Product Environmental Aspects Declaration

EP and IJ printer (PCR-ID:AD-04)



No. AD-14-372 Date of publication July / 2/ 2014



http://konicaminolta.jp

Please direct any inquiries or comments to e-mail: bt-environ@pub.konicaminolta.jp



Marking technologies	Electrophotographic Printer (EP)
Printing speed	250 ipm-per-minute(B/W)

Maximum copy paper SRA3

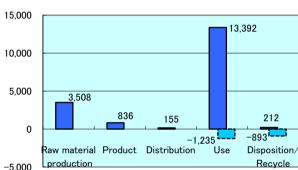
<u>Duplex copying</u> Standard equipment

Life Cycle Impact

'	o Oyolo Impaot	
	Consumption and discharge in a life cycle	All the stage sum totals
	Global warming(CO₂equivalent):kg	18,103
	Global Warthing GO 2 equivalent, kg	(15,974)
	Acidification(SO ₂ equivalent):kg	30.5
	Acidification(302equivalent).kg	(24.8)
	Energy resources(crude oil equivalent):MJ	345,486
	Litergy resources/crude oil equivalent/.ivio	(312,610)

※Figures in()indicated environmental impact including recycle effect *note3

Warming load CO₂ equivalent of each stage (kg)





Total of 37,500,000 sheets on the assumption of five years usage.

Environmental impact by copypaper is not included.

PF-703_RU-509_RU-510_LS-505_FS-532 is optional.

Notes:

- 1. Original LCA data is available on PEIDS: Product Environmental Information Declaration Sheet, and Product Data Sheet.
- 2. Unified rules and requirements for EcoLeaf LCA, for intended product category, are available as a PCR: Product Category Rule. Visit EcoLeaf website under JEMAI homepage at http://www.ecoleaf-jemai.jp/eng/ for details.
- 3. Recycle Effect illustrates an indirect influence to other products/services.
- 4. Basic Units used for calculations are based on Japan domestic data at this time, due to a lack of base data to establish localized Basic Unit for overseas locations adequately.
- 5. This declaration was produced using Product Category Rule intended for a product model sold in the Japanese market and using the qualitati and quantitative data collected in Japan.

[Supplemental environmental information]



- Certified Environmental Standards
 - · International Energy Star Program
- ●Conforming to Japanese Law on Promoting Green Purchasing

PCR review was conducted by : PCR Deliberation Committee, January 01, 2008, Name of reprentative : Youji Uchiyama, University of Tsukuba, Graduate School

Independent verification of the declaration and data, according to ISO14025 $\ \Box$ internal $\ \blacksquare$ external Third party verifier * : Shozo Nakamuta

Programme operator: Japan Environmental Management Association for Industry, ecoleaf@jemai.or.jp

^{*} In the case of an business entity certified as an Ecoleaf-data-collection system, the names of certification auditors are

Product Environmental Information Data Sheet (PEIDS)

Document control no.	F-02B-03	Unit Function DB version	2.1
Product vendor	KONICAMINOLTA,INC.	Characterization Factor DB version	2.1
EcoLeaf registration no.	AD-14-372	` <u> </u>	



	PCF	R nar	ne	EP and IJ print	er	Product type		biz	hub PRESS 22	250P	
	PC	R-I	D	AD-04		Product weight[kg]	768.0	Package[kg]	171.4	Weight total[kg]	939.4
	_			Life Cycle Stage		Produ	iction				
In/O	ut ite	ms			Unit	Raw material	Product	Distribution	Use	Disposal	Recycle
					MJ	5.18E+04	1.69E+04	2.08E+03	2.74E+05	5.05E+02	-3.29E+04
			nergy C	onsumption	Mcal	1.24E+04	4.04E+03	4.98E+02	6.55E+04	1.21E+02	-7.85E+03
				Coal	kg	7.31E+02	1.06E+02	4.87E-03	1.88E+03	2.31E+00	-5.02E+02
			Energy	Crude oil (as a fuel)	kg	4.00E+02	1.20E+02	4.55E+01	1.83E+03	5.98E+00	-2.01E+02
			Lileigy	Natural Gas	kg	9.29E+01	5.50E+01	7.02E-01	7.64E+02	1.21E+00	-6.86E+01
				Uranium ore	mg	9.88E-03	7.19E-03	3.30E-07	8.50E-02	1.56E-04	-1.86E-03
				Crude oil (as an ingredients)	kg	5.80E+01	0	0	2.47E+02	0	-7.93E+01
				Iron ore	kg	6.75E+02	0	0	2.15E+02	0	−3.55E+02
				Copper ore	kg	1.19E+01	0	0	9.78E-01	0	−4.15E+00
	_			Bauxite	kg	7.55E+00	0	0	1.70E+02	0	−7.10E+01
	nptio	Exhaustible resources		Nickel ore	kg	6.26E+00	0	0	9.37E+00	0	−6.25E+00
	nsur	xhaustible		Chromium ore	kg	8.70E+00	0	0	1.28E+01	0	-8.59E+00
	e env	ΘĒ		Manganese ore	kg	4.41E+00	0	0	2.62E+00	0	-1.12E+00
	Resource Consumption from the environment		Material	Plumbous ore	kg	4.87E-01	0	0	0	0	-1.20E-01
	Res			Tin ore	kg	0	0	0	0	0	1 105 100
				Zinc ore Gold ore	kg	4.79E+00	0	0	0	0	-1.18E+00
				Gold ore Silver ore	kg	0	0	0	0	0	0 0
				Silver ore Silica sand	kg kg	1.49E+01	0	0	4.34E+00	0	-3.89E+00
				Rock salt	kg kg	4.15E+01	1.26E-01	0	4.34E+00 4.30E+01	3.48E-01	-3.06E+01
ses				Limestone	kg	1.35E+02	0	0	4.65E+01	2.21E+00	-5.77E+01
Inventory analyses				Natural soda ash	kg	6.35E-01	0	0	2.27E-01	0	-1.77E-01
ory a		Renev	uoblo	Wood	kg	2.37E+02	0	0	5.71E+01	0	-1.18E+02
vent		resour		Water	kg	2.37E+05	1.03E+05	3.68E+00	1.31E+06	1.87E+03	-1.79E+05
드				CO2	kg	3.45E+03	8.31E+02	1.48E+02	1.32E+04	2.12E+02	-2.08E+03
				SOx	kg	2.14E+00	6.30E-01	8.78E-02	1.50E+01	1.18E-01	-3.45E+00
				NOx	kg	3.18E+00	5.15E-01	6.62E-01	1.31E+01	3.40E-01	-3.24E+00
				N2O	kg	1.97E-01	1.53E-02	2.54E-02	5.66E-01	5.48E-04	-1.88E-01
		to Atm	osphere	CH4	kg	2.62E-02	1.92E-02	8.81E-07	2.24E-01	4.18E-04	-3.65E-03
				СО	kg	5.40E-01	1.23E-01	1.66E-01	2.99E+00	8.47E-02	-7.31E-01
				NMVOC	kg	5.13E-02	3.77E-02	1.73E-06	4.39E-01	8.18E-04	-7.13E-03
	rge			СхНу	kg	1.04E-01	2.99E-03	2.05E-02	1.96E-01	2.99E-03	-8.01E-02
	Emission/Discharge to the environment			dust	kg	4.17E-01	2.71E-02	6.45E-02	1.13E+00	2.09E-02	-4.14E-01
	on/Di envir			BOD	kg	-	-	-	-	_	-
	nissik the			COD	kg	-	-	-	-	-	-
	E to	to Wa	ter system	N total	kg	-		-		_	
				P total	kg	-		-		_	
				SS	kg	-	-	-	-	-	-
				Unspecified solid waste	kg	1.21E+01	8.10E-01	0	3.26E+02	4.27E+02	-2.39E+01
		40.00	aught	Slag	kg	2.14E+02	0	0	6.96E+01	0	-1.08E+02
		เบ 50il	system	Sludge	kg	1.05E+01	0	0	3.64E+02	0	−1.50E+02
	-			Low emission radioactive waste	kg	6.91E-03	5.02E-03	2.30E-07	5.93E-02	1.09E-04	-1.30E-03
	onsumption	Exh	austible	Energy resources (crude oil equivalent)	kg	1.06E+03	3.14E+02	4.64E+01	4.65E+03	1.02E+01	−6.21E+02
ant	by Resource Consumption		ources	Mineral resources (Iron ore equivalent)	kg	8.23E+03	0	0	8.27E+03	0	-6.26E+03
Sm	L by			Global warming							
sse	tior		40	(CO2 equivalent)	kg	3.51E+03	8.36E+02	1.55E+02	1.34E+04	2.12E+02	−2.13E+03
Impact assesment	dunsu	Atmo	to osphere	Acidification (SO2 equivalent)	kg	4.37E+00	9.91E-01	5.52E-01	2.42E+01	3.56E-01	-5.72E+00
lmp	Emision Consumption		Water								
	nisi		stem								
	by En		Soil stem								

[Notes for readers: EcoLeaf common rules]

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)
- "Use" stage is intended for use of the product (active mode, standby mode, etc.) and production, transportation to disposal/recycle of consumables
- D. "Disposition/Recycle" stage is intended for environmental impacts by product disposition/recycle, and deduction by recycling
- E. "Recycle Effect" illustrates an indirect environmental influences to other products/services by use of reclaimed materials/parts, and/or by supply of
- Case 1: Use of reclaimed materials/parts: Sum of increase of environmental impact by collection activities of used materials/parts, and decrease
- Case 2: Supply of used products to other businesses for material reclaim/parts reuse: Sum of increase of environmental impact by materials/parts

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 on energy resources are presented based on origin in calorific value. e.g. Data on uranium ore presents weight of uranium concentrate,
- C. Data of discharge to water system are in actual figure (not calculated using unit function in inventory 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.

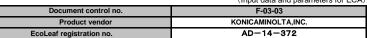
 C. Indicate "-" if calculation nor estimation can not be done, in order to differentiate to indicate "zero".
- - (BGD for material production are for production from mineral ore. Those data do not include reclaiming processes like recovery from scrap.)
- * This declaration was produced using Product Category Rule intended for a product model sold in the Japanese market and using the qualitative and quantitative data collected in Japan

- [Notes for readers: Target product specific]

 A."Raw material" in "Production" includes environmental impacts generated during mining transportation material production phases of the main body
- of the printer and the toner cartridge enclosed in the printer. The environmental impacts are calculated using the eco-leaf basic unit DB for calculations. B. " Product" in "production" includes environmental impacts of processing of the parts (injection, blow-, press- and glass-molding).
 - The environmental impacts from the parts assembly plant which is different from the main body assembly plant (such parts are clacified in "parts C") are calculated using the eco-leaf basic unit DB for calculations.
 - The impacts from the main body assembly plant are calculated using the quantitative data on environmental impacts in our assembly plant.
- C. Regarding the basis and the basic units for calculations during distribution stages
 - The total distance of the transportation in Japan of 100km is used according to PCR (AD-04) and the transportation overseas includes the transportation by track in China and by ship between China and Japan.
- D. Regarding the basis and the basic units for calculations during use and consumption stage
 - The power consumption is measured by the TEC test procedure according to PCR (AD-04). 3,375,000 sheets are printed in total during the use period of five years. The toner consumption is summed up over the five years from the toner consumption data per sheet using our print pattern with 5% coverage.
- The production loads and the collection & recvcling impacts of the toner cartridges used over the five years are included in this stage. E. The recycling impacts are calculated assuming that 40% of the end-of-life printers are recovered from users according to PCR (AD-04).
- The impacts are calculated with the remaining 60% following the disposal senario as general wastes.
- F. The impacts of materilal production of recycled materials are included in the values with minus as a recycling effect.

Product data sheet

(Input data and parameters for LCA)





PCR name	EP and IJ printer (PCR-ID:AD-04)	Product type		bizhub PF	REES 2250P		
LCA/LCIA in units of:	1	Product weight[kg]	768.0	Package[kg]	171.4	Weight total[kg]	939.4

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

	Breakdown of primary	materials		Math breakdown of par	ts, which need to apply	Processing / Assembly 8	Base Units (Parts B, C)
Material name	Weight (kg)	Material name	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)
Ordinary steel	6.37E+02	Rubber	3.78E+00	Press molding:Iron	6.45E+02	Parts assembly	1.27E+00
Stainless steel	3.96E+01	Semiconductor circuit board	2.56E+01	Press molding:Nonferr ous metal	1.28E+01		
Aluminium	4.64E+00			Injection molding	5.20E+01		
Other metals	8.15E+00			Blow molding	7.46E-01		
Thermoplastic resin	5.72E+01						
Wood	9.79E+01						
Paper	6.55E+01						
Subtotal	9.10E+02	Subtotal	2.94E+01				
	Total		9.39E+02	Subtotal	7.10E+02	Subtotal	1.27E+00

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.

Ę	Classification	Energy	Energy	Energy	Material	Material		
ig	Distribution	Electricity	Diesel oil as	Furnace urban	Industrial	Groundwater		
Ę	Distribution	(kWh)	fuel(kg)	gas (m³)	water(kg)	(kg)		
Suo	Quantity	1.09E+03	5.45E-03	2.33E+00	2.15E+04	5.27E+02		
0	Note							
Emission/ Discharge	Classification	To Water system						
issi	Distribution	Sewage (kg)						
를 를	Quantity	2.17E+04						
	Note							

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

	Means of transportation	Freight by ship	Diesel truck	Diesel truck			
tjo	wears of transportation	Freight by Ship	:20ton	:2ton			
죝	Conditions	Load(kg·km)	Load(kg·km)	Load(kg·km)			
Dist	Quantity	2.35E+06	4.05E+05	3.40E+03			
	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

Stainless steel (kg) 5.93E+01 Processing
5.93E+01
Processing
Processing
Injection molding(kg)
3.45E+02
n

1.2 Disposi	tion/Recycle information on consum	nabies and repiac	ement parts						
	Classification	Consumption	Consumption	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment
sumables	Distribution	Electricity (kWh)	Kerosene(kg)	Recycle: to iron(kg)	Recycle: to Aluminum(kg)	Recycle: to copper(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)	Industrial waste destruction by fire(kg)
Son	Quantity	1.23E+01	1.88E-01	9.89E+01	6.42E+01	2.88E-02	6.39E+01	1.07E+01	3.90E+01
	Note								
	Classification	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction	Deduction	Deduction
nsumables	Distribution	Industrial waste inning(kg)	Waste destruction by fire(kg)	Waste inning(kg)	Iron(kg)	Aluminum(kg)	Copper(kg)	Plastics(kg)	Paper(kg)
රි	Quantity	7.04E-01	1.71E+02	2.46E+02	-9.89E+01	-6.42E+01	-2.88E-02	-6.39E+01	-1.07E+01
	Note								
	Classification	Distribution	Distribution						
sumables	Distribution	Diesel truck: 10ton (kg•km)	Diesel truck: 4ton (kg•km)						
Cor	Quantity	3.34E+04	4.04E+04						
	Note								

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

o. Diopositi	Disposition/Recycle stage information (per product): process method and scenarios								
	Classification	Consumption	Consumption	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment
sumables	Distribution	Electricity (kWh)	Kerosene(kg)	Recycle: to iron(kg)	Recycle: to Aluminum(kg)	Recycle: to copper(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)	Recycle: to Assembled circuit board(kg)
Cons	Quantity	1.66E+01	2.54E-01	2.70E+02	1.86E+00	6.74E+00	2.27E+01	6.89E+01	3.48E+00
	Note								
	Classification	Treatment	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction	Deduction
sumables	Distribution	Incineration: Industrial waste(kg)	Landfill: Industrial waste(kg)	Incineration to landfill (as ash)(kg)	Landfill: General waste(kg)	lron(kg)	Aluminium (kg)	copper(kg)	Plastics(kg)
Cons	Quantity	7.76E+00	1.10E+00	1.35E+02	4.05E+02	-2.70E+02	-1.86E+00	-6.74E+00	-2.27E+01
	Note								
	Classification	Deduction	Deduction	Distribution	Distribution				
ısumables	Distribution	Paper(kg)	Recycle: to Assembled circuit board(kg)	Diesel truck: 10ton (kg•km)	Diesel truck: 4ton (kg•km)				
Con	Quantity	-6.89E+01	-3.48E+00	4.51E+04	5.45E+04				
	Note								

6 Others

A.Product information:

All the parts mass per unit sorted by materials and by processes/assembly are included. The motor mass is included in ordinary steel.

B.Production site information:

The energy consumption & material use during the main body assemby and cartridge & toner shipment are included.

The environmental impacts that are exhausted from the production site in the atmosphere and the water system are included.

C.Distribution stage information:

The total distance of the transportation in Japan of 100km is used according to PCR (AD-04) and the transportation overseas includes the transportation by track in China and by ship between China and Japan.

D. Product and accessories subject to this analysis:

The power consumption is calculated assuming the use period of five years and 3,375,000 sheets printed during the use period according to the PCR (AD-04). The toner consumption is summed up over the five years from the toner consumption data per sheet using our print pattern with 5% coverage.

The production impacts of the cartridges and toner used during the use period of five years are included.

The impacts of the maintenance parts used and the transportation impacts of the maintenace during the use period of five years are included in this stage.

E. Disposal/Recycle information on the consumables and the maintenance parts during use stage:

The recycling information of the toner, the developer, the drums and the maintainance parts used during the use period of five years are included. The recycling processing impacts are included as plus and the production impacts of the recycled materials are included as minus.

F.Disposal/Recycle stage information:

The information on the products recovered from users is included.

The recycling processing impacts are included as plus and the production impacts of the recycled materials are included as minus.

G.This declaration was produced using Product Category Rule intended for a product model sold in the Japanese market and using the qualitative and quantitative data collected in Japan.