All resource use values are based on NF EN 15804+A1/CN.

Potential environmental impact

PARAMETER		UNIT	Upstream	Core	Down-stream	TOTAL
Global Warming potential	Fossil	kg CO2 eq	4.95E+01	1.81E+01	1.21E+01	7.98E+01
	Biogenic	kg CO2 eq	1.90E-01	4.14E-02	1.44E+00	2.05E+01
	Land use and land transformation	kg CO2 eq	3.68E+00	1.15E-01	8.68E-04	3.80E+00
	TOTAL	kg CO2 eq	7.22E+01	1.83E+01	1.35E+01	1.04E+02
Acidification potential		kg SO2 eq	5.43E-01	6.62E-02	1.91E-02	6.28E-01
Eutrophication potential		kg PO4 eq	2.26E-01	2.44E-02	4.12E-02	2.92E-01
Formation potential of tropospheric ozone		kg C2H4 eq	5.22E-02	1.11E-02	2.92E-03	6.62E-02
Abiotic depletion potential	Elements	kg Sb eq	2.68E-04	1.01E-04	7.66E-06	3.77E-04
	Fossil fuels	MJ, net CV	5.92E+02	2.60E+02	5.63E+01	9.08E+02
Water scarcity potential		m3	3.58E+01	1.29E+01	3.81E-01	4.91E+01
Human toxicity	Cancer	cases	8.01E-09	2.00E-09	8.77E-10	1.09E-08
	Non-cancer	cases	9.86E-09	1.17E-09	5.05E-09	1.61E-08
Fresh water ecotoxicity		PAF.m3.day	2.58E+00	9.09E-01	7.31E-03	3.50E+00
Land use		species.yr	3.44E-07	6.34E-09	1.76E-09	3.52E-07

Use of resources

PARAMETER		UNIT	Upstream	Core	Down-stream	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1.55E+02	2.46E+01	-2.97E+00	1.77E+02
	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	1.55E+02	2.46E+01	-2.97E+00	1.77E+02
Primary energy resources – Non renewable	Use as energy carrier	MJ, net calorific value	7.16E+02	3.55E+02	-4.78E+00	1.07E+03
	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	7.16E+02	3.55E+02	-4.78E+00	1.07E+03
Use of secondary material		kg	5.69E+00	0.00E+00	0.00E+00	5.69E+00
Use of renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of 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		m3	1.20E+00	3.89E-01	6.74E-03	1.59E+00

Waste production and output flows

Waste production

PARAMETER	UNIT	Upstream	Core	Down-stream	TOTAL
Hazardous waste disposed	kg	5.23E+00	1.40E+00	3.21E+00	9.84E+00
Non hazardous waste disposed	kg	2.14E+01	6.97E+00	1.21E+01	4.04E+01
Radioactive waste disposed	kg	1.55E-03	1.66E-03	-5.05E-04	2.70E-03

Output flows

PARAMETER	UNIT	Upstream	Core	Down-stream	TOTAL
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	2.14E-01	0.00E+00	5.56E+00	5.77E+00
Materials for energy recovery	kg	9.20E-01	0.00E+00	1.09E+01	1.19E+01
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

References

ISO 14025	DIN EN ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14040/44	DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework (ISO 14040:2006) and Requirements and guidelines (ISO 14044:2006)
PCR for Seats	Seats Product category classification: UN CPC 3811 2009:02 Version 3.0 Valid until: 2024-04-17
The International EPD® System	The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025 .www.environdec.com
Ecoinvent	Ecoinvent Centre, www.Eco-invent.org
Simapro	SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com
Recycling rates	For the furniture caught rates : Déchets d'éléments d'ameublement (DEA) – Rapport annuel, ADEME, 2018, available here : https://www.ademe.fr/sites/default/files/assets/documents/dea-donnees-2017-201808-synthese.pdf For the non-caught furnitures : Déchets - Chiffres clés, ADEME, 2017