Product Environmental Aspects Declaration

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



No. AD-13-296 Date of publication Nov./25/2013



http://konicaminolta.jp

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



Total of 290,400 sheets on the assumption of five years usage.

Environmental impact by copypaper is not included.

Dizhub 224e

Marking technologies Electrophotographic Printer (EP)

Printing speed 22 prints-per-minute(B/W)

Maximum copy paper A3

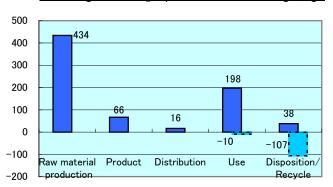
<u>Duplex copying</u> Non-stack ADU equipped

Life Cycle Impact

<u> </u>			
Consumption and discharge in a life cycle	All the stage sum totals		
Global warming(CO ₂ equivalent):kg	752 (635)		
Acidification(SO ₂ equivalent):kg	1.1 (0.9)		
Energy resources(crude oil equivalent):MJ	13,436 (11,224)		

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

Warming load CO₂ equivalent of each stage(kg)



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.

[Supplemental environmental information]



- Certified Environmental Standards
 - Japan Eco Mark

University of Tsukuba, Graduate School

- 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,

Independent verification of the declaration and data, according to ISO14025 □internal ■external Third party verifier: The 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 written.

PCR name

Product Environmental Information Data Sheet (PEIDS)

Product type

		-
Document control no.	F-02B-03	Un
Product vendor	KONICAMINOLTA,INC.	Characteriza
Ecol eaf registration no.	AD-13-296	

EP and IJ printer

Unit Function DB version 2.1

Characterization Factor DB version 2.1

bizhub 224e



	PC	R-ID		AD-04		Product weight[kg]	80.0	Package[kg]	14.5	Weight total[kg]	94.5
	_			Life Cycle Stage		Produ	uction	51.411.41		5	D l.
In/O	ut ite	ms			Unit	Raw material	Product	Distribution	Use	Disposal	Recycle
		Ener	av Ca	onsumption	MJ	7.63E+03	1.30E+03	2.16E+02	4.23E+03	6.39E+01	−2.21E+03
		Lilery	gy	maumption	Mcal	1.82E+03	3.11E+02	5.17E+01	1.01E+03	1.53E+01	−5.28E+02
				Coal	kg	6.02E+01	8.30E+00	5.05E-04	2.01E+01	3.26E-01	−1.91E+01
		Ene	erav	Crude oil (as a fuel)	kg	7.16E+01	9.46E+00	4.73E+00	2.87E+01	7.17E-01	−1.81E+01
		2.10	,,9)	Natural Gas	kg	1.44E+01	4.54E+00	7.30E-02	1.24E+01	1.69E-01	−2.98E+00
				Uranium ore	mg	1.52E-03	5.61E-04	3.42E-08	1.21E-03	2.20E-05	-2.45E-04
				Crude oil (as an ingredients)	kg	2.63E+01	0	0	1.10E+01	0	−1.24E+01
			ľ	Iron ore	kg	4.52E+01	0	0	1.30E+00	0	-1.86E+01
				Copper ore	kg	1.45E+00	0	0	0.00E+00	0	-4.31E-01
			ľ	Bauxite	kg	5.67E-01	0	0	4.33E-01	0	-3.97E-01
	otion	el Si	ľ	Nickel ore	kg	7.81E-02	0	0	3.85E-02	0	-4.67E-02
	muo	austil	ľ	Chromium ore	kg	1.20E-01	0	0	5.27E-02	0	-6.92E-02
	Cons	Exhaustible resources	ľ	Manganese ore	kg	2.36E-01	0	0	1.31E-02	0	-1.68E-02
	Resource Consumption from the environment	Mat	terial	Plumbous ore	kg	7.40E-02	0	0	0	0	-1.80E-02
	Reso			Tin ore	kg	0	0	0	0	0	0
	L			Zinc ore	kg	7.28E-01	0	0	0	0	-1.77E-01
				Gold ore	kg	0	0	0	0	0	0
				Silver ore	kg	0	0	0	0	0	0
				Silica sand	kg	3.45E+00	0	0	1.49E-02	0	-1.02E+00
				Rock salt	kg	1.95E+01	7.80E-03	0	2.54E-01	2.89E-02	-7.10E+00
ses				Limestone	kg	1.03E+01	0	0	3.48E-01	4.01E-01	-3.31E+00
Inventory analyses				Natural soda ash	kg	3.07E-01	0	0	0.00E+00	0	-9.72E-02
ory a		Renewable		Wood	kg	2.02E+01	0	0	8.05E+00	0	-1.13E+01
vent		resources		Water	kg	3.53E+04	7.71E+03	3.82E-01	1.49E+04	2.69E+02	-6.13E+03
			-	CO2	kg	4.25E+02	6.57E+01	1.54E+01	1.93E+02	3.82E+01	-1.14E+02
			-	SOx	kg	2.55E-01	4.92E-02	9.42E-03	1.40E-01	2.05E-02	-6.61E-02
			ŀ	NOx	kg	4.81E-01	4.18E-02	7.39E-02	2.00E-01	5.07E-02	-1.41E-01
			ŀ	N2O	kg	3.38E-02	2.08E-03	2.56E-03	1.72E-02	6.77E-05	-1.02E-02
		to Atmosph	nere	CH4	kg	4.07E-03	1.50E-03	9.16E-08	3.22E-03	5.90E-05	-6.49E-04
			-	CO	kg	5.56E-02	9.75E-03	1.95E-02	3.18E-02	1.09E-02	-1.59E-02
			ŀ	NMVOC	kg	7.95E-03	2.94E-03	1.79E-07	6.31E-03	1.15E-04	-1.27E-03
	e +		ŀ	CxHy	kg	1.67E-02	3.87E-04	2.21E-03	4.64E-03	3.06E-04	-5.26E-03
	harg		ŀ	dust	kg	5.52E-02	2.11E-03	7.07E-03	1.37E-02	2.94E-03	-1.77E-02
	Emission/Discharge to the environment			BOD	kg	9.92E-02 -	Z.11E=03 -	7.07E=03 -	1.37E=02 -	2.94E=03 -	-1.77E-02 -
	ssion e en			COD	kg	_	_	_	_	_	_
	Emis to th	to Water sy	/stem	N total	kg	_		_		_	
			, 5.0111	P total	kg	_		_	_	_	
				SS	kg	_	_	_	_	_	_
				Unspecified solid waste	kg	2.50E+00	4.96E-02	0	2.46E+00	3.52E+01	-8.75E-01
				Slag	kg	1.52E+01	0	0	4.20E-01	0	-5.73E-01 -5.34E+00
		to Soil syste	em	Sludge	kg	7.02E-01	0	0	9.29E-01	0	-6.52E-01
				Low emission radioactive waste	kg	1.07E-03	3.92E-04	2.39E-08	8.42E-04	1.54E-05	-1.71E-04
	nption			Energy resources	kg	1.40E+02	2.48E+01	4.81E+00	6.64E+01	1.31E+00	-3.60E+01
	by Resource Consumption	Exhaust		(crude oil equivalent) Mineral resources	kg	4.63E+02	0	0	3.89E+01	0	-1.55E+02
nent	by Resou			(Iron ore equivalent)	-				0.002.01		
sesi				Global warming (CO2 equivalent)	kg	4.34E+02	6.63E+01	1.60E+01	1.98E+02	3.82E+01	-1.17E+02
ass	mpti	to		Acidification	kg	5.91E-01	7.85E-02	6.12E-02	2.80E-01	5.60E-02	-1.65E-01
Impact assesment	Consumption	Atmospl	here	(SO2 equivalent)	v.R	0.81L VI	7.00L 02	0.12L UZ	2.00L -01	0.00L 02	1.00L -01
=	Emision C	to Wat									
	Em	to So	il								
	by	syste									

[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.
- "Distribution" stage is intended for transportation of produced product. Transportation of consumables and maintenance goods (e.g. replacement parts)
- C. "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 decreas 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.
- R. Indicate "0" instead exponential notation, if the result of calculation or estimation is considered as "zero" or negligible in comparison to related results.

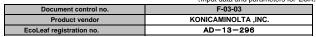
 C. Indicate "-" if calculation nor estimation can not be done, in order to differentiate to indicate "zero".
- (BGD for material production are for production from mineral ore. Those data do not include reclaiming processes like recovery from scrap.)

- [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
- B. " Product" in "production" includes environmental impacts of processing of the parts (injection, blow-, press- and glass-molding).
- C. Regarding the basis and the basic units for calculations during distribution stages
 D. Regarding the basis and the basic units for calculations during use and consumption 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).
- 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 224e			
LCA/LCIA in units of:	1	Product weight[kg]	80.0	Package[kg]	14.5	Weight total[kg]	94.5

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

	Breakdown of primar	y materials		Math breakdown of pa	rts, which need to appl	ly Processing / Assembly	Base Units (Parts B, C)
Material name	Weight (kg)	Material name	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)
Ordinary steel	4.33E+01	Rubber	4.72E-01	Press molding:Iron	4.10E+01	Parts assembly	2.97E-01
Stainless steel	4.89E-01	Semiconductor circuit board	3.94E+00	Press molding:Nonfer rous metal	1.53E+00		
Aluminium	3.09E-01			Injection molding	2.85E+01		
Other metals	1.22E+00			Blow molding	1.70E-01		
Glass	2.50E+00			Glass molding	2.50E+00		
Thermoplastic resin	2.92E+01						
Wood	6.98E+00						
Paper	6.21E+00						
Subtotal	9.01E+01	Subtotal	4.41E+00				
	Total		9.45E+01	Subtotal	7.36E+01	Subtotal	2.97E-01

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.

c	Classification	Energy	Energy	Material	Material		
ptio	Distribution	Electricity	Furnace urban	Industrial	Groundwater		
E		(kWh)	gas (m³)	water(kg)	(kg)		
Si Si	Quantity	6.89E+01	4.99E-01	1.32E+03	6.79E+01		
O	Note						
Emission/ Discharge	Classification	To Water system					
rissi	Distribution	Sewage(kg)					
Err	Quantity	1.35E+03					
	Note						

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

ı		Means of transportation	Moone of transportation	Freight by ship	Diesel truck	Diesel truck			
	tion		Treight by Ship	:20ton	:2ton				
	뢽	Conditions	Load(kg·km)	Load(kg·km)	Load(kg·km)				
- 1	Dis	Quantity	2.36E+05	4.53E+04	1.50E+03				
- 1		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

	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Product	Distribution	Electricity (kWh)	Gasoline as fuel(kg)	Furnace urban gas (m³)	Industrial water(kg)	Groundwater (kg)	Ordinary steel (kg)	Stainless steel (kg)	Aluminium (kg)
₫.	Quantity	3.09E+02	6.74E-01	3.67E+00	7.53E+01	4.82E+02	1.18E+00	2.44E-01	4.10E-01
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Processing	Processing	Processing	Processing
Product	Distribution	Thermoplastic resin(kg)	Wood(kg)	Paper(kg)	Rubber(kg)	Press:Iron(kg)	Press: Nonferrous(kg)	Injection molding(kg)	Blow molding (kg)
₫.	Quantity	1.07E+01	7.44E-01	3.43E+00	3.10E-01	1.68E+00	4.64E-01	2.90E+00	3.26E+00
	Note								
	Classification	Assembly	To Water system						
Product	Distribution	Parts assembly (kg)	Sewage(kg)						
	Quantity	3.26E+00	3.64E+02						
	Note								
	Classification	Distribution	Distribution	Distribution					
Product	Distribution	Freight by ship (kg·km)	Diesel truck: 20ton (kg•km)	Diesel truck: 10ton (kg•km)					
	Quantity	6.22E+03	3.64E+03	1.98E+03					
	Note								

4.2 DISPU	Disposition/Recycle information on consumables and replacement parts										
S	Classification	Consumption	Consumption	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment		
Consumables	Distribution	Electricity (kWh)	Kerosene(kg)	Recycle: to iron(kg)	Recycle: to Aluminum(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)	Industrial waste destruction by fire(kg)	Industrial waste inning(kg)		
Suo	Quantity	2.26E-01	3.44E-03	5.70E-01	1.64E-01	2.55E+00	1.67E+00	1.24E-01	2.58E-02		
0	Note										
	Classification	Treatment	Treatment	Deduction	Deduction	Deduction	Deduction	Distribution	Distribution		
Consumables	Distribution	Waste destruction by fire(kg)	Waste inning(kg)	Iron(kg)	Aluminum(kg)	Plastics(kg)	Paper(kg)	Diesel truck: 10ton (kg•km)	Diesel truck: 4ton (kg•km)		
ပိ	Quantity	6.55E+00	1.10E+00	-5.70E-01	-1.64E-01	-2.55E+00	-1.67E+00	6.12E+02	7.41E+02		
	Note										
	Classification										
Consumables	Distribution										
	Quantity										
	Note										

Disposi	tion/Recycle stage information	(per product): pro	cess method an	d scenarios					
S	Classification	Consumption	Consumption	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment
umables	Distribution	Electricity (kWh)	Kerosene(kg)	Recycle: to iron(kg)	Recycle: to Aluminum(kg)	Recycle: to copper(kg)	Recycle: to Glass(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)
Consi	Quantity	1.67E+00	2.55E-02	1.75E+01	1.24E-01	1.02E+00	1.00E+00	1.13E+01	5.82E+00
O	Note								
	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction
Consumables	Distribution	Recycle: to Assembled circuit board(kg)	Incineration: Industrial waste(kg)	Landfill: Industrial waste(kg)	Incineration to landfill (as ash)(kg)	Landfill: General waste(kg)	Iron(kg)	Aluminium (kg)	copper(kg)
8	Quantity	5.36E-01	1.15E+00	5.16E-01	2.57E+01	3.07E+01	-1.75E+01	-1.24E-01	-1.02E+00
	Note								
	Classification	Deduction	Deduction	Deduction	Deduction	Distribution	Distribution		
Consumables	Distribution	Glass(kg)	Plastics(kg)	Paper(kg)	Recycle: to Assembled circuit board(kg)	Diesel truck: 10ton (kg•km)	Diesel truck: 4ton (kg•km)		
S	Quantity	-1.00E+00	-1.13E+01	-5.82E+00	-5.36E-01	4.54E+03	5.49E+03		
	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 777,600 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 maintenance 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.