Environmental Product Declaration

EPD on multiple products, based on a representative product.
In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Chipboard Kitchen Cabinet

Base Cabinet

from

kvik

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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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

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products (EN 15804+A2) (1.3.2)
PCR review was conducted by: The Technical Committee of the International EPD® System. Contact: info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: Annie Johansson, Oline Haggren & Pär Lindman, Miljögiraff Contact: oline@miljogiraff.se
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by individual verifier Third-party verifier: *Hudai Kara, PhD, Metsims Sustainability Consulting, Oxford, United Kingdom* Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (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 version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD:

Kvik A/S
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Contact:

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Description of the organisation:

Kvik is a Danish company that sells kitchen, bath and wardrobe interior, and the core values of their business concept is high quality and responsibility throughout the life cycle.

Product-related or management system-related certifications:

Danish indoor climate certificate & GPTW certification.

Name and location of production site(s):

The production site for the kitchen cabinets is at Kvik, located in Denmark.

Version history:

The original version of the EPD as published 2024-03-07. The difference from the original version is listed below:

- The total emission per kg product was added under the section “Additional information”.
- The lifetime of the product was changed from 15 to 20 years.
- The end-of-life treatment was changed from 100% incineration to 60% recycling and 40% incineration.

Product information

Product name:
Base Cabinet.

Product identification:
In this EPD, three kitchen cabinets are included, these are Base Cabinet, Tall Cabinet 1 & Tall Cabinet 2.

Product description:
The products included in this EPD are kitchen cabinets, with a core material of chipboard and an edge of melamine and ABS. The Base Cabinet has a total weight of 19 kg.

Product variations:
This multiple products EPD contains three types of kitchen cabinets from Kvik A/S. The result for the different kitchen cabinets included in this EPD differs less than 10% for GWP-GHG. *Base Cabinet* is the kitchen cabinet that has the highest production which is why this product is used as a representative product for this EPD. The product variations are as some difference regarding the material components and the amounts, but the core material is the same for all three types of cabinets included in this EPD.

UN CPC code:
UN CPC 38130

Geographical scope:
A1-A2 and A4 modules are modelled with a European scope. A3, A5, module C and D are modelled with a Danish scope.

LCA information

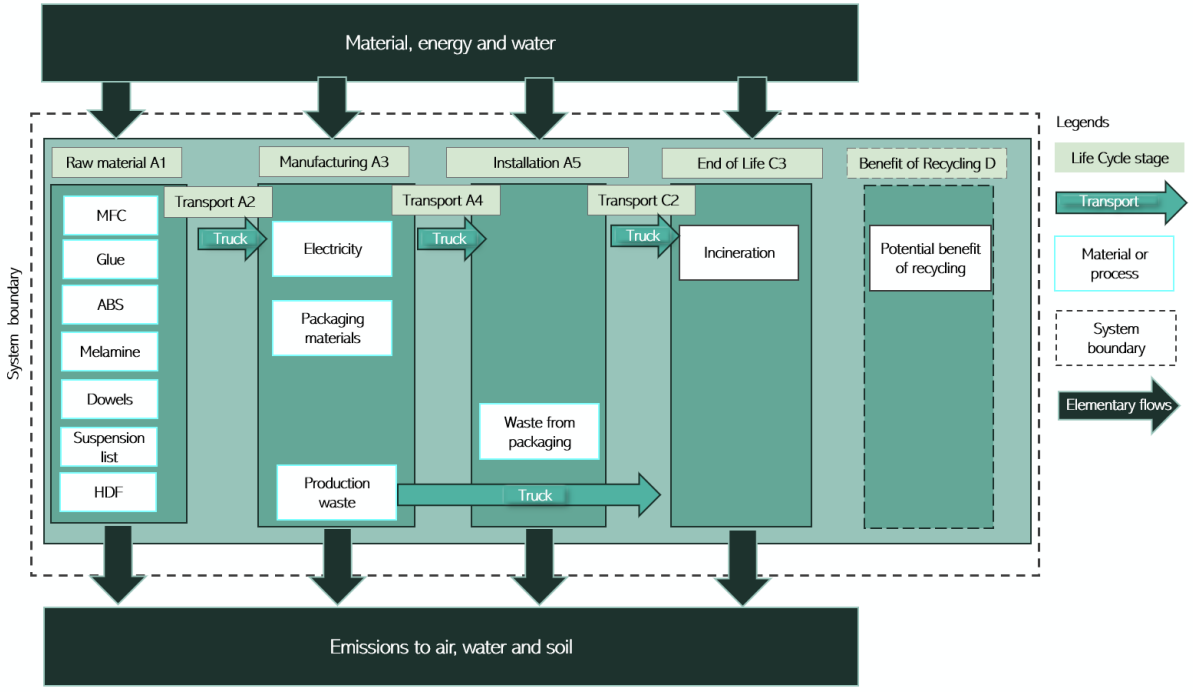
Functional unit / declared unit:
The functional unit is one kg of kitchen cabinet with a technical lifetime of 20 years. The weight of the product is 18.4 kg.

Time representativeness:
The gathered data represent average yearly data for 2022.

Database(s) and LCA software used:
Ecoinvent 3.9.1 and SimaPro 9.5.0.2

Description of system boundaries:
This EPD covers life cycle stages from cradle to grave and module D (A + B + C + D). The PCR for Construction Products requires that benefits and loads outside of the system boundary is calculated (D module). However, as it is outside of the system boundary, it is reported separately and shall not be summed up with the rest of the results.

System diagram:
The EPD follows the cradle-to-grave system boundaries as defined in the PCR. That means that all processes needed for raw material extraction, manufacturing, transport, and end-of-life are included in the study. See the system diagram below for information about included modules. Kitchen fronts are passive products and do not have any relevant environmental impacts during the use phase.



Raw material and manufacturing A1-A3
The kitchen cabinets are manufactured at Kvik, located in Denmark. The raw material is received and goes through a cutting process to shape the material into various sizes. In these processes electricity is needed, and waste occurs. The material is then edged, drilled and dowels are plugged in. The

finished cabinet is then packaged in a cardboard packaging and stored before being sent to the customer. The internal transports at Kvik are excluded because of the short distance and the use of hydro power for the electrical trucks.

The electricity consumption in the A3 module accounts for less than 30% of the GWP-GHG results of modules A1-A3. The energy source for the electricity is Danish hydropower. The climate change potential for the electricity consumption is 0,004 kg CO2 eq./kWh when using the GWP GHG indicator.

Transport to customer and installation A4-A5

The distribution of the finished kitchen cabinets is within Europe and the specific distribution is based on sales statistics from Kvik. Kvik distributes their kitchen fronts within Europe, where the biggest market is Denmark. Installation activities include only manual labour, therefore the only relevant aspect that is included are the disposal of packaging. The packaging is assumed to be either recycled or incinerated at the end-of-life. The cardboard packaging is assumed to have a recycling rate of 69.3% and the plastic packaging is assumed to have a recycling rate of 23.3%. Since the biggest market is Denmark, a Danish end-of life scenario has been applied regarding the cardboard packaging.

Product End-of-Life (C1-C4, D)

It is assumed that 60% of the wood is recycled and the rest of the cabinet is incinerated at the end-of-life. Module D includes the potential benefits or burdens from material recycling or energy recovery.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage									End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EUR	EUR	DK	EUR	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
Specific data used	25,65%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	No variation					-	-	-	-	-	-	-	-	-	-	-	-

Specific data:

The specific data in this report was calculated as the transport of raw materials, the energy production at Kvik, the production waste, as well as the packaging materials of the finished kitchen cabinet. The raw material was modelled based on generic data.

Content information

Product components	Weight, kg/m2	Post-consumer recycled material, weight-% of m2 product	Biogenic material, weight-% of m2 product	Biogenic material, kg C/m2 product
MFC Egger	1,56	27%	85%	0,04
MFC Pfleider	0,847	45%	85%	0,02
MFC Kronospan DK	9,12	65%	85%	0,23
MFC Kronospan Riga	4,72	30%	85%	0,12
Glue	0,027	0%	0%	0,00
ABS	0,04	0%	0%	0,00
Melamine	0,015	0%	30%	0,00
Dowels	0,02	0%	100%	0,00
Suspension list	0,84	0%	100%	0,05
HDF	1,17	0%	81%	0,06
TOTAL	18,359	44%	85%	0,52
Packaging materials	**Weight, kg/m2**	**Post-consumer recycled material, weight-% of m2 product**	**Biogenic material, weight-% of m2 product**	**Biogenic material, kg C/m2 product**
Cardboard box	0,46	70%	100%	0,02
TOTAL	0,46	70%	100%	0,02

The product does not exceed 0,1% of the weight of the product for any dangerous substances from the candidate list of SVHC for Authorisation

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804 + A2

Results per functional unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	6,06E-01	1,60E-01	6,48E-04	0,00E+00	0,00E+00	1,39E-02	1,28E-02	0,00E+00	-1,57E-01
GWP-biogenic	kg CO_2 eq.	-1,21E+00	1,46E-04	1,32E-02	0,00E+00	0,00E+00	1,22E-05	1,20E+00	0,00E+00	-5,57E-03
GWP-luluc	kg CO_2 eq.	1,13E-03	7,88E-05	4,46E-07	0,00E+00	0,00E+00	8,14E-06	1,44E-06	0,00E+00	-3,28E-04
GWP-total	kg CO_2 eq.	-6,03E-01	1,60E-01	1,38E-02	0,00E+00	0,00E+00	1,39E-02	1,21E+00	0,00E+00	-1,63E-01
ODP	kg CFC 11 eq.	1,77E-08	3,47E-09	5,92E-11	0,00E+00	0,00E+00	3,02E-10	2,35E-10	0,00E+00	-4,32E-09
AP	mol H^+ eq.	3,37E-03	3,49E-04	4,46E-06	0,00E+00	0,00E+00	2,95E-05	1,25E-04	0,00E+00	-1,75E-03
EP-freshwater	kg P eq.	2,43E-05	1,30E-06	1,04E-08	0,00E+00	0,00E+00	1,34E-07	7,77E-08	0,00E+00	-8,20E-06
EP-marine	kg N eq.	9,33E-04	8,59E-05	1,74E-06	0,00E+00	0,00E+00	6,65E-06	5,89E-05	0,00E+00	-2,38E-04
EP-terrestrial	mol N eq.	1,06E-02	8,94E-04	1,92E-05	0,00E+00	0,00E+00	6,95E-05	6,75E-04	0,00E+00	-3,30E-03
POCP	kg NMVOC eq.	4,14E-03	5,42E-04	5,88E-06	0,00E+00	0,00E+00	4,37E-05	1,79E-04	0,00E+00	-8,44E-04
ADP-minerals&metals*	kg Sb eq.	3,88E-06	5,22E-07	2,91E-09	0,00E+00	0,00E+00	6,06E-08	9,77E-09	0,00E+00	-3,75E-07
ADP-fossil*	MJ	1,06E+01	2,27E+00	8,33E-03	0,00E+00	0,00E+00	1,95E-01	3,86E-02	0,00E+00	-2,21E+00
WDP*	m^3	4,19E-01	9,34E-03	1,24E-04	0,00E+00	0,00E+00	8,08E-04	1,12E-03	0,00E+00	-3,42E-02
Acronyms		GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** 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.*

Additional mandatory and voluntary impact category indicators

Results per functional unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	6,12E-01	1,60E-01	6,51E-04	0,00E+00	0,00E+00	1,39E-02	1,28E-02	0,00E+00	-1,58E-01
PM	disease inc.	6,14E-08	1,18E-08	5,06E-11	0,00E+00	0,00E+00	7,34E-10	1,01E-09	0,00E+00	-1,44E-08
IR	kBq U-235 eq	1,47E-02	1,15E-03	9,41E-06	0,00E+00	0,00E+00	1,39E-04	4,55E-05	0,00E+00	-1,19E-02
ETP – FW	CTUe	4,06E+00	1,12E+00	2,20E-02	0,00E+00	0,00E+00	1,03E-01	7,31E-02	0,00E+00	-7,21E-01
HTP - C	CTUh	5,21E-09	7,27E-11	3,09E-12	0,00E+00	0,00E+00	7,05E-12	1,19E-10	0,00E+00	-8,10E-11
HTP - NC	CTUh	8,02E-09	1,61E-09	1,81E-11	0,00E+00	0,00E+00	1,36E-10	2,42E-10	0,00E+00	-1,97E-09
Land use, SQP	Pt	4,01E+01	1,37E+00	3,22E-03	0,00E+00	0,00E+00	8,12E-02	1,11E-02	0,00E+00	-8,58E+00
	Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017									
Acronyms	PM: Particulate Matter, IR: Ionizing Radiation - Human Health, ETP-FW: Ecotoxicity Potential – Freshwater, HTP-C: Human Toxicity Potential – Cancer, HTP-NC: Human Toxicity Potential – Non-Cancer, SQP: Soil Quality Potential Index									

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Resource use indicators

Results per functional unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	7,61E+00	3,56E-02	3,09E-04	0,00E+00	0,00E+00	4,25E-03	1,89E-03	0,00E+00	-2,83E+00
PERM	MJ	3,15E+02	0,00E+00	-8,14E+00	0,00E+00	0,00E+00	0,00E+00	-3,07E+02	0,00E+00	0,00E+00
PERT	MJ	3,23E+02	3,56E-02	-8,14E+00	0,00E+00	0,00E+00	4,25E-03	-3,07E+02	0,00E+00	-2,83E+00
PENRE	MJ	-4,32E+01	2,41E+00	8,87E-03	0,00E+00	0,00E+00	2,08E-01	4,17E-02	0,00E+00	-2,34E+00
PENRM	MJ	5,46E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,46E+01	0,00E+00	0,00E+00
PENRT	MJ	1,14E+01	2,41E+00	8,87E-03	0,00E+00	0,00E+00	2,08E-01	-5,45E+01	0,00E+00	-2,34E+00
SM	kg	8,51E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	3,74E-03	3,79E-04	1,08E-05	0,00E+00	0,00E+00	3,26E-05	4,36E-04	0,00E+00	-4,90E-04
Acronyms		PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water								

Waste indicators

Results per functional unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0
Non-hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0
Radioactive waste disposed	kg	0	0	0	0	0	0	0	0	0

Output flow indicators

Results per functional unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0,36	0	0	0	0	0	0
Materials for energy recovery	kg	0	0	0,00	0	0	0	0	0	0
Exported energy, electricity	MJ	1,94	0	0,40	0	0	0	55,93	0	0
Exported energy, thermal	MJ	7,75	0	1,60	0	0	0	223,72	0	0

Additional information

Results per functional unit													
Indicator	**Unit**	**Total**	**Product stage**			**Construction process stage**		**Use stage**	**End-of-life stage**				**Benefits and loads beyond the system boundary**
		A1-C4	**A1**	**A2**	**A3**	**A4**	**A5**	**B**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq./kg product	0,80	0,45	0,13	0,03	0,16	0,00	0,00	0,00	0,01	0,01	0,00	-0,16

References

General Programme Instructions of the International EPD® System. Version 4.0.
PCR 2019:14. Construction products. Version 1.3.1
ISO 14025:2006, 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, Environmental management — Life cycle assessment — Requirements and guidelines (pp. 1–54).
Life Cycle Assessment of kitchen fronts and cabinets by Kvik A/S, Miljögiraff, 2024.

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