

* 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)



Do		ent control			02B-03			nction DB version	I LEATE		
Eco		duct vendor				,	Characterization	Factor DB version	v2.1		品環境情報
200	EcoLeaf registration no. AD-12-181 PCR name EP and IJ printer Product type bizhub C654										www.jemal.or.jp
					er	· · · ·					
PCR-ID AD-04				Product weight[kg]	221.0	Package[kg]	38.6	Weight total[kg]	259.6		
In/O	ut ite	ms		Life Cycle Stage	Unit	Produ Raw material	Iction Product	Distribution	Use	Disposal	Recycle
		_	_		MJ	1.41E+04	3.37E+03	3.98E+02	3.66E+04	1.78E+02	-8.02E+03
		Energy	Consu	mption	Mcal	3.37E+03	8.05E+02	9.50E+01	8.74E+03	4.25E+01	-1.91E+03
			Coa	ıl	kg	1.67E+02	2.21E+01	9.30E-04	2.14E+02	8.76E-01	-9.73E+01
		Energy	Cru	de oil (as a fuel)	kg	1.08E+02	2.50E+01	8.69E+00	2.66E+02	1.94E+00	-5.38E+01
		Lifergy	Nat	ural Gas	kg	2.20E+01	1.12E+01	1.34E-01	7.93E+01	4.55E-01	-1.06E+01
			Ura	nium ore	mg	2.00E-03	1.50E-03	6.30E-08	8.08E-03	5.92E-05	-4.29E-04
				Crude oil (as an ingredients)	kg	4.90E+01	0	0	1.47E+02	0	-4.18E+01
				Iron ore	kg	1.63E+02	0	0	7.80E+01	0	-9.64E+01
				Copper ore	kg	3.76E+00	0	0	8.10E-01	0	-1.65E+00
				Bauxite	kg	3.29E+00	0	0	1.16E+01	0	-5.96E+00
	ption	ible		Nickel ore	kg	2.48E-01	0	0	1.13E+00	0	-5.51E-01
	nsum	Exhaustible resources		Chromium ore	kg	3.88E-01	0	0	1.56E+00	0	-7.78E-01
	Cor	Ext ree		Manganese ore	kg	8.48E-01	0	0	5.73E-01	0	-1.31E-01
	Resource Consumption from the environment	Materia		Plumbous ore	kg	1.43E-01	0	0	0	0	-4.72E-02
	Reso from			Tin ore	kg	0	0	0	0	0	0
				Zinc ore	kg	1.41E+00	0	0	0	0	-4.64E-01
				Gold ore	kg	0	0	0	0	0	0
				Silver ore	kg	0	0	0	0	0	0
				Silica sand	kg	5.73E+00	0	0	8.67E-01	0	-1.85E+00
				Rock salt	kg	3.21E+01	3.58E-03	0	1.51E+01	8.93E-02	<u>-1.83E+01</u>
Inventory analyses				Limestone	kg	3.22E+01	0	0	1.54E+01	7.40E-01	-1.55E+01
' ana			1	Natural soda ash	kg	3.93E-01	0	0	0.00E+00	0	-1.32E-01
nton		Renewable resources	-	Wood	kg	5.23E+01	0	0	8.06E+01	0	-5.31E+01
Inve		103001003	-	Water	kg	4.67E+04	1.80E+04	7.02E-01	1.19E+05	7.07E+02	-2.01E+04
			-	CO2	kg	8.45E+02	1.72E+02	2.82E+01	1.77E+03	7.88E+01	-4.51E+02
				SOx	kg	5.15E-01	1.31E-01	1.71E-02	1.48E+00	4.31E-02	-3.86E-01
			-	NOx N2O	kg	8.75E-01	1.05E-01	1.31E-01	2.29E+00	1.13E-01	-5.90E-01
		to Atmocphoro		CH4	kg	5.94E-02	2.26E-03	4.77E-03 1.68E-07	1.28E-01	1.75E-04	-3.93E-02
		to Atmosphere		CO CO	kg	5.30E-03 1.26E-01	4.00E-03 2.55E-02	3.39E-02	2.14E-02 4.00E-01	1.58E-04 2.62E-02	-1.04E-03
				NMVOC	kg kg	1.04E-01	7.85E-02	3.39E-02 3.30E-07	4.00E-01 4.19E-02	3.10E-04	-9.18E-02 -2.04E-03
	m			CxHy	kg	3.07E-02	4.71E-04	4.00E-03	5.68E-02	8.33E-04	-1.97E-02
	harg			dust	kg	1.12E-01	5.63E-03	1.27E-02	2.18E-01	6.87E-03	-7.76E-02
	Emission/Discharge to the environment			BOD	kg	-	-	-	-	-	-
	sion. e en			COD	kg	_	_	_		_	_
	Emis to th	to Water system	n	N total	kg	_	_	_	_	-	_
				P total	kg	_	_	_	_	_	_
				SS	kg	-	-	-	-	-	-
			Uns	pecified solid waste	kg	4.61E+00	2.62E-02	0	7.15E+01	1.11E+02	-4.01E+00
				Slag	kg	5.09E+01	0	0	2.32E+01	0	-2.81E+01
		to Soil system		Sludge	kg	5.15E+00	0	0	2.42E+01	0	-1.18E+01
			n	Low emission adioactive waste	kg	1.40E-03	1.05E-03	4.40E-08	5.64E-03	4.13E-05	-3.00E-04
	sumption		(cr	nergy resources ude oil equivalent)	kg	2.58E+02	6.49E+01	8.85E+00	5.64E+02	3.54E+00	-1.32E+02
Ŧ	Emision Consumption by Resource Consumption	Exhaustibl resources	N	lineral resources on ore equivalent)	kg	1.17E+03	0	0	1.19E+03	0	-8.72E+02
me	by Re										
Impact assesment	nption	to		Global warming (CO2 equivalent)	kg	8.61E+02	1.73E+02	2.95E+01	1.81E+03	7.88E+01	-4.61E+02
pact a	usuc	Atmospher	e	Acidification (SO2 equivalent)	kg	1.13E+00	2.04E-01	1.09E-01	3.08E+00	1.22E-01	-7.99E-01
Ē	ion Co	to Water	-								
	mis	system	+								
	by E	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) "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 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 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). 2,535,000 sheets are printed in total during the use period of five vears.
- 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 LC	A
Document control no.	F-03-03	
Product vendor	KONICA MINOLTA, INC.	
EcoLeaf registration no.	AD-12-181	
202		_



bizhub C654 8.6 Weight total[kg] EP and IJ printer (PCR-ID:AD-04) Product type PCR name LCA/LCIA in units of: Package[kg] Product weight[kg 38.6 259.6 221.0 1. Product information (per unit): parts etc. by material and by process/assembly method

1. I Todadet Information (p	. Trouder information (per unit), parts etc. by material and by process/assembly method											
	Breakdown	of primary materials	Math breakdown of par	ts, which need to apply	Processing / Assembly E	Base Units (Parts B, C)						
Material name	Material name Weight (kg) Material name			Process name	Weight (kg)	Process name	Weight (kg)					
Ordinary steel	1.57E+02	Paper	1.74E+01	Press molding:Iron	1.47E+02	Parts assembly	4.94E+00					
Stainless steel	1.55E+00	Rubber	4.24E-01	Press molding:Nonf	5.40E+00							
Aluminium	2.27E+00	Semiconductor circuit board	3.83E+00	Injection molding	5.19E+01							
Other metals	4.10E+00			Blow molding	1.54E-01							
Glass	3.55E+00			Glass molding	3.55E+00							
Thermoplastic resin	5.46E+01											
Thermosetting resin	0											
Wood	1.53E+01											
Subtotal	2.38E+02	Subtotal	2.16E+01									
	Total		2 60E+02	Subtotal	2 08E+02	Subtotal	4 94E+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.

Ę	Classification	Energy	Energy	Energy	Energy	Material	Material	
Consumption	Distribution	Electricity	Heavy oil as	Diesel oil as	Furnace	Industrial	Groundwater	
		(kWh)	fuel(kg)	fuel(kg)	urban gas	water(kg)	(kg)	
suo	Quantity	1.64E+02	0.00E+00	2.07E-03	1.40E-01	6.94E+02	5.03E+02	
O	Note							
	Classification	To Water						
on/ rge		system						
Emission/ Discharge	Distribution	Sewage(kg)						
Er	Quantity	6.18E+02						
	Note							

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

Distribution	Means of transportation	Eroight by ohin	Diesel truck	Diesel truck				
	tion	mound of transportation	reight by ship	:20ton	:2ton			
	ē	Conditions	Load(kg·km)	Load(kg·km)	Load(kg·km)			
	Quantity	4.41E+05	8.12E+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

		Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	ğ	Distribution	Electricity	Heavy oil as	Diesel oil as	Gasoline as	Furnace	Industrial	Groundwater	Ordinary
	Product	Distribution	(kWh)	fuel(kg)	fuel(kg)	fuel(kg)	urban gas	water(kg)	(kg)	steel(kg)
	ų.	Quantity	1.81E+03	0.00E+00	1.25E-03	5.40E+00	5.30E+00	4.19E+02	1.05E+04	7.28E+01
		Note								
		Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Product	Distribution	Stainless steel (kg)	Aluminium (kg)	Copper(kg)	Glass(kg)	Thermoplastic resin(kg)	Wood(kg)	Paper(kg)	Rubber(kg)
	r L	Quantity	7.15E+00	1.07E+01	1.26E-01	0.00E+00	1.50E+02	8.21E+00	3.40E+01	1.66E+00
		Note								
I		Classification	Consumption	Processing	Processing	Processing	Processing	Processing	Assembly	To Water system
	Product	Distribution	Semiconductor circuit	Press:Iron (kg)	Press: Nonferrous(kg)	Injection molding(kg)	Blow molding (kg)	Glass molding(kg)	Parts assembly	Sewage(kg)
	ш [Quantity	0.00E+00	1.10E+02	4.09E+00	2.38E+01	0.00E+00	0.00E+00	0.00E+00	3.06E+03
		Note								
		Classification	Distribution	Distribution	Distribution					
	Product	Distribution	Freight by ship (kg·km)	Diesel truck: 20ton (kg•km)	Diesel truck: 10ton (kg•km)					
	_	Quantity	4.22E+05	2.10E+05	2.79E+04					

4.2 Disposition/Recycle information on consumables and replacement parts

	· · · ·			ana replacem	•				
8	Classification	Consumption	Consumption	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment
abl	Distribution	Electricity	Kerosene(kg)	Recycle: to	Recycle: to	Recycle: to	Recycle: to	Recycle: to	Recycle: to
Consumables	Distribution	(kWh)	Rerosene(kg)	iron(kg)	Aluminum(kg)	copper(kg)	Glass(kg)	plastics(kg)	Paper(kg)
	Quantity	5.37E+00	7.00E-02	3.19E+01	4.27E+00	5.04E-02	0.00E+00	2.46E+01	1.69E+01
Q	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)
õ	Quantity	0.00E+00	6.63E-01	2.95E-01	6.35E+01	5.45E+01	-3.19E+01	-4.27E+00	-5.04E-02
-	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)		
Ŝ	Quantity	0.00E+00	-2.46E+01	-1.69E+01	0.00E+00	9.44E+03	1.14E+04		
	Note								

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	7.09E+00	9.24E-02	6.31E+01	9.09E-01	2.16E+00	1.42E+00	2.16E+01	1.36E+01
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)
Ŝ	Quantity	5.20E-01	1.10E+00	4.16E-01	5.26E+01	1.02E+02	-6.31E+01	-9.09E-01	-2.16E+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	-1.42E+00	-2.16E+01	-1.36E+01	-5.20E-01	1.25E+04	1.51E+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 3,375,000 sheets printed during the use period according to the PCR (AD-04)

(AD-04).

D-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.

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.