

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 regulations: International Energy Star Program, EU RoHS.

• This product and its main components such as photoreceptor, toner, and carrier are produced in our factories certified to ISO14001 management system standard.

PCR review was conducted by: PCR Deliberation Committee, January 01, 2008, Name of representative: Youji Uchiyama, University of Tsukuba, Graduate School

Independent verification of the declaration and data, according to ISO14025 □internal ■external Third party verifier \* : Kazuo Naito, system certification auditor

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

\* In the case of an 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 II category.

# Product Environmental Information Data Sheet (PEIDS)



Document control no.	F-02Bs-02
Product vendor	RICOH COMPANY, LTD.
EcoLeaf registration no.	AD-17-E937

Unit Function DB version	

Characterization Factor DB version

PCR name	EP and IJ print	Product type					
PCR code	AD-04	Product weight (kg)	46.2	Package (kg)	11.4	Weight total (kg)	57.6

				Life Cycle Stage		Produ	uction				Recycle
In/Ou	ut items				Unit	Raw material	Product	Distribution	Use	Disposition	Effect
	Energy Consumption					4.31E+03	7.87E+02	6.27E+02	3.14E+04	1.45E+01	-8.45E+03
			ergy Co	insumption	Mcal	1.03E+03	1.88E+02	1.50E+02	7.51E+03	3.46E+00	-2.02E+03
			> Se	Coal	kg	2.90E+01	4.63E+00	1.47E-03	1.43E+02	8.14E-02	-7.32E+01
			Energy resources	Crude oil (for fuel)	kg	4.16E+01	5.73E+00	1.37E+01	3.07E+02	1.66E-01	-4.34E+01
			Ene	LNG	kg	7.70E+00	3.84E+00	2.11E-01	9.28E+01	4.22E-02	-4.52E+00
	es Impact by Resource Consumption		Ie	Uranium content of an ore	kg	6.84E-04	3.13E-04	9.92E-08	5.00E-03	5.50E-06	6.40E-05
				Crude oil (for material)	kg	1.86E+01	0	0	9.57E+01	0	-8.83E+01
				Iron content of an ore	kg	1.98E+01	0	0	5.86E+01	0	-7.92E+01
		ĕ	urce	Cu content of an ore	kg	7.21E-01	0	0	2.94E-01	0	-1.23E+00
		Exhaustible resources		Al content of an ore	kg	4.61E-01	0	0	4.06E+00	0	-4.32E+00
	lo	esc	S	Ni content of an ore	kg	2.48E-01	0	0	2.46E+00	0	-1.61E-03
	0	E E	eo.	Cr content of an ore	kg	3.42E-01	0	0	3.35E+00	0	-2.94E-02
	ő	ple	Inc	Mn content of an ore	kg	1.45E-01	0	0	7.07E-01	0	-6.87E-02
	D0	Isti	ese	Pb content of an ore	kg	6.74E-02	0	0	3.12E-02	0	-1.00E-01
	sex	าลเ	Mineral resources	Sn content of an ore	kg	1.74E-03	0	0	1.06E-03	0	0
	<u>~</u>	Ä	era	Zn content of an ore	kg	7.21E-01	0	0	3.54E-01	0	-9.86E-01
	, p	-	Jin	Au content of an ore	kg	2.12E-05	0	0	3.83E-05	0	0
	act		2	Ag content of an ore	kg	1.08E-02	0	0	2.64E-05	0	0
S	du			Silica Sand	kg	1.85E+00	0	0	1.49E+00	0	-2.57E+00
'se	-			Halite	kg	1.59E+01	3.02E-03	0	2.12E+01	2.11E-03	-9.33E-01
aiy				Limestone	kg	4.78E+00	0	0	1.30E+01	1.74E-01	-1.39E+01
an				Natural soda ash	kg	1.62E-01	0	0	8.50E-02	0	-1.96E-01
ry		Renewable		Wood	kg	2.11E+01	0	0	8.81E+01	0	0
ntc		resources		Water	kg	1.60E+04	3.96E+03	1.10E+00	1.11E+05	6.98E+01	-8.24E+03
Inventory anaiyses				CO <sub>2</sub>	kg	2.23E+02	4.15E+01	4.45E+01	1.54E+03	1.35E+01	-3.78E+02
-				SOx	kg	1.44E-01	2.75E-02	2.80E-02	1.00E+00	7.12E-03	-2.75E-01
	he			NO <sub>x</sub>	kg	2.85E-01	3.08E-02	2.26E-01	2.45E+00	1.62E-02	-4.18E-01
	ot		hq	N <sub>2</sub> O	kg	2.01E-02	5.60E-03	7.25E-03	2.44E-01	1.81E-05	-5.01E-02
	et		SOL	CH <sub>4</sub>	kg	1.82E-03	8.37E-04	2.65E-07	1.33E-02	1.47E-05	2.52E-04
	arg		-tru	CO	kg	3.12E-02	6.06E-03	6.24E-02	4.09E-01	2.99E-03	5.53E-03
	t Sh		0	NMVOC	kg	3.56E-03	1.64E-03	5.20E-07	2.60E-02	2.89E-05	4.92E-04
	Dis.		+	C <sub>x</sub> H <sub>v</sub>	kg	9.70E-03	9.22E-04	6.61E-03	8.35E-02	6.33E-05	-2.05E-02
				Dust	kg	3.12E-02	1.20E-03	2.14E-02	2.14E-01	8.38E-04	-7.29E-02
	mission/Discl environment			BOD	kg	-	-	-	-	-	-
	, vn	n ter	ain	COD	kg	-	-	-	-	-	-
	En	o Water system	Va me	N total	kg	-	-	-	-	-	-
	Impact by Emission/Discharge to the environment	sy s	to Water domain	P total	kg	-	-	-	-	-	-
	t			SS	kg	-	-	-	-	-	-
	pa			Unspecified Solid Waste	kg	2.34E+00	1.39E-02	0	3.43E+01	4.26E+00	-1.19E+00
	<u>=</u>	to	Soil	Slag	kg	8.22E+00	0	0	2.03E+01	0	-2.51E+01
		sy	stem	Sludge	kg	9.88E-01	0	0	8.70E+00	0	-9.27E+00
				Low level radio-active waste	kg	4.79E-04	2.19E-04	6.93E-08	3.49E-03	3.85E-06	4.49E-05
ment	Resource insumption	Exha	austible		kg	7.51E+01	1.59E+01	1.40E+01	5.52E+02	3.14E-01	-9.53E+01
sessi	ç b	reso	ources	Mineral resources (Iron ore equivalent)	kg	2.46E+03	0	0	2.23E+03	0	-5.12E+02
mpact assessment	by Emission / Discharge to environment	to		Global Warming (CO <sub>2</sub> equivalent)	kg	2.28E+02	4.30E+01	4.65E+01	1.60E+03	1.35E+01	-3.92E+02
_	s for reade			Acidification (SO <sub>2</sub> equivalent)	kg	3.43E-01	4.91E-02	1.87E-01	2.72E+00	1.85E-02	-5.68E-01

[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 materials/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. CO 2 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".

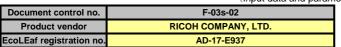
(BGD for material production are for production from mineral ore. Those data do not include reclaiming processes like recovery from scrap.)

[Notes for readers: Target product specific]

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 LCA)





	PCR name	EP	and IJ print	er(PCR-ID:AD-04)	Product	уре		MP	C407SP	FG [	Part # 418033 】	
LCA/	LCIA in units of:		1	product	Product weig	pht (kg) 46.2	F	Package (	kg) 11	1.4	Weight total (kg)	57.6
. Produ	uct information (p	er unit): pa	arts etc. by	material and by process/as	sembly me	thod						
		Bre	eakdown of pi	rimary materials		Math breakdown	of parts	s, which ne	ed to apply	Process	ing / Assembly Base U	Jnits (Parts B, C)
	Material na	me	Weight (kg)	Material name	Weight (kg)	Process	name	We	eight (kg)	F	Process name	Weight (kg)
	Stainless st	teel	1.56E+00	Thermosetting resin	8.10E-01	Press mo Iron (k		1.	97E+01	Par	ts assembly (kg)	4.53E+01
	Aluminum		4.35E-01	Electronic circuit board	1.20E+00	Press molding: Nonferrous metal (kg)		2	41E+00			
ct	Glass		1.58E+00	Ordinary steel	1.86E+01	Injection molding (kg)		(kg) 2.	15E+01			
Product	Rubber		1.73E-01	Wood	1.14E-04	Glass molding (kg)		g) 1.	75E+00			
ā	Other meta	als	1.98E+00									
	Paper		9.82E+00									
	Lubrican	t	8.54E-03									
	Thermoplastic	resin	2.14E+01									
	Subtota		3.69E+01	Subtotal	2.06E+01							
			Total		5.76E+01	Subto	tal	4.	53E+01		Subtotal	4.53E+01
Note												

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

SOx and NOx should be indicated in SO<sub>2</sub>, NO<sub>2</sub> equivalent.

ы	Classification	Energy	Energy	Energy	Material	Energy	Material	
sumption	Distribution	Electricity (kWh)	Steam (kg)	Furnace LNG (kg)	Clean water (kg)	Furnace urban gas (13A) (m <sup>3</sup> )	Industrial water (kg)	
Consur	Quantity	2.41E+01	4.03E+00	1.42E-01	1.29E+02	1.74E+00	3.12E+02	
S	Note							
	Classification	Water system						
Emission/ Discharge	Distribution	Sewage processing (kg)						
Dis	Quantity	5.21E+02						
	Note							
Note								

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

			, ,	, ,					
ion	Means of transportation	Diesel truck: 20 ton (kg·km)	Freight by ship (kg∙km)	Freight by ship (kg∙km)	Freight by ship (kg∙km)	Freight by ship (kg · km)			
tribut	Conditions	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)
Dist	Quantity	5.76E+01	1.28E+03	4.64E+01	1.58E+05	5.76E+01	1.16E+04	1.00E+02	6.67E+05
	Note								

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

-			et to this analysi	-					
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Stainless steel plate (kg)	Aluminum plate (kg)	Glass (kg)	Styrene- butadiene rubber (SBR) (kg)	Copper plate (kg)	Zinc (kg)	Gold (kg)	Silver (kg)
	Quantity	1.56E+01	3.84E+00	9.51E-01	1.46E+00	8.78E-01	9.96E-02	3.83E-05	2.64E-05
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Condition	Consumption
	Distribution	Tin (kg)	Corrugated cardboard (kg)	Lubricant (kg)	ABS (kg)	PA66 (Polyamide 66) (kg)	PBT (kg)	Diesel truck: 20 ton (kg·km)	Polycarbonate (kg)
	Quantity	6.98E-04	4.14E+01	1.38E-02	1.56E+01	2.39E-02	1.84E-01	1.96E+05	6.72E-02
uct	Note								
Product	Classification	Consumption	Consumption	Consumption	Consumption	Condition	Consumption	Consumption	Consumption
<u>а</u>	Distribution	Polycarbonate- ABS (70/30) (kg)	Low density polyethylene (kg)	PET (kg)	POM (polyacetal) (kg)	Freight by ship (kg∙km)	Polypropylene (kg)	Polystyrene (kg)	Epoxy resin (EP) (kg)
	Quantity	1.79E+01	2.19E+00	8.08E+01	1.88E+00	1.10E+06	1.04E+00	5.07E+00	1.01E+00
	Note								
	Classification	Consumption	Consumption	Consumption	Condition	Consumption	Consumption	Consumption	Consumption
	Distribution	Expandable hard polyurethane (Hard) (kg)	Expandable soft polyurethane (for automobile) (kg)	Unsaturated polyester (UP) (kg)	Diesel truck: 20 ton (kg∙km)	Assembled circuit board (kg)	Electroplated steel Plate (kg)	Cold-Rolled steel plate (kg)	Press molding: Iron (kg)
	Quantity	9.62E-03	7.69E-01	2.32E-01	1.48E+04	2.12E-01	1.11E+01	4.05E+01	6.00E+01
	Note								

	Classification	Consumption	Condition	Consumption	Consumption	Consumption	Energy	Condition	Energy
	Distribution	Press molding: Nonferrous metal (kg)	Freight by ship (kg∙km)	Injection molding (kg)	Glass molding (kg)	Parts assembly (kg)	Electricity (kWh)	Diesel truck: 20 ton (kg·km)	Furnace LNG (kg)
#	Quantity	4.81E+00	8.34E+04	7.29E+01	2.41E+00	1.40E+02	4.28E+02	2.89E+05	1.08E+01
Ę	Note								
Product	Classification	Material	Energy	Material	Water system	Consumption	Condition	Consumption	
	Distribution	Clean water (kg)	Furnace urban gas (13A) (m <sup>3</sup> )	Industrial water (kg)	Sewage processing (kg)	Electricity (kWh)	Freight by ship (kg∙km)	Gasoline as fuel (kg)	
	Quantity	7.36E+02	3.40E+01	2.65E+02	2.18E+03	4.28E+02	1.63E+06	2.05E+01	
	Note								

Note

### 4.2 Disposition/Recycle information on consumables and replacement parts

	Classification	Process	Process	Process	Process	Process	Process	Process	Process
	Distribution	Landfill: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Diesel truck: 4 ton (kg∙km)	Shredding (kg)	Sorting: Iron (by magnetic force) (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Glass (kg)
	Quantity	2.16E+01	4.13E+01	4.00E+03	1.53E+02	1.52E+02	9.44E+01	8.98E+01	9.51E-01
~	Note								
ples	Classification	Process	Process	Process	Process	Deduction	Deduction	Deduction	Deduction
Consumables	Distribution	Recycle: to cold-rolled steel (kg)	Recycle: to Aluminum plate (kg)	Recycle: to copper plate (kg)	Recycle: to Thermoplastic pellet (kg)	Glass (kg)	Cold-Rolled steel plate (kg)	Aluminum plate (kg)	Copper plate (kg)
-	Quantity	5.76E+01	3.68E+00	1.14E+00	6.80E+01	9.32E-01	5.76E+01	3.68E+00	1.14E+00
	Note								
	Classification	Deduction	Process						
	Distribution	Polystyrene (kg)	Diesel truck: 10 ton (kg∙km)						
	Quantity	6.80E+01	1.22E+05						
	Note								

Note

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

	Classification	Process	Process	Process	Process	Process	Process	Deduction	Process
	Distribution	Landfill: Industrial waste (kg)	Shredding (kg)	Incineration: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Diesel truck: 10 ton (kg∙km)	Diesel truck: 4 ton (kg∙km)	High density polyethylene (kg)	Sorting: Iron (by magnetic force) (kg)
	Quantity	2.89E+00	4.81E+01	9.52E-01	8.82E+00	3.85E+04	8.54E+02	5.86E-01	4.51E+01
	Note								
	Classification	Process	Process	Process	Process	Process	Process	Process	Deduction
Scenario	Distribution	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Glass (kg)	Recycle: to cold-rolled steel (kg)	Recycle: to Aluminum plate (kg)	Recycle: to copper plate (kg)	Recycle: to Thermoplastic pellet (kg)	Glass (kg)
	Quantity	2.63E+01	2.41E+01	1.43E+00	1.88E+01	4.06E-01	2.96E+00	2.07E+01	1.40E+00
	Note								
	Classification	Deduction	Deduction	Deduction	Deduction				
	Distribution	Cold-Rolled steel plate (kg)	Aluminum plate (kg)	Copper plate (kg)	Polystyrene (kg)				
	Quantity	1.88E+01	4.06E-01	2.96E+00	2.01E+01				
	Note								
Note									

#### 6. Others

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.