

- Japan Eco Mark
- International Energy Star Program
- Conforming to Japanese Law on Promoting Green Purchasing
- This product consists of recycled material at more than 25% weight ratio of total resin volume.PCR<sup>\*\*</sup> ratio of this recycled material is approximately 70%.
- \* PCR (post-consumer recycling): materials recovered and recycled from consumers.

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 □internal ■external Third party verifier: The third party verifier \* : Kazuo Naito

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.

# Form 2 (F-02B-03)

# Product Environmental Information Data Sheet (PEIDS)

Document control no. F-02B-03								•	Unit Function DB version 2.1					
Product vendor KONICA					).						<u>2.1</u> 2.1		LEALS	
					o.		-15-545		Characterization Factor DB version 2.1				記環境情報 p://www.iemai.or.ip	
PCR name ED and LI printer Dreduct time									bizhub C308					
PCR name EP and IJ print PCR-ID AD-04							er	Product type	05.0		07.5			
						AD-04		Product weight[kg]	85.0	Package[kg]	12.5	Weight total[kg]	97.5	
In/O	Life Cycle Stage						Unit	Produ Raw material	uction Distribution		Use	Disposal	Recycle	
in/O	ut ite	em	s				MJ	5.40E+03	1.25E+03	1.74E+02	1.06E+04	7.26E+01	-2 505+02	
	Energy C				nergy Consumption			1.29E+03	3.00E+02	4.16E+02	2.54E+03	1.73E+01	<u>-2.59E+03</u> -6.18E+02	
	1	T			1		Mcal kg	5.67E+01	7.89E+00	4.07E-04	4.55E+01	3.69E-01	-2.53E+01	
					Crude oil (as a fuel)		kg	4.42E+01	9.04E+00	3.81E+00	7.02E+01	7.80E-01	-1.67E+01	
			Energy		Natural Gas		kg	9.48E+00	5.08E+00	5.88E-02	3.39E+01	1.91E-01	-3.14E+00	
				Ī	Uran	nium ore	mg	8.16E-04	5.34E-04	2.76E-08	2.04E-03	2.50E-05	-1.21E-04	
					Crude oil (as an ingredients) Iron ore		kg	1.84E+01	0	0	5.29E+01	0	-1.86E+01	
							kg	5.17E+01	0	0	1.11E+01	0	-2.51E+01	
		Exhaustible				Copper ore	kg	1.03E+00	0	0	2.36E-03	0	-3.42E-01	
	_					Bauxite	kg	1.38E+00	0	0	2.63E+00	0	-1.60E+00	
	nent		ces			Nickel ore	kg	5.80E-02	0	0	1.96E-02	0	-3.11E-02	
	nsun		resources			Chromium ore	kg	9.54E-02	0	0	3.04E-02	0	-5.03E-02	
	e Co	Ŭ,				Manganese ore	kg	2.68E-01	0	0	6.20E-02	0	-2.05E-02	
	Resource Consumption from the environment		Mate	rial		Plumbous ore	kg	4.22E-02	0	0	0	0	-1.16E-02	
	fro			-	_	Tin ore	kg	0	0	0	0	0	0	
				-		Zinc ore Gold ore	kg	4.15E-01	0	0	0	0	<u>-1.14E-01</u>	
				-		Silver ore	kg	0	0	0	0	0	0	
				-		Silica sand	kg kg	2.51E+00	0	0	1.35E-01	0	-7.99E-01	
				-		Rock salt	kg	8.57E+00	1.26E-03	0	1.30E+00	3.01E-02	-2.85E+00	
ses				ŀ		Limestone	kg	1.07E+01	0	0	2.51E+00	3.54E-01	-4.27E+00	
Inventory analyses				F	N	latural soda ash	kg	2.04E-01	0	0	4.24E-04	0.042 01	-7.00E-02	
tory a		R	enewable			Wood	kg	1.73E+01	0	0	1.43E+01	0	-1.26E+01	
nven			esources			Water	kg	2.03E+04	6.33E+03	3.06E-01	2.91E+04	3.01E+02	-6.02E+03	
_						CO2	kg	3.15E+02	6.46E+01	1.24E+01	4.88E+02	3.69E+01	-1.30E+02	
						SOx	kg	2.03E-01	4.68E-02	8.56E-03	3.56E-01	2.00E-02	-1.05E-01	
						NOx	kg	3.76E-01	4.30E-02	7.63E-02	6.79E-01	4.95E-02	-1.79E-01	
						N2O	kg	2.38E-02	4.55E-03	1.82E-03	8.47E-02	7.10E-05	-1.28E-02	
		to	to Atmosphere			CH4	kg	2.16E-03	1.43E-03	7.37E-08	5.39E-03	6.68E-05	<u>-2.97E-04</u>	
				-		CO	kg	6.08E-02	9.62E-03	2.34E-02	8.98E-02	1.09E-02	-2.47E-02	
	φ			-		NMVOC CxHy	kg	4.22E-03	2.80E-03	1.44E-07	1.06E-02	1.31E-04	-5.81E-04	
	harg			-		dust	kg kg	1.27E-02 4.56E-02	7.69E-04 2.02E-03	2.04E-03 6.91E-03	2.26E-02 5.38E-02	3.15E-04 2.95E-03	-6.30E-03 -2.36E-02	
	Emission/Discharge to the environment	F		-		BOD	kg kg	4.30E-02	2.02E-03 -	0.912-03	<u>5.36E-02</u>	2.95E-03	-2.30E-02	
	ssion te en			-	_	COD	kg	_	_	-	_	-	_	
	Emi to th	to	Water sys	tem		N total	kg	-	_	-	-	-	_	
						P total	kg	_	-	-	-	-	-	
						SS	kg	-		-		_		
		ſ	to Soil system		Unsp	pecified solid waste	kg	2.09E+00	8.37E-03	0	1.32E+01	3.72E+01	-1.12E+00	
						Slag	kg	1.62E+01	0	0	3.38E+00	0	-7.33E+00	
		to				Sludge	kg	2.47E+00	0	0	5.64E+00	0	-3.24E+00	
						Low emission idioactive waste	kg	5.71E-04	3.73E-04	1.93E-08	1.42E-03	1.74E-05	-8.49E-05	
	nsumption		Exhaustible resources			nergy resources ide oil equivalent)	kg	9.86E+01	2.46E+01	3.88E+00	1.57E+02	1.45E+00	-3.77E+01	
nent	by Resource Consumption					ineral resources on ore equivalent)	kg	3.32E+02	0	0	6.38E+01	0	-1.31E+02	
sest	on	T				Global warming (CO2 equivalent)	kg	3.21E+02	6.59E+01	1.28E+01	5.11E+02	3.69E+01	-1.33E+02	
ass	npti		to Atmosphere			Acidification		4.67E-01	7.69E-02	6.19E-02	8.31E-01	5.46E-02	-2.30E-01	
Impact assesment	Consur	A				(SO2 equivalent)	kg	4.0/E-01	7.09E-02	0.192-02	0.312-01	0.40E-UZ	-2.30E-01	
-	Emision Consumption		to Wate systen											
	by Em		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) 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 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 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 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). 540,000 sheets are printed in total during the use period of five years. 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.

Form3 (F-03-03)								
	Pro	duct data sheet						
	(	Input data and parameters for LCA	)			1 00	10 N	
Document control no.		F-03-03	ĺ			° (11)		
Product vendor	KO	NICAMINOLTA.INC.				製品語は		
EcoLeaf registration no.		AD-15-545				間間 台西 本現 ス https://www.j		
PCR name	EP and IJ printer	(PCR-ID:AD-04)	Product type	bizhub C308				
LCA/LCIA in units of:	1	Product weight[kg]	85.0	Package[kg]	12.5	Weight total[kg]	97.5	
1. Product information (per unit): parts				Math breakdown of parts, which need to apply Processing / Assembly Base Units (Parts B, C)				
Material name	Breakdown of primary materials Material name Weight (kg) Material name					· · · · ·		
Watenainaine	Weight (kg)	Waterial Hame	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)	
Ordinary steel	4.96E+01	Rubber	2.55E-01	Press molding:Iron	4.67E+01	Parts assembly	0	
Stainless steel	3.61E-01	Semiconductor circuit board	1.79E+00	Press molding:Nonfe rrous metal	1.99E+00			
Aluminium	1.09E+00			Injection molding	2.99E+01			
Other metals	9.03E-01			Blow molding	0			
Glass	1.90E+00							
Thermoplastic resin	3.00E+01							
Wood	6.50E+00							
Paper	5.06E+00							
Subtotal	9.54E+01	Subtotal	2.04E+00					
	Total		9.75E+01	Subtotal	7.87E+01	Subtotal	0	

2.04E+00 9.75E+01 7.87E+01 Subtotal 2. Production site information (per unit): Consumption and discharge/emission for production/processing/assembly within the site.

 
 generation
 generation

 Sox and NOx should be indicated in SO2, NO2 equivalent.
 Elessification

 Energy
 Distribution

 Electricity
 Electricity
 Energy Furnace urban Material Industrial Material Groundwater Distribution (kWh) 5.30E+01 gas (m<sup>3</sup>) 1.44E+00 water(kg) 2.22E+02 (kg) 1.23E+02 Quantity Note Con To Water system Classification Emission/ Discharge Distribution Sewage(kg) 2.17E+02 Quantity Note 3. Distribution stage information (per unit): means, distance, loading ratio, consumptions and emissions/discharges.

 g
 Means of transportation
 Freight by ship
 Diesel truck :20ton
 Diesel truck
 Conditions Quantity Note Load(kg•km) 1.66E+05 Load(kg•km) 5.64E+04 Load(kg · km) 1.50E+03 Distri

4. Use stage (per unit): use condition (mode, term) including active mode, standby mode and maintenance.

Image: Distribution      Electricity (kWh)      Gasoline as fue(kg)      Furnace urban (kg)      Industrial (kg)      Groundwater (kg)      Ordinary steel (kg)      Stail (kg)	(kg) 1.23E-01 Processing low molding	Consumption Aluminium (kg) 2.48E+00 Assembly Parts assembly(kg) 9.71E+00							
Open      Distribution      (kWh)      fuel(kg)      gas (m <sup>3</sup> )      water(kg)      (kg)      <	(kg) 1.23E-01 Processing low molding (kg)	2.48E+00 Assembly Parts assembly (kg)							
Openation      (kWh)      fuel(kg)      gas (m <sup>3</sup> )      water(kg)      (kg)      (kg)        Quarity      4.87E+02      1.81E+00      1.99E+01      5.45E+01      2.64E+03      1.07E+01      1        Note	(kg) 1.23E-01 Processing low molding (kg)	2.48E+00 Assembly Parts assembly(kg)							
Outlinity      4.072*02      1.012*00      1.992*01      3.432*01      2.042*03      1.072*01      1        Note      Image: Classification      Consumption      Consumption      Processing      Pro	Processing low molding (kg)	Assembly Parts assembly (kg)							
Note      Note      Classification      Consumption      Consumption      Processing      Processing <td>low molding (kg)</td> <td>Parts assembly(kg)</td>	low molding (kg)	Parts assembly(kg)							
Understand      Thermoplastic resin(kg)      Consumption      Consumption      Consumption      Consumption      Consumption      Press: Nonferrous(kg)      Injection molding(kg)      Bio molding(kg)        Quantity      5.28E+01      6.74E+00      6.40E-01      1.36E+01      1.58E+00      7.23E+00      9        Note      To Water system      To Water	low molding (kg)	Parts assembly(kg)							
Openation      resin(kg)      Paper(kg)      Rubber(kg)      Press:ron(kg)      Nonferrous(kg)      molding(kg)        Quantity      5.28E+01      6.74E+00      6.40E-01      1.36E+01      1.58E+00      7.23E+00      9        Note      Image: State of the state o	(kg)	assembly(kg)							
Classification      To Water system      Classification      C	9.71Ē+00	9.71E+00							
Classification      To Water system      To Water        Distribution      Sewage(kg)      Image: Classification of the system									
Bit      System      System        Distribution      Sewage(kg)      Image: Classification of the system of the									
Quantity 1.75E+03									
Note									
Classification Distribution Distribution Distribution									
Bigs      Distribution      Freight by ship (kg·km)      Diesel truck: 20ton      Diesel truck: 10ton        0      (kg·km)      (kg·km)      (kg·km)									
Quantity 3.01E+04 1.31E+04 8.30E+03									
Note Contract No									
osition/Recycle information on consumables and replacement parts									
	Treatment	Treatment							
	Recycle: to Paper(kg)	Industrial waste destruction by fire(kg)							
	2.70E+00	2.60E-01							
Note									
	Deduction	Deduction							
Bitstribution      Industrial waste inning(kg)      Waste destruction by fire(kg)      Waste inning(kg)      Iron(kg)      Aluminum(kg)      Copper(kg)      Plance        Quantity      1.31E-01      2.40E+01      7.98E+00      -4.32E+00      -9.94E-01      -2.33E-03      -1	Plastics(kg)	Paper(kg)							
Operating      1.31E-01      2.40E+01      7.98E+00      -4.32E+00      -9.94E-01      -2.33E-03      -1	-1.29E+01	-2.70E+00							
Note									
Classification Distribution Distribution									
Bitstribution      Diesel truck: 10ton (kg·km)      Diesel truck: 4ton (kg·km)      Diesel truck: 4ton        Quantity      2.56E+03      3.10E+03      Image: Comparison of the second se									
2      (kg*km)      (kg*km)        Quantity      2.56E+03      3.10E+03									

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

ş	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)
Consul	Quantity	2.67E+00	3.66E-02	1.99E+01	4.35E-01	6.05E-01	7.61E-01	6.71E+00	4.87E+00
0	Note								
	Classification	Treatment	Treatment	Treatment	Treatment	Deduction	Deduction	Deduction	Deduction
nsumables	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)	Glass(kg)
Const	Quantity	5.38E-01	1.35E-01	2.51E+01	3.32E+01	-1.99E+01	-4.35E-01	-6.05E-01	-7.61E-01
	Note								
	Classification	Deduction	Deduction	Distribution	Distribution				
Consumables	Distribution	Plastics(kg)	Paper(kg)	Diesel truck: 10ton (kg•km)	Diesel truck: 4ton (kg•km)				
Õ	Quantity	-6.71E+00	-4.87E+00	4.68E+03	5.66E+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 540,000 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. Treatment of copper and deduction of copper include copper of " assembled circuit board". Incineration of assembled circuit board is included "Incineration: Industrial waste".

### 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. Treatment of copper and deduction of copper include copper of " assembled circuit board". Incineration of assembled circuit board is included "Incineration: Industrial waste".