

Product Environmental Aspects Declaration



RICOH
Image Communication



EP (Electrophotographic Printer) and
IJ (Ink Jet) printer

High Speed Network Printer

IPSiO NX810

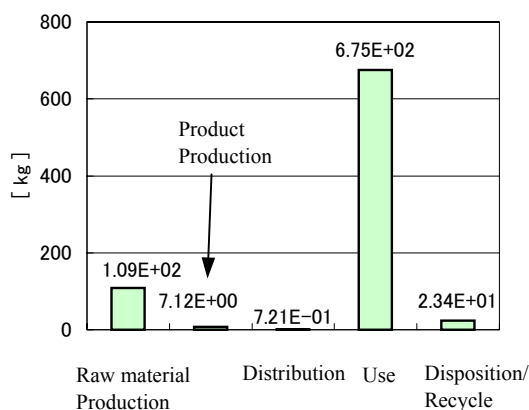
- Coping Speed: 32 A4 copies per minute (A4 paper, Horizontal feed, continuous operation)
- Maximum Paper Size A3

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The number of prints when used for 5 years is 384,000.
The main environmental burdens are as follows:

- Global Warming (CO2 equivalent) 852 kg
- Acidification (SO2 equivalent) 1.08 kg
- Energy Consumption 16900 MJ

Emission of Global Warming Gas (CO2 equivalent)



Notes:

1. Visit EcoLeaf website under JEMAI homepage at http://www.jemai.or.jp/ecoleaf_e/ for full details including below.
2. Original LCA data is available on PEIDS: Product Environmental Information Declaration Sheet, and Product Data Sheet.
3. Unified rules and requirements for EcoLeaf LCA, for intended product category, are available as a PSC: Product Specification Criteria.
4. All Basic Units are based on Japan domestic data. This is due to a lack of base data for full establishment of localized Basic Unit for overseas locations for now.

[Supplemental environmental information]

- EcoMark-certified
- Acquired ISO14001 certification for domestic sales group companies, as well as all domestic and international production bases.
- Conforms to the International Energy Star Program.
- Uses chromium-free steel sheets: does not use hexavalent chromium during production of steel sheets. Use of chromium-free steel sheets is more than 90%.

Product Environmental Information Data Sheet (PEIDS)



Document control no.	
Product vendor	RICOH COMPANY, LTD.
EcoLeaf registration	AD-02-002

Unit Function DB ver.	020601
Characterization Factor DB ver.	020601

PSC name	EP(Electrophotographic Printer) and IJ(Ink Jet)		Product type	IPSiO NX810			
PSC code	PSC-AD	Product weight (kg)	40.0	Package (kg)	8.49	Weight total (kg)	48.5

In/Out items	Life Cycle Stage	Unit	Production		Distribution	Use	Disposition/Recycle	Total			
			Raw material	Product							
Energy Consumption											
		MJ	2.56E+03	5.17E+02	1.02E+01	1.41E+04	-2.06E+02	1.69E+04			
		Mcal	6.11E+02	1.23E+02	2.44E+00	3.36E+03	-4.92E+01	4.05E+03			
Inventory analyses	Resource Consumption from the environment	Energy	Coal	kg	2.55E+01	3.32E+00	2.38E-05	6.55E+01	-3.02E+00	9.14E+01	
			Crude oil (as fuel)	kg	1.96E+01	4.04E+00	2.22E-01	1.19E+02	-2.83E-01	1.43E+02	
			Natural Gas	kg	3.13E+00	2.19E+00	3.44E-03	3.99E+01	2.24E-01	4.54E+01	
			Uranium ore	kg	2.52E-04	2.25E-04	1.61E-09	3.96E-03	3.38E-05	4.47E-03	
			Crude oil (as an ingredi	kg	1.40E+01	0	0	1.67E+01	-2.78E+00	2.79E+01	
		Iron ore	kg	2.66E+01	0	0	6.55E+00	-4.46E+00	2.87E+01		
		Copper ore	kg	2.64E-01	0	0	2.10E-03	-1.38E-02	2.52E-01		
		Bauxite	kg	2.01E-01	0	0	5.09E-01	-2.10E-02	6.89E-01		
		Nickel ore	kg	3.21E-02	0	0	9.51E-02	-9.05E-05	1.27E-01		
		Chromium ore	kg	5.22E-02	0	0	1.31E-01	-1.65E-03	1.82E-01		
	Manganese ore	kg	1.40E-01	0	0	6.01E-02	2.03E-02	2.21E-01			
	Plumbous ore	kg	6.85E-03	0	0	1.71E-04	-1.12E-03	5.90E-03			
	Tin ore	kg	0	0	0	0	0	0			
	Zinc ore	kg	6.74E-02	0	0	1.68E-03	-1.10E-02	5.80E-02			
	Gold ore	kg	0	0	0	0	0	0			
	Silver ore	kg	0	0	0	0	0	0			
	Silica sand	kg	4.34E-01	0	0	1.08E-01	-8.51E-03	5.34E-01			
	Rock salt	kg	3.53E+00	0	0	3.01E+00	1.19E-02	6.55E+00			
	Limestone	kg	5.15E+00	0	0	1.54E+00	-3.71E-01	6.32E+00			
	Natural soda ash	kg	1.25E-02	0	0	2.27E-03	-5.41E-04	1.42E-02			
	Renewable resources	kg	1.50E+01	0	0	1.77E+01	-2.97E+00	2.98E+01			
	Water	kg	6.03E+03	2.58E+03	1.76E-02	5.31E+04	5.29E+02	6.22E+04			
Inventory analyses	Emission/Discharge to the environment	to Atmosphere	CO ₂	kg	1.39E+02	2.81E+01	7.18E-01	6.63E+02	5.62E+00	8.36E+02	
			SO _x	kg	6.66E-02	1.97E-02	8.82E-04	4.06E-01	6.50E-03	5.00E-01	
			NO _x	kg	1.57E-01	1.96E-02	1.11E-02	6.30E-01	7.55E-03	8.26E-01	
			N ₂ O	kg	1.10E-02	2.10E-03	1.30E-05	4.39E-02	-9.74E-04	5.61E-02	
			CH ₄	kg	6.70E-04	6.01E-04	4.31E-09	1.06E-02	9.06E-05	1.19E-02	
			CO	kg	1.78E-02	4.08E-03	4.39E-03	8.40E-02	1.55E-03	1.12E-01	
			NMVOC	kg	1.31E-03	1.18E-03	8.44E-09	2.07E-02	1.77E-04	2.34E-02	
			CxHy	kg	5.67E-03	3.54E-04	2.22E-04	1.09E-02	-5.75E-04	1.66E-02	
			Dust	kg	1.94E-02	8.53E-04	8.81E-04	3.09E-02	-1.49E-03	5.05E-02	
			BOD	kg	—	1.28E-04	—	7.68E-04	—	—	
	COD	kg	—	—	—	—	—	—			
	N total	kg	—	—	—	—	—	—			
	P total	kg	—	—	—	—	—	—			
	SS	kg	—	6.45E-06	—	3.87E-05	—	—			
	Unspecified solid waste	kg	8.87E-01	2.10E-03	0	1.01E+01	1.78E+01	2.88E+01			
	Slag	kg	7.94E+00	0	0	2.04E+00	-1.33E+00	8.66E+00			
	Sludge	kg	2.60E-01	0	0	1.09E+00	-4.49E-02	1.31E+00			
	Low emission radioactive waste	kg	1.76E-04	1.57E-04	1.13E-09	2.77E-03	2.37E-05	3.12E-03			
	Impact assessment	by Resource Consumption	Exhaustible resources	Energy resources (crude oil equivalent)	kg	1.10E+02	0	0	9.36E+01	-1.02E+01	1.93E+02
				Mineral resources (Iron ore equivalent)	kg	4.18E+01	1.07E+01	2.26E-01	2.42E+02	-1.67E+00	2.93E+02
by Emission/Discharge to the environment		to Atmosphere	Global warming (CO ₂ equivalent)	kg	1.42E+02	2.87E+01	7.21E-01	6.75E+02	5.36E+00	8.52E+02	
			Acidification (SO ₂ equivalent)	kg	1.77E-01	3.34E-02	8.66E-03	8.48E-01	1.18E-02	1.08E+00	
			kg								
			kg								
			kg								
			kg								
			kg								

Notes:

I. Stage related

A. "Production" stage is intended for two sub-stages listed below.

(1) "Raw material" production: consists of mining, transportation and raw material production.

(2) "Product" production: consists of the parts processing, assembly and installation.

B. "Distribution" stage is intended for transportation of produced product. Transportation of consumables and maintenance goods (e.g. replacement parts) for use of the product are included into "Use" stage.

C. "Use" stage is intended for use of the product (active mode, standby mode, etc.) and production, transportation to disposal/recycle of consumables/maintenance goods (e.g. replacement parts).

D. "Disposition/Recycle" stage is intended for environmental impacts by product disposition/recycle, and deduction by recycling (e.g. impact reduction of raw material production).

II. Inventory analyses

A. Data of mineral ore on "Exhaustible resources" are presented in weight of pure ingredients (e.g. iron, aluminum) in the ore.

B. Data of discharge to water system are in actual figure (not calculated using unit function in inventory analyses).

III Impact analyses

Result of the "Impact analyses" is found in converting results of inventory analyses into total amount of a reference material (e.g. CO₂ in case of "Global Warming").

A. Impact "by resource consumption" represents magnitude of impacts to resource depletion.

B. Impact "by emission/discharge to environment" represents magnitude of impacts to Atmosphere, Water and Soil system.

IV Data entry format

A. Exponential notation, after the decimal point to two, should be used.

B. Indicate "0" instead exponential notation, if the result of calculation or estimation is considered as "zero" or negligible in comparison to related results.

C. Indicate "NA" if calculation nor estimation can not be done, in order to differentiate to indicate "zero".

D. Row total of the data is automatically calculated, excluding a row includes "NA" item. Row total of such is presented as a blank (no data).

[Descriptions]

*The values of inventory analysis and impact evaluation in this sheet are calculated using the LCI basic unit and classification coefficient of the "Ecoleaf" environmental label.

1. The product weight is the standard equipment, including a feed unit, of the main unit excluding options, and packaging includes the weight of the packaging materials, access

2. Production Stage

The production stage includes the main body assembling burden and the production burden for the toner, carrier, and photoreceptors needed when purchased by a customer

3. Distribution Stage

Standard 10T trucks are used. Delivery distance is 100 km based on PSC regulations.

4. Use Stage

Based on the PSC regulations, consumption of electric power, consumable supplies, and replacements are calculated with the assumption that the duration of service is 5 years and the total number of prints is 384,000.

For consumable supplies (toner, carrier, photoconductors, and maintenance kits) and replacements, the burdens for production, disposal recycle, and transportation are calc

5. Disposal and Recycle Stage

Based on the PSC regulations, burden is calculated assuming a product collection rate of 40%, and with regards to uncollected products, unburnable is buried, and burnable i

For plastic recycling, based on processing at our affiliated recycle centers, environmental burden is calculated using the basic unit of "Recycle: to Thermoplastic resin" for recycled material (average processing weight rate of product recycling: 75%), and the basic unit of "Incineration: Industrial waste" for feed stock (the average processing weight rate of product recycling: 17%) and energy recovery (processing weight rate: 11%).

6. For inventory analysis, an environmental emissions burden for water areas is partially calculated at the product production and use stages, which is derived from actual measurement data at our production sites (data actually required by laws and regulations etc. to be measured).

The summary here is incomplete in terms of the product's life cycle stage, since there is no data other than actual counted items, and the data relating to environmental emissions burden for water areas in the EcoLeaf basic unit (shown as "-" and no numeric values) is incomplete. However, as the purpose of Ecoleaf is information disclosure, we felt we should specify the above-mentioned conditions and disclose the PEIDS and other data sheets.

Product data sheet

(Input data and parameters for LCA)



Document control no.	
Product vendor	RICOH COMPANY, LTD.
EcoLeaf registration no.	AD-02-002

PSC name	EP(Electrophotographic Printer) and IJ(Ink Jet)		Product type	IPSiO NX810	
LCA/LCIA in units of:	PSC-AD	Product weight (kg)	40.0	Package (kg)	8.49
				Weight total (kg)	48.5

1. Product information (per unit): parts etc. by material and by process/assembly method

Product	Breakdown of primary materials				Math breakdown of parts, which need to apply Processing / Assembly Base Units (Parts B, C)			
	Material name	Weight (kg)	Material name	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)
	Steel	24.5	Wood	0	Press molding: Iron	24.4	Parts assembly	28.8
	SUS	0.200	Paper	6.99	Press molding: Nonferrous	0.243		
	Aluminium	0.115	Print-wired board	0.331	Injection molding	14.0		
	Other metals	0.128	Medium-sized motor	0.905	Blow molding	0.0845		
	Thermoplastic resin	15.2			Glass molding	0.0511		
	Thermosetting resin	0.00654						
	Glass	0.05						
	Rubber	0.0525						
	Subtotal	40.3	Subtotal	8.23				
	Total			48.5	Subtotal	38.8	Subtotal	28.8

Note

2. Production site information (per unit): Consumption and discharge/emission for production/processing/assembly within the site.

SOx and NOx should be indicated in SO2, NO2 equivalent.

Consumption	Classification	Energy	Energy	Energy	Resources	Resources	Resources		
	Distribution	Electricity(kWh)	Kerosine as fuel(kg)	Furnace urban gas (13A)(m3)	Clean water(kg)	Industrial water(kg)	Underground water(kg)		
	Quantity	10.1	0.230	0.667	12.4	50.4	77.7		
	Note								
Emission/Discharge	Classification	Water system	Water system						
	Distribution	BOD(g)	SS(g)						
	Quantity	0.128	0.00645						
	Note								

Note

3. Distribution stage information (per unit): means, distance, loading ratio, consumptions and emissions/discharges.

Distribution	Means of transportation										
	Conditions	Weight(kg)	Distance(km)	Installation Rate(1/hw)	Load(kg·km)						
	Quantity	48.5	100	52.4	9,259						
	Note										

Note

4. Use stage (per unit): use condition (mode, term) including active mode, standby mode and maintenance.

4.1 Product and accessories subject to this analysis

Product	Classification	Energy	Energy	Energy	Energy	Resources	Resources	Resources	Material	Material
	Distribution	Electricity(kWh)	Kerosine as fuel(kg)	Furnace urban gas (13A)(m3)	Gasoline as fuel(kg)	Clean water(kg)	Industrial water(kg)	Underground Water(kg)	Steel(kg)	SUS(kg)
	Quantity	1015	0	9.636685347	28.1	0	0	466	7.10	0.601
	Note									
Product	Classification	Material	Material	Material	Material	Material	Material	Material	Molding	Molding
	Distribution	Aluminium(kg)	Other Metals(kg)	Thermoplastic resin(kg)	Thermosetting resin(kg)	Glass(kg)	Rubber(kg)	Paper(kg)	Press molding: Iron(kg)	Press molding: Nonferrous metal(kg)
	Quantity	0.581	0	23.3	0	0.0395	0	9.02	5.73	0.589
	Note									
Product	Classification	Molding	Molding	Molding	Assembly	Water system	Water system			
	Distribution	Injection molding(kg)	Blow molding(kg)	Glass molding(kg)	Parts assembly(kg)	BOD(g)	SS(g)			
	Quantity	7.68	3.21	0.0395	11.46	0.768	0.0387			
	Note									

Note

4.2 Disposition/Recycle information on consumables and replacement parts

Consumables	Classification	Processing	Processing	Processing	Processing	Processing	Processing	Processing	Processing	
	Distribution	Crushing(kg)	Sorting: Iron by magnetic force(kg)	Sorting: Nonferrous metal by eddy current with wind force(kg)	Sorting: Plastics by relative density difference in water(kg)	Recycle: to Glass(kg)	Recycle: to cold-rolled steel(kg)	Recycle: to Aluminum plate(kg)	Recycle: to copper plate(kg)	Recycle: to Thermoplastic resin(kg)
	Quantity	17.0	5.39	3.19	2.97	0	2.20	0.223	0.00323	2.45
	Note									
Consumables	Classification	Processing	Processing	Processing	Processing	Processing				
	Distribution	Recycle: to corrugated cardboard(kg)	Landfill: Industrial waste(kg)	Incineration: Industrial waste(kg)	Landfill: General waste(kg)	Incineration to landfill (in ash)(kg)				
	Quantity	3.61	0.193	0.777	7.26	10.4				
	Note									
Consumables	Classification	Deduction	Deduction	Deduction	Deduction	Deduction	Deduction	Deduction		
	Distribution	Glass(kg)	Cold-Rolled steel plate(kg)	Aluminum plate(kg)	Copper plate(kg)	PC(kg)	PE(kg)	Corrugated cardboard(kg)		
	Quantity	-0.0125	-0.991	-0.100	-0.00145	-0.699	-0.160	-1.26		
	Note									

Notes

5. Disposition/Recycle stage information (per product): process method and scenarios

Scenario	Means of transportation										
	Classification	Weight(kg)	Distance(km)	Installation Rate(1/hw)	Load(kg·km)						
	Distribution	40.5	35.0	100	1418						
	Note										
Scenario	Classification	Processing	Processing	Processing	Processing	Processing	Processing	Processing	Processing	Processing	
	Distribution	Crushing(kg)	Sorting: Iron by magnetic force(kg)	Sorting: Nonferrous metal by eddy current with wind force(kg)	Sorting: Plastics by relative density difference in water(kg)	Recycle: to Glass(kg)	Recycle: to cold-rolled steel(kg)	Recycle: to Aluminum plate(kg)	Recycle: to copper plate(kg)	Recycle: to Thermoplastic resin(kg)	
	Quantity	40.4	16.0	6.47	6.33	0.0205	9.53	0.0440	0.101	4.61	
	Note										
Scenario	Classification	Processing	Processing	Processing	Processing	Processing					
	Distribution	Recycle: to corrugated cardboard(kg)	Landfill: Industrial waste(kg)	Incineration: Industrial waste(kg)	Landfill: General waste(kg)	Incineration to landfill (in ash)(kg)					
	Quantity	6.33	0.791	1.80	15.6	8.70					
	Note										
Scenario	Classification	Deduction	Deduction	Deduction	Deduction	Deduction	Deduction	Deduction			
	Distribution	Glass(kg)	Cold-Rolled steel plate(kg)	Aluminum plate(kg)	Copper plate(kg)	PC(kg)	PE(kg)	Corrugated cardboard(kg)			
	Quantity	-0.00644	-4.29	-0.0198	-0.0457	-1.40	-0.219	-2.22			
	Note										

Notes

6. Others