SuMPO EPD JAPAN VERIFIED
SuMPO EPD Japan

Third party verified

Environmental Product Declaration

In conformance with

ISO14025 | ISO14040 | ISO14044

BROTHER INDUSTRIES, LTD.

MFC-L6900DW for Europe

※Remanufactured toner cartridge (printable pages: 20,000 pages) used.



Registration number	Verification date	Publication date	Expiration date	EPD type
SuMPO-EPD-2607-218-1	2026/7/27	2026/8/21 * First publication date	2031/7/26	Single Product EPD

Additional standards in conformance

ISO14067:2018

EPD can be updated or withdrawn during the validity period. To confirm the validity of this EPD, check the following website:
https://ecoleaf-label.jp/epd/search

●General Information

＞Programme

Programme name	SuMPO EPD Japan
Programme operator	Sustainable Management Promotion Organization (SuMPO)
Address	KANDA SQUARE GATE 4F, 14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo, 101-0047, Japan
Website	https://ecoleaf-label.jp

＞GPI and PCR

GPI	SuMPO EPD Japan General Program Instructions v.2.2.0
PCR name	Imaging input and/or output equipment products v.9.0.0
PCR registration number	PA-SuMPO-PCR-02001-9-0-0
PCR publication date	10/17/2025
PCR review panel chair	Ken Yamagishi（LCA Expert Center Co., Ltd.）
PCR valid until	10/16/2030
PCR issuer	Sustainable Management Promotion Organization (SuMPO)

＞Verification

Verification Type	Third-party verification in conformance with ISO14025		
	☐ Internal	■ External	
	■ Third-party verification by individual verifier	☐ Third-party verification by verification body	☐ Third-party verification by system certification
Verifier	Takahiro Atoh（Non profit organization Recycling System Center）		

＞Standards

Standards in conformance with;	■ ISO14040:2006	■ ISO14044:2006	■ ISO14067:2018
	■ ISO14025:2006	☐ ISO21930:2007	☐ ISO21930:2017
	☐ EN15804+A2	☐ EN50693:2019	☐ ISO/IEC63366:2025

EPD owner is responsible for the information contained in the EPD and for environmental claims related to the information. For any inquiries or requests regarding the content of the EPD, please contact the EPD owner.

EPDs are comparable only if they comply with this document, use the same sub-PCR where applicable, include all relevant information and are based on equivalent scenarios. Comparability of EPDs is limited to those applying a functional unit.

The LCIA results are relative expressions and do not predict impacts on category endpoints, the exceedance of thresholds, safety margins or risks.

When using weighted averages for calculation, the life cycle impact assessment results, life cycle inventory analysis-related information, waste-related information, and environmental information on output flows do not correspond to information about a specific product.

●EPD Owner's Information

Name of company and dept.	BROTHER INDUSTRIES, LTD. Environment & Climate Change Strategy Dept.
Address	15-1 Naeshiro-cho, Mizuho-ku, Nagoya, 467-8561, Japan
Contact	inml-ecoleaf-jimukyoku(at)brother.co.jp
LCA practitioner	Shuichi Kato (BROTHER INDUSTRIES, LTD.)
Company description	The Brother Group's mission is to place our customers first everywhere, every time and provide them with superior value by quickly creating and delivering high-quality products and services. We offer products and services with our distinctive expertise in a wide range of fields, such as printers and All-in-Ones, labeling systems and label printers, coding & marking equipment, digital printing equipment, garment printers, machine tools, industrial sewing machines, gearmotors and gears, home sewing machines.

●Product Information

Product name		MFC-L6900DW for Europe		
Product /model number		MFC-L6900DW		
Product specification	Mass	18.9kg	Conversion factor	18.9kg/unit
	Function	Print/Copy/Scan/FAX/Automatic duplex printing/Automatic document feeding, Maximum Paper Size A4, Print Speed: 50ppm(A4)		
	Applications	Used for printing documents and photos, duplicating documents, digitizing images and documents, sending faxes, and more in homes and offices.		
	TS*	Method (EP)		
Service life	Service life	5 years		
	In-use conditions	32 (jobs/day) × 39 (sheets/job) × 1/4 × 5 (days/week) × 4 (weeks/month) × 12 (months/year) × 5 (years) = 374,400 pages		
	reference	Scenario for Printers and Multifunction Devices (EP Method) of Imaging input and/or output equipment products v.9.0.0		
Manufacturing site(s)		Vietnam Factory (Hai Phong City, Vietnam), Slovakia Factory (Krupina, Slovakia) Toner Manufacturing Plant, Photoconductor Manufacturing Plant		
Product description		Monochrome laser multifunction device		
Website		https://global.brother/en		

* TS: technical specifications,

●Product Content

Product components	Proportion (%)	Mass (unit)	
Steel	20.8	3.93	kg
SUS	0.4	0.08	kg
Aluminium	0.5	0.10	kg
Other metal	0.0	0.00	kg
Plastic	61.1	11.56	kg
Rubber	1.0	0.18	kg
Glass	4.8	0.90	kg
Paper and Wood	0.4	0.07	kg
Circuit board	5.2	0.99	kg
Others	5.8	1.10	kg
Packaging materials	Proportion (%)	Mass (unit)	
Plastic	24.8	0.89	kg
Paper and Wood	73.6	2.64	kg
Others	1.6	0.06	kg

●Biogenic Carbon Content

Item	Content (kg-C)	Content (kg-CO_2 eq)
Biogenic carbon content per product	0.01	0.03
Biogenic carbon content in packaging	0.02	0.08

●LCA-related Information

＞EPD Type Information

EPD type	Product type	■ Single product EPD	☐ Multiple products EPD	☐ Industry-wide EPD	
	Site type	☐ Single site	■ Multiple sites		
	Value	■ Specific	☐ Average	☐ Representative	☐ Worst case
Geographical coverage		Europe			
Description of representativeness for multiple-products/sites EPD		The main unit (including the replacement photoconductor cartridge), remanufactured toner cartridges, toner, and photoconductors are manufactured at separate production sites. Since each product is manufactured at a single site, the data collected are considered representative of the respective product and are assessed as adequately reflecting actual production conditions.			
Description of variation for multiple-products/sites EPD		–			
Description of products covered in the multiple products EPD		–			

＞LCA Information

Functional unit		Per unit of product		
Mass per declared unit (Conversion factor to mass)		18.9kg		
Reference flow (number of products required to fulfil the function)		–		
System boundary		☐ Cradle-to Gate	☐ Cradle-to-Gate with options	■ Cradle-to-Grave
LCA software		MiLCA Cloud Edition, ver. 1.2.3.0		
LCI database		IDEA3.5.1		
Characterization model		Climate change: IPCC Sixth Assessment Report (IPCC, 2021); Other impact areas: LIME2		
Use of other background data		–		
Secondary data quality		The calculation was performed using data that met the secondary data quality standards specified in the GPI.		
Primary data collection sites		Toner and photoreceptor production plants, product assembly plant and remanufactured toner cartridge plant		
Primary data collection period		From April 2021 to March 2026		
Biogenic carbon		☐ 0/0 approach	■ -1/+1 approach	
Information about electricity	Use	■ Average consumption mix	☐ Others	
	Type	–		
	Purchase date	–		
	Issuing body	–		

＞Life Cycle Stages

Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
■	■	■	■	■

■ : declared stage　　– : stage not declared

＞Allocation

Following the procedure described in the GPI, process subdivision and allocation were examined. Allocation was applied to the following processes because avoiding allocation through process subdivision was not feasible.
- The discrepancy between the actual measured mass of the product and the mass registered in the environmental system must be within 5%, and should be allocated within 1%.
- Factory load according to production volume
- The packaging materials for toner and photoconductors are allocated based on the amount used per unit.

＞Cut-off rules

- The burden of packaging and transportation materials used when procuring input materials from external sources.
- The burden of auxiliary materials.
- The burden related to the transportation process of "parts," "materials," "packaging materials," and "accessories."
- The burden related to product storage, warehouse management during transportation, sales, and installation processes.
- The burden related to the proper disposal of "waste" at the raw material procurement and manufacturing stages.
- The burden related to parts assembly.
- The burden related to manufacturing losses.

The impact of the cut-off is less than 5%, and therefore does not affect the results of the life cycle assessment.

＞System Boundary

The settings were made based on the PCR. No items defined as out-of-boundary processes in the GPI or PCR were included in the calculation. The temporal system boundary is 100 years.

＞Scenario

Manufacturing Stage
- The transportation distance for the disposal of the used packaging materials is 100 km.

Distribution Stage
- This product is intended for Europe.
- The transportation distance for the product from the warehouse to the customer is 400 km.

Use Stage
- All replacement toner cartridges are remanufactured.
- Remanufactured toner cartridges are manufactured in Slovakia and transported to customers in Germany.
- Printable pages for remanufactured toner cartridges: 20,000 pages
- Toner cartridge replacements: 18.12 times
- Photoconductor drum cartridge replacements: 11.48 times
- Print pattern: ISO/IEC 19752
- Printing paper is not included in the environmental impact.
- Power consumption is calculated according to the usage conditions specified in the product information.
- Applied ENERGY STAR program: Ver. 3.2
- Used remanufactured toner cartridges are consolidated at the Slovakia plant via collection centers within Europe after being collected from customers in Europe.
- The transportation distance for the disposal of used supplies is 100 km.

End-of-Life Stage
- The transportation distance for the disposal of the product is 100 km.
- The environmental burden of remanufactured toner cartridges was calculated based on actual recovery and replacement rates.

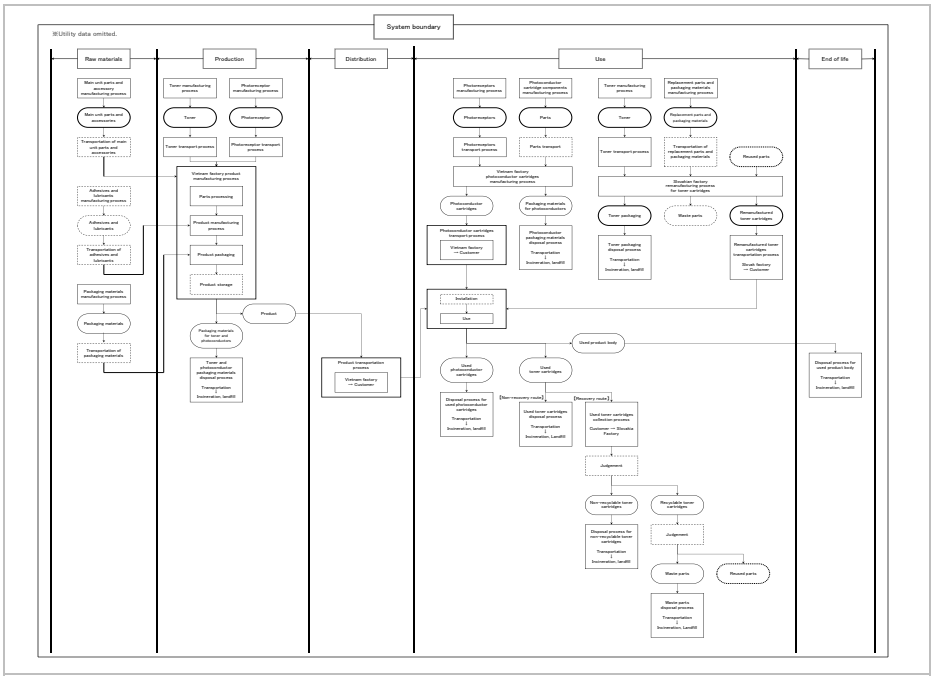
＞Electricity Modelling

For all targeted life cycle stages, appropriate regional unit values were allocated for the calculations.

Manufacturing Stage
- Electricity, Japan average, FY2022, JPN
- Electricity, Ember, People's Republic of China, 2022, CHN
- Electricity, Ember, Vietnam, 2022, VNM

Use Stage
- Electricity, Japan average, FY2022, JPN
- Electricity, Ember, People's Republic of China, 2022, CHN
- Electricity, Ember, Vietnam, 2022, VNM
- Electricity, Ember, Germany, 2022, DEU
- Electricity, Ember, Slovakia, 2022, SVK
- Solar power, grid electricity, GLO (Slovakia)

＞Life Cycle System Diagram



●LCA Result

＞LCIA Indicators

		Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
GWP - total	kg-CO_2eq	1.19E+02	6.26E+00	1.41E+01	3.47E+02	4.20E+01
GWP - fossil	kg-CO_2eq	1.18E+02	6.39E+00	1.41E+01	3.46E+02	3.83E+01
GWP - biogenic	kg-CO_2eq	4.63E-02	-1.46E-01	5.30E-04	1.12E-01	3.66E+00
GWP - land use and land use change	kg-CO_2eq	2.04E-01	1.34E-02	2.43E-03	1.00E+00	7.19E-03
ODP: Ozone depletion potential	kg-CFC-11eq	1.06E-05	1.42E-08	9.52E-11	6.94E-06	9.68E-09
EP: Eutrophication potential	kg-PO_4^3-eq	8.16E-03	2.15E-05	5.10E-08	5.77E-03	1.62E-05
AP: Acidification potential	kg-SO_2eq	2.87E-01	1.60E-02	8.92E-03	6.38E-01	2.07E-02
POCP: Photochemical oxidant creation potential	kg-C_2H_4eq	3.95E-03	4.10E-05	9.50E-05	5.24E-03	5.24E-05
Optional indicators						
GWP - aircraft	kg-CO_2eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

＞LCI - Primary Resource Use

		Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
RPR_E*	MJ	4.63E+02	6.98E+01	2.86E-02	2.95E+03	1.19E+01
RPR_M*	MJ	5.77E+00	2.93E-01	1.14E-04	3.05E+01	2.13E-03
$NRPR_E$*	MJ	2.26E+03	9.09E+01	1.53E+02	5.99E+03	6.16E+01
$NRPR_M$*	MJ	6.90E+02	8.22E-01	3.17E-04	7.88E+02	4.11E-02

*RPRE: Renewable primary resources used as an energy carrier, RPRM: Renewable primary resources with energy content used as material, NRPRE: Non-renewable primary resources used as an energy carrier, NRPRM: Non-renewable primary resources with energy content used as material.

＞LCI - ADP-fossil and Consumption of freshwater

		Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
Consumption of freshwater resources	㎥	2.06E+00	4.05E-02	5.70E-03	4.95E+00	2.13E-02

＞Waste Indicators

		Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.89E-01
Non-hazardous waste disposed	kg	2.14E+00	3.13E-02	5.51E-03	7.16E+00	1.14E+00
High-level radioactive waste	㎥	1.78E-09	3.43E-11	1.08E-13	4.99E-09	4.63E-11
Intmd. and low-level radioactive waste	㎥	1.82E-06	3.50E-08	1.13E-10	5.09E-06	4.72E-08

＞Description of LCA Results

Since general values (unit values) are used, the specific characteristics of the materials used in this product may not be reflected.
Therefore, please use these results as approximate values.

●Additional Environmental Information

＞Additional Environmental Information not related to LCA

The assembly and production of this product, as well as the manufacturing of key components, are carried out at factories certified under ISO 14001.
This product complies with the EU RoHS Directive.
The mass of hazardous waste is defined as the mass of component parts, such as substrates containing lead (Pb).

＞Information on Hazardous Substances

Hazardous materials name	CAS No.	Standards or regulations
Pb	7439-92-1	PRTR Law (Pollutant Release and Transfer Register Law)

●Definitions of Terms

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●References

・ISO14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures
・ISO14040:2006 Environmental management - Life Cycle Assessment - Principles and framework
・ISO14044:2006 Environmental management - Life Cycle Assessment - Requirements and guidelines
・ISO14067:2018 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification

●Version History

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