SuMPO EPD JAPAN VERIFIED

SuMPO EPD Japan

Third party verified

Environmental Product Declaration

In conformance with

ISO14025 | ISO14040 | ISO14044

KYOCERA Document Solutions Inc.

ECOSYS PA4500x (US)

Monochrome Printer ECOSYS PA4500x (US)



Registration number	Verificartion date	Publication date	Expiration date	EPD type
SuMPO-EPD-2610-268-1	11/13/2026	11/27/2026	11/12/2031	Single Product EPD

* First publication date

Additional standards in conformance

None

EPD can be updated or withdrawn during the validity period.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 Sub-PCR v9.0.0
PCR registration number	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	Shino Nishikimi (JAPAN QUALITY ASSURANCE ORGANIZATION)		

＞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.	KYOCERA Document Solutions Inc.
Address	1-2-28 Tamatsukuri, Chuo-ku, Osaka 540-8585, Japan
Contact	Reliability Assurance Section 21　+81-6-6764-3764
LCA practitioner	Hiromu Ibaragi (R&D Office)
Company description	Group Companies: 96　Group Employees: 21,076 (As of March 2026) Our Business: Development, Manufacturing and Sales of Printing Products (MFPs, Printers), Commercial and Industrial Printing, Business Solutions, Application Software and Supply products Production Sites: Tamaki Plant, Hirakata Plant (Japan), China Plant, Vietnam Plant

●Product Information

Product name		ECOSYS PA4500x (US)		
Product /model number		ECOSYS PA4500x		
Product sepcification	Mass	19.56 kg	Conversion factor	-
	Function	Monochrome A4 printer Printing speed: Monochrome 45 pages per min. in A4 Printing pager: Maximum Folio (Legal) Duplex function: Standard		
	Applications	Printing in large quantity and continuous printing at low cost		
	TS*	Method: Electrophotographic Printer (EP)		
RSL (Reference Service Life)	Service life	5 years		
	In-use conditions	Total lifetime print volume: 297,600 pages Number of images per day* x 1/4 x 5 (days/week) x 4 (weeks/month) x 12 (months/year) x 5 (years) = 297,600 pages (Number of images per day*(= jobs/day x images/job)		
	reference	Based on the estimated period of use for Printers and Multifunction Devices (EP method) as defined in Sub-PCR for Imaging input and/or output equipment products v.9.0.0		
Manufacturing site(s)		Vietnam plant Hai Phong City, Vietnam		
Product description		Product destination: North America Printing speed: Monochrome 45 pages per minute in A4 Printing paper: Maximum Folio (Legal) Duplex function: Standard		
Website		https://www.kyoceradocumentsolutions.com/global/ja/index.html		

* TS: technical specifications,

●Product Content

Product components	Proportion (%)	Mass (unit)	
Steel	27.9	4.32	kg
SUS	0.7	0.10	kg
Cu	5.8	0.90	kg
Al	1.7	0.26	kg
Thermoplastics resin	49.4	7.65	kg
Thermosetting resin	0.2	0.03	kg
Rubber	0.2	0.03	kg
Paper	1.0	0.15	kg
Assembled circuit board	6.2	0.96	kg
Medium-sized motor	3.9	0.61	kg
Glass	3.1	0.49	kg
Wood	0.0	0.00	kg
Othe electric electronic component	0.0	0.01	kg
Packaging materials	Proportion (%)	Mass (unit)	
Thermoplastics resin	4.1	0.17	kg
Paper	95.9	3.89	kg

●Biogenic Carbon Content

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

●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	
Geographical coverage		North America		
Description of representativeness for multiple-products/sites EPD		–		
Description of variation for multiple-products/sites EPD		–		
Description of products covered in the multiple products EPD		–		

＞LCA Information

Declared unit		Per unit of product		
Mass per declared unit (Conversion factor to mass)		19.56 kg (Conversion factor to mass: -)		
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 for EPD		
LCI database		IDEA Ver3.1.0		
Characterization model		Climate change: IPCC the Sixth Assessment Report (IPCC, 2021) Othe impact areas: LIME2		
Use of other background data		–		
Secondary data quality		Calculation was conducted by using data that meet the secondary data quality requirements specified in the GPI.		
Primary data collection sites		Toner and drum production plants Product assembly plant		
Primary data collection period		October 2022 ～		
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

In this calculation, process subdivision and allocation were examined by the procedures described in GPI. Since other products were also manufactured, collecting the primary data only for the subject product was difficult, allocation was applied based on production time and the number of units produced for the subject products.

＞Cut-off rules

Stages, processes and flows that are subject to cut-off specified by PCR
(Cut-off rules 5%)

＞System Boundary

Based on the PCR, all items defined as out-of-boundary were set as out-of-boundary.
The temporal system boundary is 100 years.

＞Scenario

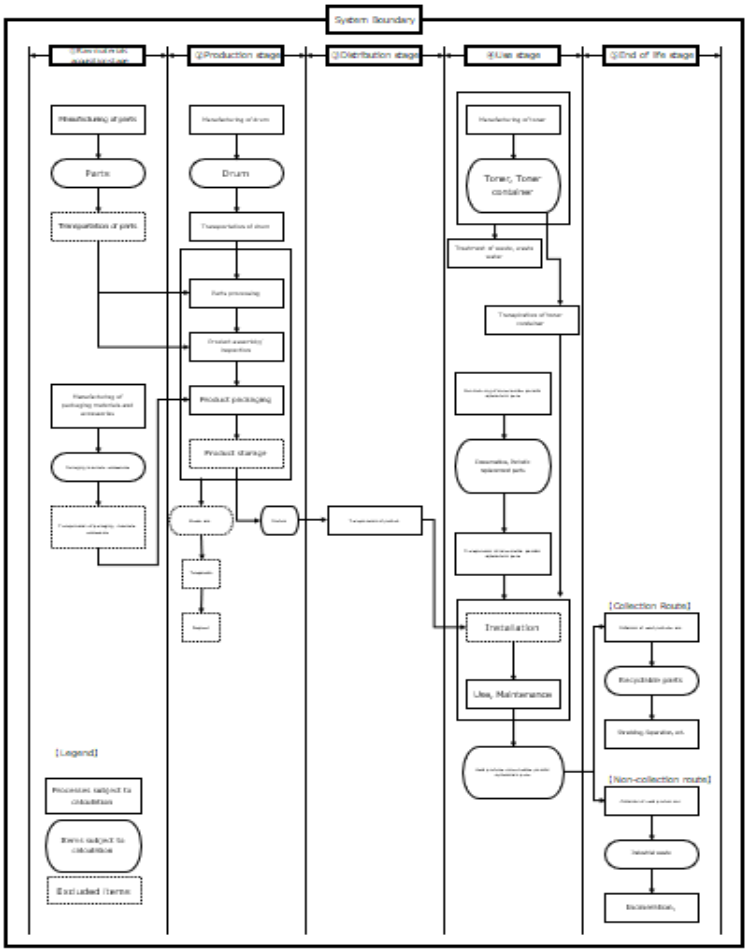
【Distribution Stage】
Means of transportation, Loading rate: Applied PCR scenarios.
Transportation distance: Applied PCR scenarios and internal company's scenarios.
【Use & Maintenance Stage】
Means of transportation, Loading rate: Applied PCR scenarios.
Transportation distance: Applied PCR scenarios and internal company's scenarios.
- Confirmed to the International ENERGY STAR Ver3.2 Program.
- Lifetime electricity consumption
[148.08 kWh] = TEC [0.617 kWh/week] x 4 weeks x 12 months x 5 years
- The impact of printing paper is not included.
- Consumables, Periodic replacement parts
Toner container
Printable pages : 12,500 pages Number of lifetime usage : 23.808 toner containers
- Consumables will be shipped directly from the factory to the country of sales separately from the product body and al of them are accounted in the use and maintenance stage.

【End-of-Life Stage】
Means of transportation, Loading rate: Applied PCR scenarios.
Transportation distance: Applied PCR scenarios and internal company's scenarios.
Product take back rate: Applied PCR senarios (40%)

＞Electricity Modelling

For the targeted life cycle stages, conducted the calculation by applicable IDEA Ver3.1.0 (Electricity Japan average FY2018 JPN and so on).

＞Life Cycle System Diagram



●LCA Result

＞LCIA Indicators

		Total	Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
GWP	kg-CO_2eq	3.24E+02	1.01E+02	6.14E+00	1.45E+01	1.73E+02	2.93E+01
Ozone layer depletion	kg-CFC-11eq	3.39E-05	1.85E-05	9.70E-07	1.60E-10	1.37E-05	6.63E-07
Acidification	kg-SO_2eq	8.51E-01	1.06E-01	1.79E-02	1.00E-02	6.77E-01	3.97E-02
Photochemical oxidants	kg-C_2H_4eq	5.88E-03	3.94E-03	8.02E-05	4.20E-05	1.74E-03	9.02E-05
Eutrophication	kg-PO_4^{3-}eq	2.12E-02	1.02E-02	1.11E-04	1.45E-10	1.09E-02	1.47E-05

＞LCI

		Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
Use of non-renewable resources	kg	1.47E+01	9.31E-02	1.20E-05	5.67E+00	1.01E+00
Use of non-renewable energy	MJ	1.84E+03	9.49E+01	2.02E+02	3.32E+03	1.19E+02
Use of renewable resources	kg	2.76E+01	5.70E-03	3.08E-06	6.94E+01	9.47E-03
Use of renewable energy	MJ	2.12E+02	3.06E+01	4.14E-03	4.86E+02	1.74E+01
Consumption of freshwater resources	m^3	-	-	-	-	-

＞Waste Indicators

		Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
hazardous waste disposed	kg	-	-	-	-	-
non-hazardous waste disposed	kg	-	-	-	-	-

*It indicates the amount of waste generated throughout the lifecycle.

＞Description of LCA Results

Since general values (IDEAv3 intensity) are used, the specific characteristics of the materials used in this product my not be reflected.
Therefore, please use these results a approximate values.

●Additional Environmental Information

＞Additional Environmental Information not related to LCA

・Manufactured at ISO14001 certified factories.
・Halogenated flame retardants are not used in plastic housing and outer package.

＞Information on Hazardous Substances

Hazardous materials name	CAS No.	Standards or regulations
-	-	-
-	-	-
-	-	-

●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

●Version History

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