

[Supplemental environmental information]

Certified Environmental Standards

Japan Eco Mark

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

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

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



Document control no. F-02B-03								nation DR vension	0.1			
Product vendor KONICA								nction DB version Factor DB version	v2.1			
Eco	EcoLeaf registration no. AD-12-15					,	Characterization	Factor DB version	v2.1		環境情報 ww.jemai.or.jp	
	-	R nar	-	EP and IJ print	er	Product type			bizhub 36			
	PC	R−I	D	AD-04		Product weight[kg]	63.0	Package[kg]	13.5	Weight total[kg]	76.5	
				Life Cycle Stage	11-14	Produ	uction	Distribution		Dismost	Desvela	
In/O	ut ite	ms			Unit	Raw material	Product	Distribution	Use	Disposal	Recycle	
		E	nerav Co	onsumption	MJ	5.57E+03	1.01E+03	1.67E+02	1.11E+04	5.47E+01	-2.40E+03	
	1				Mcal	1.33E+03	2.42E+02	3.98E+01	2.66E+03	1.31E+01	<u>-5.72E+02</u>	
				Coal	kg	4.21E+01	5.85E+00	3.89E-04	5.87E+01	3.21E-01	-1.63E+01	
			Energy	Crude oil (as a fuel)	kg	5.13E+01	9.38E+00	3.64E+00	7.57E+01	5.06E-01	-1.90E+01	
				Natural Gas Uranium ore	kg	9.52E+00	3.01E+00 3.96E-04	5.62E-02 2.64E-08	2.77E+01	1.64E-01 2.17E-05	-2.62E+00	
				Crude oil (as an	mg	9.65E-04			3.49E-03	1	-1.81E-04	
				ingredients)	kg	2.40E+01	0	0	2.34E+01	0	-1.84E+01	
				Iron ore	kg	3.29E+01	0	0	5.94E+00	0	-1.55E+01	
				Copper ore	kg	9.86E-01	0	0	6.83E-03	0	-3.12E-01	
	_			Bauxite	kg	4.17E-01	0	0	6.65E-01	0	-4.31E-01	
	nption	Exhaustible resources		Nickel ore	kg	1.51E-01	0	0	1.35E-01	0	-1.15E-01	
	iron	haus		Chromium ore	kg	2.16E-01	0	0	1.85E-01	0	<u>-1.60E-01</u>	
	Resource Consumption from the environment	Т. Б		Manganese ore Plumbous ore	kg	1.88E-01	0	0	5.33E-02	0	-2.55E-02	
	sourc		Material	Tin ore	kg kg	4.92E-02 0	0	0	0	0	<u>-1.34E-02</u> 0	
	Ret			Zinc ore	кg kg	4.84E-01	0	0	0	0	-1.32E-01	
				Gold ore	kg	0	0	0	0	0	0	
				Silver ore	kg	0	0	ů 0	0	Ő	0	
				Silica sand	kg	1.93E+00	0	0	9.26E-02	0	-5.73E-01	
				Rock salt	kg	1.64E+01	2.30E-03	0	5.80E-01	2.08E-02	-6.50E+00	
lyses				Limestone	kg	7.12E+00	0	0	1.43E+00	3.41E-01	-2.67E+00	
/ ana				Natural soda ash	kg	1.59E-01	0	0	2.55E-03	0	-5.03E-02	
Inventory analyses		Renew		Wood	kg	1.94E+01	0	0	1.52E+01	0	-1.38E+01	
Inve		resources		Water	kg	2.16E+04	5.06E+03	2.95E-01	4.19E+04	2.63E+02	-4.78E+03	
				CO2	kg	2.98E+02	5.46E+01	1.18E+01	5.10E+02	3.42E+01	<u>-1.11E+02</u>	
				SOx	kg	1.78E-01	3.87E-02	6.71E-03	3.77E-01	1.80E-02	-6.65E-02	
				NOx N2O	kg	3.52E-01	4.71E-02	4.76E-02	4.46E-01	3.73E-02	-1.56E-01	
		to Atmosphere	CH4	kg	2.51E-02	2.48E-03	2.11E-03	1.90E-02	5.14E-05	-1.19E-02 -4.77E-04		
		to Aun	to Atmosphere	CO	kg kg	2.58E-03 3.91E-02	1.06E-03 7.50E-03	7.06E-08 1.08E-02	9.33E-03 8.10E-02	5.81E-05 6.50E-03	-4.77E-04 -1.54E-02	
				NMVOC	kg	5.03E-03	2.07E-03	1.38E-07	1.83E-02	1.14E-04	-9.33E-04	
	ant			CxHy	kg	1.25E-02	1.08E-03	1.56E-03	7.32E-03	1.05E-04	-5.93E-03	
	ischa			dust	kg	4.07E-02	3.80E-03	4.77E-03	3.36E-02	2.02E-03	-1.94E-02	
	Emission/Discharge to the environment			BOD	kg	-	-	-	_	-	-	
	missi o the			COD	kg	-	-	-	-	-	_	
	шŞ	to Wat	er system	N total	kg	-	-	_	-	-	-	
				P total	kg	-	-	-	I	-	-	
		<u> </u>		SS	kg	-	-	-	-	-	-	
				Unspecified solid waste	kg	2.22E+00	1.87E-02	0	7.91E+00	2.55E+01	-9.60E-01	
		to Soil	system	Slag	kg	1.10E+01	0	0	1.90E+00	0	-4.59E+00	
				Sludge Low emission	kg	5.33E-01	0	0	1.43E+00	0	-7.84E-01	
				radioactive waste	kg	6.76E-04	2.76E-04	1.84E-08	2.44E-03	1.51E-05	-1.27E-04	
	e 5			Energy resources	kg	9.77E+01	2.00E+01	3.71E+00	1.75E+02	1.09E+00	-3.41E+01	
	by Resource Consumption		austible	(crude oil equivalent) Mineral resources								
Ħ	by Re Const	res	ources	(Iron ore equivalent)	kg	3.96E+02	0	0	1.30E+02	0	-1.84E+02	
Impact assesment	<u> </u>											
ses				Global warming (CO2 equivalent)	kg	3.05E+02	5.53E+01	1.24E+01	5.16E+02	3.42E+01	-1.14E+02	
t as	no No	Atm	to osphere	Acidification	kg	4.24E-01	7.17E-02	4.01E-02	6.90E-01	4.42E-02	-1.76E-01	
pac	Emision	Auno	Spriere	(SO2 equivalent)	.0				0.002 01			
Ē	by Emision	to	Water									
	Con by	sy	stem									
			Soil									
		sy	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) 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).
 E. "Recycle Effect" illustrates an indirect environmental influences to other products/services by use of reclaimed materials/parts, and/or by supply of used products to other businesses for material reclaim/parts reuse.
- Case 1: Use of reclaimed materials/parts: Sum of increase of environmental impact by collection activities of used materials/parts, and decrease by volume reduction of used materials/parts.
- Case 2: Supply of used products to other businesses for material reclaim/parts reuse: Sum of increase of environmental impact by materials/parts reclaiming process, and decrease by volume reduction of new materials/parts 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 on energy resources are presented based on origin in calorific value. e.g. Data on uranium ore presents weight of uranium concentrate,
- which is available for use as an atomic fuel. 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 no 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 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). 777,600 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 & recycling 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 material production of recycled materials are included in the values with minus as a recycling effect.

Form3 (F-03-03)

Product data sheet (Input data and parameters for LCA)

 F-03-03

 KONICA MINOLTA, INC.

 A D - 1 2 - 1 5 4
 (PCR-ID:AD-04)
 Document control no. Product vendor EcoLeaf registration no. PCR name LCA/LCIA in units of: EP and IJ printer



76.5

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

i roduct mornation (for unit). purts et	c. by material and by process/ass	chibly include				
	Breakdo	wn 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)
Ordinary steel	3.13E+01	Paper	6.23E+00	Press molding:Iron	2.90E+01	Parts assembly	8.15E+00
Stainless steel 9.55E-01		Rubber	1.93E-01	Press molding:Nonfer rous metal	1.24E+00		
Aluminium	2.35E-01	Semiconductor circuit board	2.19E+00	Injection molding	2.62E+01		
Other metals	1.00E+00			Blow molding	1.43E-01		
Glass	1.25E+00			Glass molding	7.42E-02		
Thermoplastic resin	2.70E+01						
Thermosetting resin	0						
Wood	6.14E+00						
Subtotal	6.79E+01	Subtotal	8.62E+00				
	Total		7.65E+01	Subtotal	5.66F+01	Subtotal	8.15E+00

Product type 63.0

Package[kg]

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

Product weight[kg]

c	Classification	Energy	Energy	Energy	Energy	Material	Material	
sumption	Distribution	Electricity (kWh)	Heavy oil as fuel(kg)	Diesel oil as fuel(kg)	Furnace urban gas (m ³)	Industrial water(kg)	Groundwater (kg)	
suo	Quantity	4.05E+01	2.59E+00	1.50E-01	5.06E-02	4.95E+02	1.16E+02	
Ű	Note							
۱/ Je	Classification	To Water system						
Emission/ Discharge	Distribution	Sewage(kg)						
Di	Quantity	3.97E+02						
	Note							

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

Distribution	Means of transportation	Freight by ship	Diesel truck	Diesel truck			
			:20ton	:2ton			
	Conditions	Load(kg•km)	Load(kg•km)	Load(kg•km)			
	Quantity	1.96E+05	2.24E+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 access	sories subject to this analysis
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Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Distribution	Electricity (kWh)	Heavy oil as fuel(kg)	Diesel oil as fuel(kg)	Gasoline as fuel(kg)	Furnace urban gas (m ³)	Industrial water(kg)	Groundwater (kg)	Ordinary steel (kg)
Quantity	9.09E+02	3.59E-01	2.09E-02	8.32E-01	8.09E-01	6.86E+01	1.54E+03	5.46E+00
Note								
Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Distribution	Stainless steel (kg)	Aluminium (kg)	Copper(kg)	Glass(kg)	Thermoplastic resin(kg)	Wood(kg)	Paper(kg)	Rubber (kg)
Quantity	8.53E-01	6.29E-01	2.07E-02	2.91E-02	2.35E+01	9.45E-01	6.68E+00	4.76E-01
Note								
Classification	Consumption	Processing	Processing	Processing	Processing	Processing	Assembly	To Water system
Distribution	Semiconductor circuit board(kg)	Press:lron(kg)	Press: Nonferrous(kg)	Injection molding (kg)	Blow molding (kg)	Glass molding (kg)	Parts assembly (kg)	Sewage(kg)
Quantity	4.30E-03	3.73E+00	6.80E-01	5.11E+00	7.72E+00	0.00E+00	7.72E+00	4.56E+02
Note								
Classification	Distribution	Distribution	Distribution					
Distribution	Freight by ship (kg·km)	Diesel truck: 20ton (kg•km)	Diesel truck: 10ton (kg•km)					
Quantity	9.73E+03	6.66E+03	5.93E+03					
Note								
	Classification Distribution Quantity Note Classification Distribution Quantity	Classification Consumption Distribution Electricity (kWh) Quantity 9.09E+02 Note Classification Classification Consumption Distribution Stainless steel (kg) Quantity 8.53E-01 Note Consumption Distribution Semiconductor circuit board(kg) Quantity 4.30E-03 Note Distribution Classification Distribution Classification Freight by ship (kg*km) Quantity 9.73E+03	Classification Consumption Consumption Distribution Electricity (kWh) Heavy oil as fuel(kg) Quantity 9.09E+02 3.59E-01 Note Olassification Consumption Consumption Distribution Stainless steel (kg) Aluminium (kg) Quantity 8.53E-01 6.29E-01 Note Olassification Consumption Processing Quantity 8.53E-01 6.29E-01 Note Classification Consumption Processing Processing Distribution Semiconductor circuit board(kg) Press:Iron(kg) 3.73E+00 Note Distribution Distribution Distribution Distribution Freight by ship (kg*km) Diesel truck: 20ton (kg*km) Quantity 9.73E+03 6.66E+03	Classification Consumption Consumption Consumption Distribution Electricity (kWh) Heavy oil as fuel(kg) Diesel oil as fuel(kg) Quantity 9.09E+02 3.59E-01 2.09E-02 Note Consumption Consumption Consumption Classification Consumption Consumption Consumption Distribution Stainless steel (kg) Aluminium (kg) Copper(kg) Quantity 8.53E-01 6.29E-01 2.07E-02 Note Distribution Semiconductor cricuit board(kg) Processing Distribution Semiconductor cricuit board(kg) Press:Iron(kg) Press: Nonferrous(kg) Quantity 4.30E-03 3.73E+00 6.80E-01 Note Distribution Distribution Distribution Distribution Freight by ship (kg*km) Diesel truck: 20ton (kg*km) Diesel truck: 10ton (kg*km) Quantity 9.73E+03 6.66E+03 5.93E+03	Classification Consumption Censumption Censumption Censumption Casoline as fuel(kg) Gasoline as fuel(kg)	Classification Consumption Consumption Consumption Consumption Consumption Consumption Consumption Consumption Consumption Furnace urban fuel(kg) Fueresin(kg) Fueresin(kg) <t< td=""><td>ClassificationConsumptionFurnace urban gas (m³)Industrial water(kg)Quantity9.09E+023.59E-012.09E-028.32E-018.09E-016.86E+016.86E+01NoteConsumptionConsumptionConsumptionConsumptionConsumptionConsumptionConsumptionDistributionStainless steel (kg)Aluminium (kg)Copper(kg)Glass(kg)Thermoplastic resin(kg)Wood(kg)Quantity8.53E-016.29E-012.07E-022.91E-022.35E+019.45E-01Note0ProcessingProcessingProcessingProcessingProcessingDistributionSemiconductor ricrcuit board(kg)Press:Iron(kg)Press:IngInjectionBlow molding (kg)Glass molding (kg)Quantity4.30E-033.73E+006.80E-015.11E+007.72E+000.00E+00NoteDistributionDistributionDistributionDistribution0DistributionDistributionDistributionDistribution0DistributionDistributionDistributionDistribution0DistributionDistributionDistributionDistribution0DistributionDistribution</td><td>ClassificationConsump</td></t<>	ClassificationConsumptionFurnace urban gas (m ³)Industrial water(kg)Quantity9.09E+023.59E-012.09E-028.32E-018.09E-016.86E+016.86E+01NoteConsumptionConsumptionConsumptionConsumptionConsumptionConsumptionConsumptionDistributionStainless steel (kg)Aluminium (kg)Copper(kg)Glass(kg)Thermoplastic resin(kg)Wood(kg)Quantity8.53E-016.29E-012.07E-022.91E-022.35E+019.45E-01Note0ProcessingProcessingProcessingProcessingProcessingDistributionSemiconductor ricrcuit board(kg)Press:Iron(kg)Press:IngInjectionBlow molding (kg)Glass molding (kg)Quantity4.30E-033.73E+006.80E-015.11E+007.72E+000.00E+00NoteDistributionDistributionDistributionDistribution0DistributionDistributionDistributionDistribution0DistributionDistributionDistributionDistribution0DistributionDistributionDistributionDistribution0DistributionDistribution	ClassificationConsump

4.2 Dis	sposition/Recycle	information on c	onsumables and	replacement par	ts				
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)
Consul	Quantity	1.06E+00	1.38E-02	2.53E+00	2.51E-01	8.86E-03	1.16E-02	9.32E+00	3.05E+00
0	Note								
	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction
Consumables	Distribution	Recycle: to Assembled circuit board(kg)	Industrial waste destruction by fire(kg)	Industrial waste inning(kg)	Waste destruction by fire(kg)	Waste inning(kg)	lron(kg)	Aluminum(kg)	Copper(kg)
Con	Quantity	5.85E-04	1.91E-01	9.42E-02	1.90E+01	4.20E+00	-2.53E+00	-2.51E-01	-8.86E-03
-	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)		
Cor	Quantity	-1.16E-02	-9.32E+00	-3.05E+00	-5.85E-04	1.85E+03	2.24E+03		
	Note								

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

ŝ	Classification	Consumption	Consumption	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment
mables	Distribution	Electricity	Kerosene(kg)	Recycle: to	Recycle: to	Recycle: to	Recycle: to	Recycle: to	Recycle: to
3		(kWh)		iron(kg)	Aluminum(kg)	copper(kg)	Glass(kg)	plastics(kg)	Paper(kg)
suo	Quantity	2.09E+00	2.73E-02	1.29E+01	9.40E-02	7.00E-01	4.99E-01	1.07E+01	5.25E+00
Ó	Note								
	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction
sumables	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)
Con	Quantity	2.98E-01	6.13E-01	1.75E-01	2.37E+01	2.16E+01	-1.29E+01	-9.40E-02	-7.00E-01
	Note								
	Classification	Deduction	Deduction	Deduction	Deduction	Distribution	Distribution		
sumables	Distribution	Glass(kg)	Plastics(kg)	Paper(kg)	Recycle: to Assembled circuit board(kg)	Diesel truck: 10ton (kg•km)	Diesel truck: 4ton (kg•km)		
ē	Quantity	-4.99E-01	-1.07E+01	-5.25E+00	-2.45E+00	3.67E+03	4.44E+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 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.