SuMPO EPD Japan

Third party verified

Environmental Product Declaration

In Conformance with

ISO14025 | ISO14040 | ISO14044

RISO KAGAKU CORPORATION

ComColor FT5231E II

Registration number	Verificartion date	Publication date	Expiration date	EPD type
SuMPO-EPD-2602-113-1	2026/2/25	2026/3/23 * First publication date	2031/2/24	Single Product EPD

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EPD can be updated or withdrawn during the validity period.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.2.1.1
PCR name	Imaging input and/or output equipment
PCR registration number	SuMPO-PCR-02001-9-0-0
PCR publication date	2025/10/17
PCR review panel chair	Ken Yamagishi（LCA expert center Co., Ltd.）
PCR valid until	2030/10/16
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	Yumiko Umehara (Value Frontier Co., Ltd.)		

＞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.	RISO KAGAKU CORPORATION
Address	Riso Research and Design Center, 2-8-1 Gakuen-minami, Tsukuba-shi, Ibaraki 305-0818, Japan
Contact	+81-29-850-5314
LCA practitioner	Kazuki Nomura（Product Environment Section）
Company description	Business Operations: Development, manufacturing, and sales of high-speed inkjet printer "ORPHIS," digital duplicator "RISOGRAPH," along with related hardware, equipment, and consumables.

Product Information

Product name		ComColor FT5231E II		
Product /model number		FT5231E II		
Product sepcification	Function	154kg	Conversion factor	None
	Mass	High-Performance Inkjet Printer		
	Applications	Print office documents like meeting materials at high speed and low cost.		
	TS*	-		
RSL (Reference Service Life)	Service life	5 years		
	In-use conditions	TEC measurement conditions comply with the International ENERGY STAR Program's operational rules (specifically, Table 2-3: Measurement Method for Imaging Equipment under the Operational Rules of the International ENERGY STAR Program for Imaging Equipment, effective June 1, 2020).		
	reference	Based on the estimated period of use for printers and multi-function devices (High performance Inkjet) as defined in the PCR for Imaging Equipment.		
Manufacturing site(s)		Tsukuba Works Plant No. 2 and No. 3		
Product description		Product Type: High-Performance Inkjet Printer Maximum paper size (standard cassette):340 mm × 550 mm (Straight Feed / Simplex) Printing Method: High-Performance Inkjet		
Website		https://us.riso.com/		

* TS: technical specifications,

Product Content

Product components	Propotion (%)	Mass (unit)	
SUS	1.5	1.87	kg
Aluminium	2.5	3.06	kg
Rubber	0.5	0.67	kg
Others	0.1	0.10	kg
Other Metals	2.3	2.90	kg
Plastic	23.7	29.34	kg
Paper, Wood	0.7	0.91	kg
Circuit Board	7.5	9.27	kg
Copper	4.3	5.35	kg
Steel	56.9	70.52	kg
Packaging materials	Propotion (%)	Mass (unit)	
Rubber	0.0	0.00	kg
Others	3.4	1.02	kg
Plastic	11.2	3.37	kg
Paper, Wood	61.5	18.45	kg
Cardboard	23.9	7.17	kg
Steel	0.0	0.00	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		
	Value	■ Specific	☐ Average	☐ Representative	☐ Worst case
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		1unit	
Mass per declared unit (Conversion factor to mass)		154kg	
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 Ver.3.1	
LCI database		AIST-IDEAv3.1	
Characterization model		LIME2、IPCC 2013 GWP 100a	
Use of other background data		–	
Secondary data quality		Calculations were conducted using data that meet the secondary data quality requirements specified in the GPI.	
Primary data collection sites		Tsukuba Works Plant No. 2 and No. 3	
Primary data collection period		April 1, 2024 – March 31, 2025	
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 following the procedures outlined in the GPI. In the manufacturing processes for the main unit and ink, other inkjet printer products are generated as co-products. Since avoiding allocation through process subdivision was difficult, and the economic value of the product in this application is equivalent to that of the other inkjet printers from the same process, physical allocation was applied.

＞Cut-off rules

Transport-related impacts for components, raw materials, packaging, and accessories.

＞System Boundary

【Target Life Cycle Stages】
The assessment covers all mandatory life cycle stages: Raw Material Acquisition, Manufacturing, Distribution, Use and Maintenance, and End-of-Life (Final Treatment).

【Temporal System Boundary】
The temporal boundary for the system is set at 100 years, beginning from the year of primary data collection.

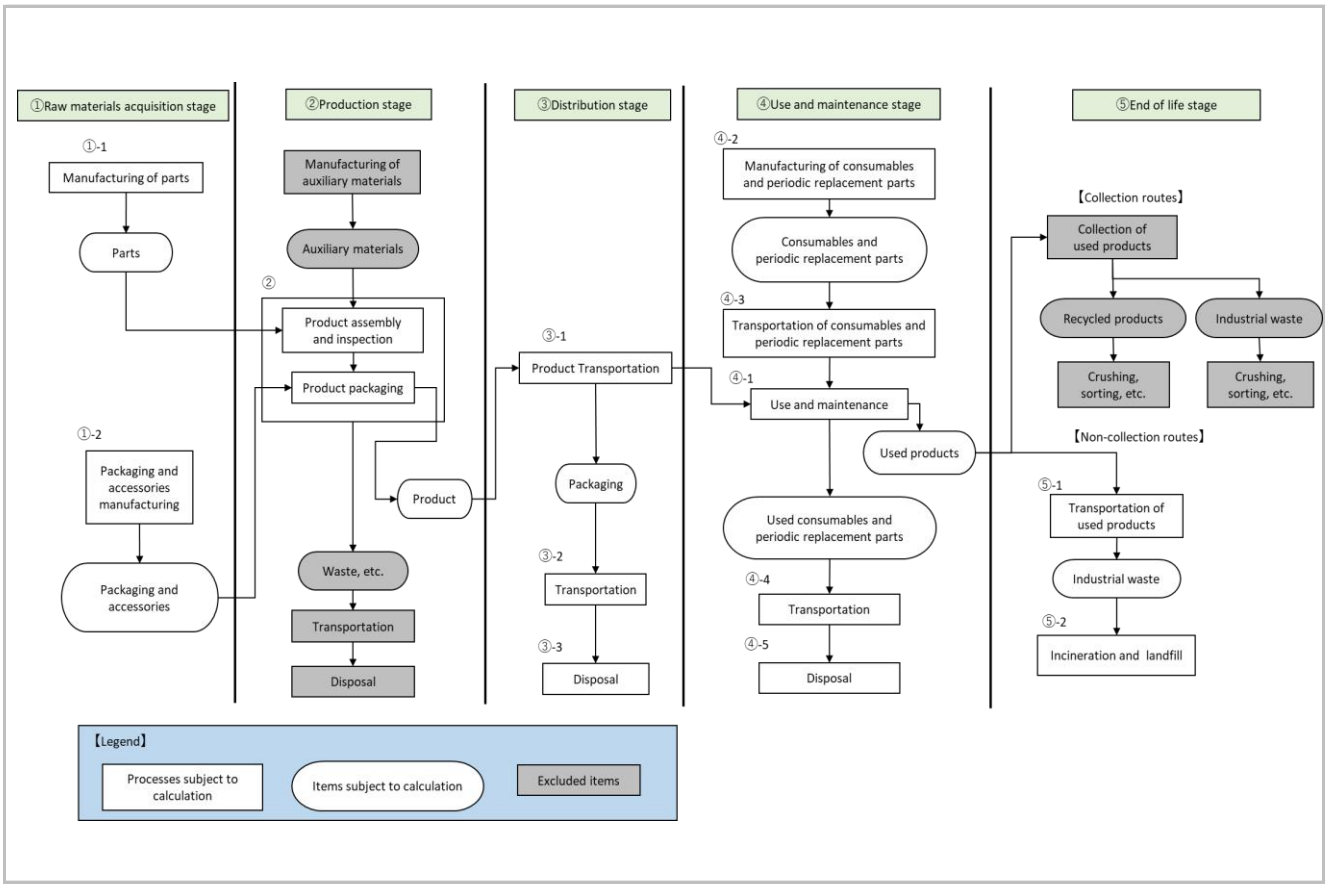
＞Scenario

【Distribution Stage, Use and Maintenance Stage】
Transportation Mode & Loading Rate: PCR scenarios applied.
Transportation Distance: Both PCR and internal company scenarios applied.
【End-of-Life Stage】
Transportation Mode, Loading Rate, & Distance: PCR scenarios applied.

＞Electricity Modelling

【Calculation Data Sources】
Use and Maintenance Stage:Public Electricity, USA (IEA, 2015)
Other Stages:Grid Electricity, Japan Average (FY2018)

＞Life Cycle Sytem Diagram



●LCA Result

＞LCIA Indicators

		Total	Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
GWP	kg-CO_2eq	1.74E+03	9.93E+02	4.91E+01	1.05E+02	4.80E+02	1.10E+02
Ozone layer depletion	kg-CFC-11eq	2.71E-04	2.23E-04	6.92E-06	8.82E-07	3.93E-05	1.03E-06
Acidification	kg-SO_2eq	3.29E+00	1.08E+00	3.67E-02	2.94E-01	1.77E+00	1.10E-01
Urban air pollution	kg-SO_2eq	2.42E+00	8.07E-01	2.49E-02	1.24E-01	1.40E+00	6.22E-02
Photochemical oxidants	kg-C_2H_4eq	4.85E-02	3.88E-02	5.94E-04	6.35E-04	8.16E-03	3.27E-04
Hazardous chem. - carcinogeni	kg-C_6H_6eq	1.69E+00	1.55E+00	7.47E-04	1.70E-02	1.07E-01	1.74E-02
Hazardous chem. - chronic	kg-C_6H_6eq	3.49E-02	3.04E-02	1.57E-04	3.05E-04	3.99E-03	1.18E-04
Aquatic ecotoxicity	kg-C_6H_6eq	8.01E+00	6.98E+00	5.58E-02	7.12E-03	9.58E-01	8.57E-03
Terrestrial ecotoxicity	kg-C_6H_6eq	1.66E+02	1.16E+02	1.35E+00	1.68E-01	4.82E+01	1.97E-01
Eutrophication	kg-PO_4^{3-}eq	9.64E-01	8.53E-02	1.74E-06	2.94E-06	8.78E-01	3.29E-06
Land use - maintenance	m^2/year	1.42E+02	8.81E+01	1.43E-01	6.00E+00	4.68E+01	8.80E-01
Land use - modification	m^2	1.41E+00	4.00E-01	3.94E-03	1.20E-01	8.68E-01	1.77E-02
Resource consumption	kg-Sbeq	1.20E-01	1.14E-01	2.87E-04	4.00E-04	4.62E-03	1.61E-04

＞LCI

		Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
Use of non-renewable resources	kg	1.71E+02	3.80E-01	1.99E+00	1.16E+01	2.08E+00
Use of non-renewable energy	kg	4.02E+02	1.76E+01	2.90E+01	2.16E+02	1.14E+01
Use of non-renewable energy	MJ	1.62E+04	7.50E+02	1.30E+03	9.03E+03	5.03E+02
Use of renewable resources	kg	2.03E+02	3.06E-02	1.67E-02	6.28E+01	1.84E-02
Use of renewable energy	MJ	2.35E+03	1.83E+02	2.26E+01	1.22E+03	2.64E+01
Consumption of freshwater resources	m^3	7.09E+01	4.41E-03	6.18E-03	2.54E+01	5.99E-03

＞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	0.00E+00
non-hazardous waste disposed	kg	3.36E+01	3.48E-03	1.43E-01	3.42E+00	9.36E+01
Municipal waste, landfill	kg	1.49E-04	1.32E-12	1.56E-12	6.10E-07	2.03E-12
Industrial waste, landfill	kg	3.36E+01	3.48E-03	1.43E-01	3.42E+00	9.36E+01

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

＞Output Flow Indicators

			Raw materials acquisition stage	Production stage	Distribution stage	Use stage	End of life stage
Components for reuse		kg	–	–	–	–	–
Materials for recycling		kg	–	–	–	–	–
Material for energy recovery		kg	–	–	–	–	–
Exported energy from waste (energy recovery efficiency≧60%)		MJ	–	–	–	–	–
Incineration of waste (energy recovery efficiency＜60%)	Waste disposed	kg	–	–	–	–	–
	Recovered energy	MJ	–	–	–	–	–
Waste disposed in landfill and energy recoved from landfill gas	Waste disposed	kg	–	–	–	–	–
	Recovered energy	MJ	–	–	–	–	–

＞Description of LCA Results

Since generic values (emission factors) are used, the specific characteristics of the materials used in this product may not be fully reflected. Therefore, please use these results as an approximation.

・Product destination: North America
・Calculation method for use and maintenance stage: Based on PCR scenarios
・Assumed product lifespan: 5 years
・Total lifetime print volume: 2,160,000 sheets
・Applied International ENERGY STAR Program version: Version 3.2
・Environmental impact of printing paper during the use and maintenance stage is not included.
・Product selected for the impact calculation scenario: High-Performance Inkjet

●Additional Environmental Information

＞Additional Environmental Information not related to LCA

＞Information on Hazardous Substances

Hazardous materials name	CAS No.	Standards or regulations

●Definitions of Terms

●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