# Product Environmental Aspects Declaration

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



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# http://konicaminolta.jp

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



Total of 2,232,600 sheets on the assumption of five years usage.

Environmental impact by copypaper is not included.

※ADF、Finisher is optional.



Marking technologies Electrophotographic Printer (EP)

Printing speed 61 prints-per-minute(B/W), 61 prints-per-minute(color)

Maximum copy paper A3

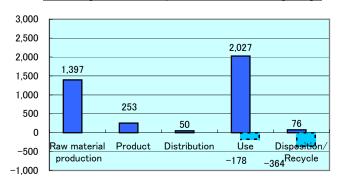
<u>Duplex copying</u> Non-stack ADU equipped

# Life Cycle Impact

Consumption and discharge in a life cycle	All the stage sum totals
Global warming(CO <sub>2</sub> equivalent):kg	3,803
Global Warming(OO2cquivalent).kg	(3,262)
Acidification(SO <sub>2</sub> equivalent):kg	5.9
Acidinoacion(002cquivalent).ng	(4.9)
Energy resources(crude oil equivalent):MJ	70,431
Energy resources(crude oil equivalent).Mo	(60,629)

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

Warming load CO<sub>2</sub> 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.
- 5. 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.



# [Supplemental environmental information]

- Certified Environmental Standards
  - International Energy Star Program

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: The third party verifier  $\ ^*$ : Shozo Nakamuta

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

<sup>\*</sup> In the case of an business entity certified as an Ecoleaf-data-collection system, the names of certification auditors are written.

<sup>\*</sup>The EcoLeaf is an environmental labeling program that belongs to the ISO-Type III category.

# 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-13-E207		



PCR name				EP and IJ print	er	Product type		bizl	nub PRO C10	60L	
	PC	R-ID		AD-04		Product weight[kg]	280.0	Package[kg]	41.2	Weight total[kg]	321.2
	_			Life Cycle Stage		Produ	uction				
In/O	ut ite	ms	_	Life Oyele olage	Unit	Raw material	Product	Distribution	Use	Disposal	Recycle
			_	a	MJ	2.17E+04	4.86E+03	6.77E+02	4.30E+04	1.75E+02	-9.80E+03
		Energ	ду Со	onsumption	Mcal	5.18E+03	1.16E+03	1.62E+02	1.03E+04	4.19E+01	-2.34E+03
				Coal	kg	2.63E+02	2.98E+01	1.58E-03	2.22E+02	8.08E-01	-1.15E+02
		F		Crude oil (as a fuel)	kg	1.77E+02	3.75E+01	1.48E+01	2.82E+02	2.07E+00	-6.30E+01
		Ene	rgy	Natural Gas	kg	4.26E+01	1.70E+01	2.28E-01	1.21E+02	4.24E-01	−1.25E+01
				Uranium ore	mg	3.94E-03	2.02E-03	1.07E-07	1.06E-02	5.46E-05	-6.14E-04
				Crude oil (as an ingredients)	kg	3.92E+01	0	0	1.59E+02	0	-5.60E+01
				Iron ore	kg	2.17E+02	0	0	4.47E+01	0	-1.05E+02
				Copper ore	kg	4.75E+00	0	0	2.65E-03	0	−1.50E+00
	_			Bauxite	kg	1.07E+01	0	0	8.30E+00	0	−7.59E+00
	nent	Exhaustible resources		Nickel ore	kg	1.51E+00	0	0	1.84E+00	0	−1.34E+00
	nsur	sour		Chromium ore	kg	2.12E+00	0	0	2.50E+00	0	−1.85E+00
	e Co	Ξ ē		Manganese ore	kg	1.33E+00	0	0	5.33E-01	0	-2.54E-01
	Resource Consumption from the environment	Mate	erial	Plumbous ore	kg	1.95E-01	0	0	0	0	-4.82E-02
	Res			Tin ore	kg	0	0	0	0	0	0
				Zinc ore	kg	1.92E+00	0	0	0	0	-4.74E-01
				Gold ore	kg	0	0	0	0	0	0
				Silver ore	kg	0	0	0	0	0	0
				Silica sand	kg	8.02E+00	0	0	5.06E-01	0	-2.13E+00
Sa			-	Rock salt	kg	2.63E+01	2.76E-02	0	5.25E+00	1.20E-01	-1.14E+01
nventory analyses			-	Limestone	kg	4.46E+01	0	0	9.94E+00	8.05E-01	-1.73E+01
ryar				Natural soda ash	kg	5.62E-01	0	0	0.00E+00	0	-1.59E-01
ento		Renewable resources	٠	Wood Water	kg	6.01E+01	0	0	4.29E+01	0	-4.12E+01
≦				CO2	kg	1.09E+05	2.79E+04	1.20E+00	1.42E+05	6.54E+02	-2.95E+04 -5.29E+02
			-	SOx	kg	1.37E+03	2.49E+02	4.81E+01 2.62E-02	1.97E+03	7.55E+01	
			-	NOx	kg	1.10E+00 1.49E+00	1.82E-01 1.81E-01	1.76E-01	1.55E+00 2.28E+00	4.18E-02 1.19E-01	-5.09E-01 -7.03E-01
			Atmosphere	N2O	kg	9.51E-02	1.19E-02	8.81E-03	2.10E-01	1.91E-04	-4.66E-02
		to Atmosph		CH4	kg kg	1.03E-02	5.39E-03	2.87E-07	2.82E-02	1.46E-04	-1.50E-03
		to 7 tanoopii	-	CO	kg	2.49E-01	3.62E-02	3.56E-02	3.52E-01	2.94E-02	-1.18E-01
			-	NMVOC	kg	2.02E-02	1.06E-02	5.61E-07	5.53E-02	2.86E-04	-2.93E-03
	e +		-	СхНу	kg	4.64E-02	2.89E-03	6.05E-03	6.03E-02	1.03E-03	-2.28E-02
	charg		ŀ	dust	kg	1.83E-01	1.07E-02	1.81E-02	1.82E-01	7.27E-03	-9.39E-02
	/Disc			BOD	kg	-	-	-	-	-	-
	Emission/Discharge to the environment			COD	kg	-	-	-	-	-	_
	Emi to ti	to Water sy	stem	N total	kg	_	_	-	_	_	_
				P total	kg	-	_	-	_	_	_
				SS	kg	-	-	-	_	_	_
				Unspecified solid waste	kg	7.17E+00	1.71E-01	0	5.37E+01	1.47E+02	-4.32E+00
				Slag	kg	6.90E+01	0	0	1.47E+01	0	-3.11E+01
		to Soil syste	em	Sludge	kg	2.07E+01	0	0	1.78E+01	0	-1.54E+01
				Low emission radioactive waste	kg	2.76E-03	1.41E-03	7.49E-08	7.41E-03	3.81E-05	-4.30E-04
	sumption			Energy resources (crude oil equivalent)	kg	4.30E+02	9.37E+01	1.51E+01	6.58E+02	3.55E+00	−1.57E+02
ent	by Resource Consumption	Exhaust resource		Mineral resources (Iron ore equivalent)	kg	2.47E+03	0	0	1.61E+03	0	-1.50E+03
Impact assesment				Global warming (CO2 equivalent)	kg	1.40E+03	2.53E+02	5.05E+01	2.03E+03	7.56E+01	−5.42E+02
ct as	dwn	to Atmospi	here	Acidification (SO2 equivalent)	kg	2.15E+00	3.09E-01	1.49E-01	3.15E+00	1.25E-01	-1.00E+00
ıpadı	ons										
Ε	<b>Emision Consumption</b>	to Wat									
	by Emi	to So									

#### [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)

- D. Distribution 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).

#### 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 "-" 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.
- \* 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.

# Product data sheet

	(input data and parameters for 2011)
Document control no.	F-03-03
Product vendor	KONICAMINOLTA,INC.
EcoLeaf registration no.	AD-13-E207



PCR name	EP and IJ printer (PCR-ID:AD-04)	Product type	bizhub PRO C1060L				
LCA/LCIA in units of:	1	Product weight[kg]	280.0	Package[kg]	41.2	Weight total[kg]	321.2

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	y 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	2.06E+02	Rubber	1.46E+00	Press molding:Iron	2.01E+02	Parts assembly	1.78E+00
Stainless steel	9.55E+00	Semiconductor circuit board	1.01E+01	Press molding:Nonfer rous metal	1.25E+01		
Aluminium	9.15E+00			Injection molding	3.58E+01		
Other metals	3.33E+00			Blow molding	1.02E+00		
Glass	3.71E+00			Glass molding	3.71E+00		
Thermoplastic resin	4.11E+01						
Wood	1.66E+01						
Paper	2.04E+01						
Subtotal	3.10E+02	Subtotal	1.16E+01				
	Total		3.21E+02	Subtotal	2.54E+02	Subtotal	1.78E+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.

umption	Classification	Energy	Energy	Energy	Energy	Material	Material	
	Distribution	Electricity	Heavy oil as	Diesel oil as	Furnace urban	Industrial	Groundwater	
		(kWh)	fuel(kg)	fuel(kg)	gas (m³)	water(kg)	(kg)	
ons	Quantity	2.40E+02	3.42E+00	1.30E-01	2.59E+00	4.53E+03	6.01E+02	
Ö	Note							
Emission/ Discharge	Classification	To Water system						
issi cha	Distribution	Sewage(kg)						
En	Quantity	4.76E+03						
	Note							

 ${\bf 3.} \ \underline{\bf Distribution\ stage\ information\ (per\ unit): means,\ distance,\ loading\ ratio,\ consumptions\ and\ emissions/discharges.}$ 

Distribution	Means of transportation	Freight by ship	Diesel truck :20ton	Diesel truck :2ton			
	Conditions	Load(kg·km)	Load(kg·km)	Load(kg·km)			
	Quantity	8.22E+05	8.15E+04	1.50E+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

	iot and acceptonice easyout to the								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
ಕ	Distribution	Electricity	Heavy oil as	Diesel oil as	Gasoline as	Furnace urban	Industrial	Groundwater	Ordinary steel
Product	Distribution	(kWh)	fuel(kg)	fuel(kg)	fuel(kg)	gas (m³)	water(kg)	(kg)	(kg)
- P	Quantity	2.55E+03	1.16E+00	4.40E-02	1.64E+00	4.17E+01	1.53E+03	6.10E+03	3.94E+01
	Note								
Product	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Processing
	Distribution	Stainless steel (kg)	Aluminium (kg)	Copper(kg)	Thermoplastic resin(kg)	Wood(kg)	Paper(kg)	Rubber(kg)	Press:Iron(kg)
- P	Quantity	1.16E+01	7.85E+00	8.80E-03	1.57E+02	6.97E-01	1.98E+01	4.99E+00	5.69E+01
	Note								
	Classification	Processing	Processing	Processing	Assembly	To Water system			
Product	Distribution	Press: Nonferrous(kg)	Injection molding(kg)	Blow molding (kg)	Parts assembly (kg)	Sewage(kg)			
Ā	Quantity	3.06E+00	3.77E+01	4.24E+01	4.24E+01	6.12E+03			
	Note								
	Classification	Distribution	Distribution	Distribution					
Product	Distribution	Freight by ship (kg·km)	Diesel truck: 20ton (kg•km)	Diesel truck: 10ton (kg•km)					
	Quantity	1.61E+04	5.79E+03	2.79E+04					
	Note								

4.2 Dispo	sition/Recycle information on co	nsumables and	replacement part	S					
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 copper(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)	Industrial waste destruction by fire(kg)
Si O	Quantity	3.40E+00	5.19E-02	2.04E+01	3.14E+00	3.52E-03	4.26E+01	8.21E+00	2.00E+00
O	Note								
	Classification	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction	Deduction	Deduction
Consumables	Distribution	Industrial waste inning(kg)	Waste destruction by fire(kg)	Waste inning(kg)	Iron(kg)	Aluminum(kg)	Copper(kg)	Plastics(kg)	Paper(kg)
ē	Quantity	4.31E-01	7.99E+01	3.53E+01	-2.04E+01	-3.14E+00	-3.52E-03	-4.26E+01	-8.21E+00
	Note								
	Classification	Distribution	Distribution						
Consumables	Distribution	Diesel truck: 10ton (kg•km)	Diesel truck: 4ton (kg•km)						
Ö	Quantity	9.22E+03	1.12E+04						
	Note								

5. 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 Glass(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)
Cons	Quantity	5.68E+00	8.67E-02	8.60E+01	3.66E+00	2.71E+00	1.48E+00	1.63E+01	1.62E+01
0	Note								
	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction
nsumables	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)
Consi	Quantity	1.38E+00	3.06E+00	5.09E-01	4.78E+01	1.39E+02	-8.60E+01	-3.66E+00	-2.71E+00
	Note								
	Classification	Deduction	Deduction	Deduction	Deduction	Distribution	Distribution		
nsumables	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	-1.48E+00	-1.63E+01	-1.62E+01	-1.38E+00	1.54E+04	1.87E+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 2,232,600 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 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

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.

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