#### Product **Environmental Aspects** Declaration EP and IJ printer (PCR-ID:AD-04) No. AD-13-E250 Date of publication Feb./1/2013 KONICA MINOLTA Marking technologies Electrophotographic Printer (EP) 21 prints-per-minute(B/W) Printing speed Maximum copy paper A3 http://konicaminolta.jp Duplex copying optional Document feeding optional Please direct any inquiries or comments to e-mail: Life Cycle Impact bt-environ@pub.konicaminolta.jp Consumption and discharge in a life cycle All the stage sum totals 413 Global warming(CO2equivalent):kg (362)06 Acidification(SO2equivalent):kg (0.5) 7.687 Energy resources(crude oil equivalent):MJ (6, 617)\*Figures in ( ) indicated environmental impact including recycle effect \*note3 Warming load $CO_2$ equivalent of each stage(kg) 250 192 200 139 150 100 Total of 264,600 sheets on the assumption 58 of five years usage. 50 17 Environmental impact by copypaper is not 7 -37 included. 0 Raw material Product Distribution Use Disp<mark>ositio</mark>n/ Auto Document Feeder is optional. L production -50 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

Third party verifier: The third party verifier \* : Shozo Nakamuta

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

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

## The EcoLeaf is an environmental labeling program that belongs to the ISO-Type III category.

### Notes

# Form 2 (F-02B-03) Product Environmental Information Data Sheet (PEIDS)

Document control no. F-02B-03								Unit Fu	nction DB version	2.1	1	ECO E		
	Product vendor KONICA MIN EcoLeaf registration no. AD-13-							Characterization	Factor DB version	2.1	5	製品環境情報		
Eco	oLea	f reg	istration	no.	AD-	13-E	250	l				tp://www.jemai.or.jp		
	PC	R na	ame		EP and IJ print	er	Product type	bizhub 215						
	PCR-ID AD-04				AD-04		Product weight[kg]	26.5	Package[kg]	8.9	Weight total[kg]	35.4		
		_			Life Cycle Stage		Produ	uction						
In/O	ut ite	ems				Unit	Raw material	Product	Distribution	Use	Disposal	Recycle		
			Energy Co	<u></u>	motion	MJ	2.51E+03	9.31E+02	8.93E+01	4.13E+03	2.76E+01	-1.07E+03		
			Lifergy C	unsu	impuon	Mcal	6.00E+02	2.22E+02	2.13E+01	9.86E+02	6.59E+00	-2.56E+02		
				Coa		kg	1.80E+01	1.69E+00	2.09E-04	1.92E+01	1.46E-01	-7.21E+00		
			Energy	_	ide oil (as a fuel)	kg	2.42E+01	3.22E+00	1.95E+00	2.81E+01	2.96E-01	-8.76E+00		
				_	ural Gas	kg	4.17E+00	1.25E+01	3.01E-02	1.13E+01	7.53E-02	-1.11E+00		
				ora	nium ore	mg	4.57E-04	1.14E-04	1.41E-08	1.03E-03	9.85E-06	-8.48E-05		
					Crude oil (as an ingredients)	kg	1.03E+01	0	0	1.61E+01	0	-8.00E+00		
					Iron ore	kg	1.34E+01	0	0	3.49E+00	0	-6.73E+00		
					Copper ore	kg	3.62E-01	0	0	2.83E-03	0	-1.04E-01		
	u ti	0	o		Bauxite Nickel ore	kg kg	1.85E-01 2.14E-02	0	0	3.99E-01 4.42E-02	0	-2.33E-01 -2.62E-02		
	umpt	Exhaustible	2010	-	Chromium ore	кg kg	2.14E-02 3.33E-02	0	0	4.42E-02 6.10E-02	0	-2.62E-02 -3.77E-02		
	Cons	Exha	IGSC		Manganese ore	kg	7.06E-02	0	0	2.56E-02	0	-8.15E-03		
	Resource Consumption from the environment		Material		Plumbous ore	kg	1.91E-02	0	0	0	0	-4.49E-03		
	Reso				Tin ore	kg	0	0	0	0	0	0		
					Zinc ore	kg	1.88E-01	0	0	0	0	-4.42E-02		
					Gold ore	kg	0	0	0	0	0	0		
					Silver ore	kg	0	0	0	0	0	0		
				-	Silica sand	kg	1.57E+00	0	0	8.88E-02	0	-5.54E-01		
es					Rock salt Limestone	kg	7.94E+00	1.63E-04	0	2.61E-01	9.34E-03	-3.13E+00		
nalys				-	Limestone Natural soda ash	kg kg	3.22E+00 1.55E-01	0	0	8.16E-01 5.45E-03	1.68E-01 0	<u>-1.28E+00</u> -5.72E-02		
Inventory analyses		Por	ewable		Wood	кg kg	1.55E-01 1.11E+01	0	0	5.45E-03 7.60E+00	0	- <u>7.50E+00</u>		
Ivent			ewable urces		Water	kg	1.03E+04	1.34E+03	1.57E-01	1.30E+00	1.20E+02	-2.29E+03		
-					CO2	kg	1.36E+02	4.74E+01	6.34E+00	1.87E+02	1.69E+01	-4.92E+01		
					SOx	kg	8.01E-02	1.05E-02	4.16E-03	1.30E-01	9.03E-03	-3.02E-02		
					NOx	kg	1.62E-01	5.83E-02	3.52E-02	2.02E-01	2.14E-02	-6.88E-02		
					N2O	kg	1.18E-02	4.02E-02	9.89E-04	1.90E-02	2.76E-05	-5.26E-03		
		to At	to Atmosphere		CH4	kg	1.22E-03	3.05E-04	3.78E-08	2.75E-03	2.64E-05	-2.23E-04		
				-	CO NMVOC	kg	1.75E-02	7.69E-03	1.02E-02	3.20E-02	4.44E-03	-7.06E-03		
	e +				CxHy	kg kg	2.38E-03 5.78E-03	5.98E-04 6.47E-03	7.40E-08 9.88E-04	5.38E-03 5.61E-03	5.16E-05 1.15E-04	-4.36E-04 -2.60E-03		
	Emission/Discharge to the environment				dust	kg	1.84E-02	5.66E-04	3.26E-03	1.61E-02	1.24E-03	-2.00E-03		
	n/Dist				BOD	kg	-	-	-	-	-	-		
	issior he er				COD	kg	-	-	-	-	-	-		
	t E	to Wat	ater system		N total	kg	-	-	-	-	-	_		
					P total	kg	-	-	-	-	-	-		
					SS	kg	-	-	-	-	-	-		
				Uns	pecified solid waste	kg	8.28E-01	2.39E-04	0	4.31E+00	1.14E+01	-4.48E-01		
		to S	oil system	Slag		kg	4.46E+00 2.76E-01	0	0	1.09E+00 9.57E-01	0	-1.98E+00		
		.00	oyacanı		Sludge Low emission radioactive waste	kg kg	3.20E-04	0 7.98E-05	9.87E-09	8.57E-01 7.19E-04	6.88E-06	-4.53E-01		
	umption			E	Energy resources rude oil equivalent)	kg	4.45E+01	2.04E+01	1.99E+00	6.25E+01	5.60E-01	-5.94E-05 -1.54E+01		
t	by Resource Consu		haustible sources	N	Mineral resources ron ore equivalent)	kg	1.23E+02	0	0	4.94E+01	0	-5.50E+01		
men	by Re:													
sest					Global warming (CO2 equivalent)	kg	1.39E+02	5.82E+01	6.60E+00	1.92E+02	1.69E+01	-5.07E+01		
st as	u u	Atr	to nosphere		Acidification (SO2 equivalent)	kg	1.94E-01	5.13E-02	2.88E-02	2.71E-01	2.40E-02	-7.84E-02		
Impact assesment	Emission													
	by Emissic Consumpti		o Water system											
		1	to Soil system											

[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) C. "Use" stage is intended for use of the product (active mode, standby mode, etc.) and production, transportation to disposal/recycle of consumable
- 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 material production of recycled materials are included in the values with minus as a recycling effect.

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(Input data and parameters fo					
Document control no.	. F-03-03				
Product vendor	KONICA MINOLTA, INC.				
EcoLeaf registration no.	AD-13-E250				
		-   Dr			
PCR name	EP and IJ printer (PCR-ID:AD-04)	Pro			

roduct type 26.5 bizhub 215 Weight total[kg] LCA/LCIA in units of: Product weight[kg] Package[kg] 8.9 35.4 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 app	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	1.28E+01	Paper	2.88E+00	Press molding:Iron	1.21E+01	Parts assembly	2.64E-01
Stainless steel	1.34E-01	Rubber	9.34E-02	Press molding:Nonfer rous metal	4.00E-01		
Aluminium	1.22E-01	Semiconductor circuit board	1.09E+00	Injection molding	1.11E+01		
Other metals	2.80E-01			Blow molding	1.00E-01		
Glass	1.53E+00			Glass molding	1.53E+00		
Thermoplastic resin	1.14E+01						
Thermosetting resin	0						
Wood	5.01E+00						
Subtotal	3.13E+01	Subtotal	4.06E+00				
	Total		3.54E+01	Subtotal	2.53E+01	Subtotal	2.64E-01

Z. 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.

ç	Classification	Energy	Energy	Material	Material					
ptio	Distribution	Electricity	Furnace urban	Tapwater	Groundwater					
E E	Distribution	(kWh)	gas (m <sup>3</sup> )	(kg)	(kg)					
suo	Quantity	3.12E+00	1.48E+01	1.45E+01	5.13E+01					
0	Note									
Emission/ Discharge	Classification	To Water system								
issi cha	Distribution	Sewage(kg)								
En	Quantity	2.81E+01								
	Note									
3. Distribu	Distribution stage information (per unit): means, distance, loading ratio, consumptions and emissions/discharges.									

Distribution		Means of transportation	Freight by ship	Diesel truck	Diesel truck			
	tion	Means of transportation		:20ton	:2ton			
	tribu	Conditions	Load(kg·km)	Load(kg·km)	Load(kg•km)			
	Dis	Quantity	9.06E+04	2.21E+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

	uot ana accocconice canjeet te tii	ie analyeie							
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Product	Distribution	Electricity (kWh)	Gasoline as fuel(kg)	Furnace urban gas (m <sup>3</sup> )	Groundwater (kg)	Ordinary steel (kg)	Stainless steel (kg)	Aluminium (kg)	Copper(kg)
Pro	Quantity	2.42E+02	4.16E-01	3.75E+00	6.11E+02	3.28E+00	2.79E-01	3.78E-01	9.38E-03
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Processing	Processing	Processing	Processing
Product	Distribution	Glass(kg)	Thermoplastic resin(kg)	Paper(kg)	Rubber(kg)	Press:Iron(kg)	Press: Nonferrous(kg)	Injection molding(kg)	Blow molding (kg)
ų į	Quantity	6.50E-02	1.62E+01	3.57E+00	2.16E-01	4.30E+00	4.10E-01	2.72E-02	1.19E+01
	Note								
	Classification	Assembly	To Water system	Distribution	Distribution	Distribution			
Product	Distribution	Parts assembly (kg)	Sewage(kg)	Freight by ship (kg·km)	Diesel truck: 20ton (kg•km)	Diesel truck: 10ton (kg∙km)			
	Quantity	1.19E+01	3.81E+02	8.59E+03	4.98E+03	3.81E+03			
	Note								
	Classification								
Product	Distribution								
-	Quantity								
	Note								
4.2 Dispc	osition/Recycle information on co	nsumables and i	eplacement part	s			1	L	
ø	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 Glass(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)
Suc	Quantity	4.24E-01	5.43E-03	1.42E+00	1.51E-01	3.75E-03	2.60E-02	4.16E+00	1.43E+00
ŏ	Note								
	Classification	Treatment	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction	Deduction
Consumables	Distribution	Industrial waste destruction by fire(kg)	Industrial waste inning(kg)	Waste destruction by fire(kg)	Waste inning(kg)	lron(kg)	Aluminum(kg)	Copper(kg)	Glass(kg)
ā					2.41E+00	-1.42E+00	-1.51E-01	-3.75E-03	-2.60E-02
ŭ	Quantity	8.63E-02	4.20E-02	8.57E+00	2.416+00		-1.01E-01	-3.70E-03	
ŏ	Quantity Note	8.63E-02	4.20E-02	8.57E+00	2.41E+00	1.422.00	-1.512-01	-3.73E-03	2.002 02
ŏ		8.63E-02 Deduction	4.20E-02 Deduction	8.57E+00 Distribution	Distribution	1.422.00	-1.512-01	-3.73E-03	2.002 02
	Note					1.422.100	-1.512-01	-3.73E-03	
Consumables	Note Classification	Deduction	Deduction	Distribution Diesel truck: 10ton	Distribution Diesel truck: 4ton	1.722.100		-3.732-03	2.001 02

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

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 Glass(kg)	Recycle: to plastics(kg)	Recycle: to Paper(kg)
suo	Quantity	8.21E-01	1.05E-02	5.17E+00	4.87E-02	2.60E-01	6.12E-01	4.53E+00	3.31E+00
0	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)	lron(kg)	Aluminium (kg)	copper(kg)
8	Quantity	1.48E-01	3.03E-01	7.52E-02	1.16E+01	9.50E+00	-5.17E+00	-4.87E-02	-2.60E-01
	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)		
Ō	Quantity	-6.12E-01	-4.53E+00	-3.31E+00	-1.48E-01	1.70E+03	2.05E+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:

D. Product and accessories subject to this analysis: The power consumption is calculated assuming the use period of five years and 264,600 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.

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.

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