Product Environmental Aspects Declaration



EP and IJ printer (PCR-ID:AD-04)

No. AD-14-E427 Date of publication Sep./12/2014

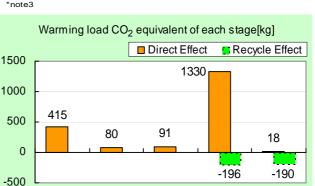


SAVIN MP C5503SP

1.Printing process : Electrophotographic (EP) Printing
2.Color : Monochrome and Full-color
3.Print Speed : 55 ppm B&W and FC (LTR)
4.Maximum Paper Size : 12" x 18"
5.Included Units in Assessment : Single Pass Document Feeder, Automatic Duplex Unit

The warming load of the Use stage is based on the supposition that the product prints 1,804,800 images for five years.

Consumption and discharge in a	All the stage sum						
life cycle	totals						
Global Warming (CO ₂	1.94						
equivalent) / t	(1.55)						
Acidification (SO ₂	3.13						
equivalent) / kg	(2.65)						
Energy resources (crude oil	39.0						
equivalent) / GJ	(30.7)						
%Figures in () indicated environmental impact including recycle effect							



Raw Product Distribution Use Disposition material

Notes:

(X)

- 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, 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 reprentative: Youji Uchiyama, University of Tsukuba, Graduate School

Independent verification of the declaration and data, according to ISO14025 □internal ■external Third party verifier: Hiroo Sakazaki *

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 III category.



Environment Contact: RICOH Company, Ltd. Corporate Communication Center email : envinfo@ricoh.co.jp



The photo shows the product with an optional Paper Feed Unit (※) attached. The environmental load of the optional unit is not included in the results. Document control no.

Product Environmental Information Data Sheet (PEIDS)

Unit Function DB version V2.1

F-02B-03



Product vendor			RICOH C	RICOH COMPANY, LTD.			on Factor DB version	v2.1	1	http://www.jemai.or.jp
EcoLeaf registration no. AD-		-14-E42	,			12.1	1			
	_	-						0.0.000.000	0550000	
		R name		nd IJ pri		Product type		_	P C5503SP	
	ŀ	PCR ID	AD-04		Product weight (kg)	100	Package (kg)	15	Weight total (kg)	115
			Life Cycle Stage		Prod	uction				D ", '
In/Ou	In/Out items			Unit	Raw material	Product	Distribution	Use	Disposition	Recycle effect
Eno	ray Con	sumption		MJ	7.76E+03	1.47E+03	1.25E+03	2.85E+04	2.79E+01	-8.35E+03
LIIE	igy con	sumption		Mcal	1.85E+03	3.51E+02	2.98E+02	6.81E+03	6.67E+00	-1.99E+03
			Coal	kg	6.54E+01	9.66E+00	8.61E-01	1.14E+02	1.08E-01	-7.53E+01
		Energy	Crude oil (for fuel)	kg	6.73E+01	1.10E+01	2.57E+01	2.62E+02	4.11E-01	-4.13E+01
		- 5,	LNG	kg	1.16E+01	6.01E+00	8.00E-01	8.21E+01	5.88E-02	-3.36E+00
			Uranium content of an ore	kg	9.95E-04	6.53E-04	5.65E-05	5.01E-03	7.28E-06	7.83E-05
			Crude oil (for material)	kg	3.72E+01	0	0	1.04E+02	0	-8.84E+01
			Iron content of an ore	kg	4.93E+01	0	0	3.64E+01	0	-8.63E+01
			Cu content of an ore	kg	1.57E+00	0	0	8.09E-02	0	-1.87E+00
	5 t		Al content of an ore	kg	1.17E+00	0	0	1.74E+00	0	-2.76E+00
	Resource Consumption from the environment	Exhaustible resources	Ni content of an ore	kg	5.62E-01	0	0	1.31E+00	0	-1.76E-03
	ronr		Cr content of an ore	kg	7.78E-01	0	0	1.79E+00	0	-3.21E-02
	Cor	Les	Mn content of an ore	kg	3.52E-01	0	0	4.05E-01	0	-7.49E-02
	the	Material	Pb content of an ore	kg	1.31E-01 0	0	0	7.99E-03	0	-1.52E-01
	.om		Sn content of an ore	kg	1.31E+00	0	0	0 8.78E-02	0	0 -1.49E+00
	an a t		Zn content of an ore	kg kg		0	0		0	-1.49E+00 0
			Au content of an ore Ag content of an ore	кg kg	0	0	0	0	0	0
			Silica Sand	kg	6.94E+00	0	0	5.02E-01	0	-2.68E+00
			Halite	kg	3.44E+01	0	0	2.00E+01	3.60E-03	-2.00E+00
ses			Limestone	kg	1.10E+01	0	0	8.78E+00	2.72E-01	-7.45E-01 -1.51E+01
Inventory analyses			Natural soda ash	kg	2.05E-01	0	0	7.45E-03	0	-1.83E-01
rya		Renewable	Wood	kg	2.32E+01	0	0	6.64E+01	0	0.00E+00
ento		resources	Water	kg	2.19E+04	8.02E+03	6.32E+02	1.04E+05	9.20E+01	-5.24E+03
<u>v</u>			CO ₂	kg	4.05E+02	7.84E+01	8.72E+01	1.28E+03	1.80E+01	-3.74E+02
			SO _v	kg	3.10E-01	5.73E-02	4.92E-02	8.07E-01	9.91E-03	-2.20E-01
			NO _x	kg	5.10E-01	5.04E-02	3.03E-01	1.82E+00	3.05E-02	-3.72E-01
			N ₂ O	kg	3.66E-02	4.82E-03	1.48E-02	2.01E-01	3.74E-05	-4.78E-02
		to Atmosphere	CH ₄	kg	2.62E-03	1.75E-03	1.51E-04	1.34E-02	1.95E-05	2.63E-04
			CO	kg	6.98E-02	1.17E-02	6.30E-02	2.64E-01	7.45E-03	1.69E-02
	۰.		NMVOC	kg	5.14E-03	3.42E-03	2.96E-04	2.62E-02	3.81E-05	5.13E-04
	nen		C _x H _y	kg	1.79E-02	8.19E-04	1.02E-02	6.68E-02	2.67E-04	-1.99E-02
	Disct iron		Dust	kg	6.40E-02	2.47E-03	3.09E-02	1.66E-01	1.73E-03	-6.92E-02
	Emission/Discharge to the environment		BOD	kg	-	-	-	-	-	-
	the		COD	kg	-	-	-	-	-	-
	ц Б С	to Water system	N total	kg	-	-	-	-	-	-
			P total	kg	-	-	-	-	-	-
			SS	kg	-	-	-	-	-	-
			Unspecified Solid Waste	kg	3.86E+00	0	0	2.47E+01	7.98E+00	-7.88E-01
		to Soil system	Slag	kg	2.21E+01	0	0	1.21E+01	0	-2.78E+01
		to our system	Sludge	kg	2.50E+00	0	0	3.73E+00	0	-5.91E+00
			Low level radio-active waste	kg	6.99E-04	4.56E-04	3.95E-05	3.50E-03	5.08E-06	5.49E-05
nent	by Resource Consumption	Exhaustible	Energy resources (crude oil equivalent)	kg	1.31E+02	2.98E+01	2.77E+01	4.76E+02	6.10E-01	-9.30E+01
ssessn		resources	Mineral resources (Iron ore equivalent)	kg	1.12E+03	0	0	1.17E+03	0	-7.06E+02
Impact assessment	by Emission/ Discharge to the environment	to Atmosphere	Global Warming (CO ₂ equivalent)	kg	4.15E+02	7.97E+01	9.12E+01	1.33E+03	1.80E+01	-3.87E+02
Ë	by En Disch t envir		Acidification (SO ₂ equivalent)	kg	6.67E-01	9.26E-02	2.61E-01	2.08E+00	3.13E-02	-4.81E-01

[Notes for readers: EcoLeaf common rules]

A. 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.

By Barker by Similar to the decimal point to two, should be used.
 A Exponential notation, after the decimal point to two, should be used.
 B indicate "0" instead exponential notation can not be done, in order to differentiate to indicate "zero" or negligible in comparison to related results.
 C indicate "1" if calculation nor estimation can not be done, in order to differentiate to indicate "zero".
 (BQD 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)



Document control no.	F-03-03
Product vendor	RICOH COMPANY, LTD.
EcoLEaf registration no.	AD-14-E427

1		PCR name	name EP and IJ printer (PCR-ID : AD-04)			уре	SAVI	N MP C5503SP			
	LCA/LCIA in units of:		f: 1 product		Product weig	pht (kg) 100 F	Package (kg)	15 Weight total (kg) 115		
1.	. Product information (per unit): parts etc. by material and by process/assembly method										
			Breakdown o	f primary materials		Math breakdown of parts	, which need to appl	ly Processing / Assembly Base	Units (Parts B, C)		
		Material na	ame Weight (g) Material name	e Weight (kg)	Process name	Weight (kg) Process name	Weight (kg)		
		SUS	3.55E+0	0 PCB	1.55E+00	Press molding: Iron (kg)	4.85E+01	Parts assembly (kg)	1.01E+02		
		Alminur	n 1.10E+0	0 Steel	4.60E+01	Press molding: Nonferrous metal (5 936-100				
	duct	Glass	2.15E+0	0 Wood	1.15E-01	Injection molding (kg) 4.27E+01				
	rod	Rubbei	4.11E-0	1		Glass molding (kg	g) 2.56E+00				
	ā	Other met	tals 4.82E+0	0							
		Paper	1.06E+0	1							
		Thermopla	astic 4.07E+0	1							
		Thermoset	tting 3.86E+0	0							
		Subtota	al 6.72E+0	1 Subtotal	4.76E+01						
			Total		1.15E+02	Subtotal	9.97E+01	Subtotal	1.01E+02		

Note

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

SOx ar	SOx and NOx should be indicated in SO ₂ , NO ₂ equivalent.									
L.	Classification	Energy	Material	Energy	Material	Energy				
Consumption	Distribution	Electricity (kWh)	Clean water (kg)	Furnace LNG (kg)	Industrial water (kg)	Furnace urban gas (13A) (m ³)				
suo	Quantity	4.09E+01	1.32E+02	3.70E-01	5.48E+02	1.02E+00				
S	Note									
	Classification	Water system								
Emission/ Discharge	Distribution	Sewage processing (kg)								
ini;	Quantity	6.80E+02								
	Note									

Note

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

	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)			
	Conditions	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)
u	Quantity	1.15E+02	2.53E+01	4.80E+01	6.05E+03	1.15E+02	1.20E+04	1.00E+02	1.37E+06
outi	Note								
Distribution	Means of transportation	Freight by rail	Freight by rail	Freight by rail	Freight by rail	Diesel truck:	Diesel truck:	Diesel truck:	Diesel truck:
_	transportation	(kg•km)	(kg·km)	(kg∙km)	(kg∙km)	20 ton (kg·km)	20 ton (kg·km)	20 ton (kg·km)	20 ton (kg·km)
	Conditions	(kg·km) Mass(kg)	(kg·km) Distance (km)	(kg∙km) Loading Ratio(%w)	(kg·km) Load(kg·km)	20 ton (kg∙km) Mass(kg)	20 ton (kg · km) Distance (km)	20 ton (kg · km) Loading Ratio(%w)	20 ton (kg·km) Load(kg·km)
				Loading				Loading	

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

Classificat	on Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Distributi	Stainless steel plate (kg)	Aluminum plate (kg)	Glass (kg)	Styrene- butadiene rubber (SBR) (kg)	Copper plate (kg)	Zinc (kg)	Tin (kg)	Corrugated cardboard (kg)
Quantit	8.30E+00	1.64E+00	8.82E-02	5.67E-01	2.68E-01	1.93E-02	4.62E-04	3.12E+01
Note								
Classificat	on Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Distributi	on ABS (kg)	PA66 (Polyamide 66) (kg)	PBT (kg)	Polycarbonate (kg)	Polycarbonate- ABS (70/30) (kg)	Low density polyethylene (kg)	PET (kg)	POM (polyacetal) (kg)
Quantit	3.63E-01	4.72E-02	2.97E-02	2.95E-01	1.59E+01	1.58E-02	8.41E+01	8.30E-01
Note								
Classificat	on Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Distributi	Polypropylene (kg)	Polystyrene (kg)	PVC (kg)	Epoxy resin (EP) (kg)	Expandable hard polyurethane (Hard) (kg)	Expandable soft polyurethane (for automobile) (kg)	Unsaturated polyester (UP) (kg)	Assembled circuit board (kg)
Quantit	2.59E-01	3.12E+01	8.25E-03	3.62E-01	4.75E-03	1.64E+00	1.18E-01	2.12E-03
Note								

	Classification	Consumption	Condition	Consumption	Consumption	Consumption	Consumption	Consumption	Condition
Product	Distribution	Electroplated steel Plate (kg)	Diesel truck: 10 ton (kg·km)	Cold-Rolled steel plate (kg)	Press molding: Iron (kg)	Press molding: Nonferrous metal (kg)	Injection molding (kg)	Glass molding (kg)	Freight by ship (kg · km)
	Quantity	8.11E+00	2.12E+04	2.44E+01	3.86E+01	1.93E+00	5.40E+01	6.56E-01	1.01E+06
	Note								
	Classification	Consumption	Energy	Energy	Energy	Material	Condition	Water system	Consumption
	Distribution	Parts assembly (kg)	Electricity (kWh)	Furnace LNG (kg)	Furnace urban gas (13A) (m3)	Industrial water (kg)	Freight by rail (kg · km)	Sewage processing (kg)	Electricity (kWh)
	Quantity	9.52E+01	3.42E+02	1.63E+01	1.66E+01	8.28E+01	5.60E+05	8.28E+01	6.19E+02
	Note								
	Classification	Consumption	Condition	Condition	Condition	Condition	Condition	Condition	Condition
	Distribution	Gasoline (kg)	Diesel truck: 20 ton (kg+km)	Diesel truck: 10 ton (kg∙km)	Freight by ship (kg∙km)	Freight by rail (kg · km)	Diesel truck: 20 ton (kg+km)	Diesel truck: 20 ton (kg+km)	Freight by ship (kg · km)
	Quantity	4.40E+00	1.09E+05	4.25E+02	2.03E+04	1.12E+04	2.18E+03	3.89E+03	1.14E+06
	Note								
	Classification	Condition	Condition						
	Distribution	Freight by rail (kg · km)	Diesel truck: 20 ton (kg·km)						
	Quantity	4.75E+05	9.21E+04						
	Note								

Note

4.2 Disposition/Recycle information on consumables and replacement parts

	Classification	Process	Process	Process	Process	Process	Process	Process	Process
	Distribution	Diesel truck: 4 ton (kg∙km)	Landfill: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	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	3.02E+03	1.68E+01	3.12E+01	1.06E+02	1.06E+02	6.84E+01	6.66E+01	8.82E-02
	Note								
es	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	3.70E+01	1.58E+00	2.77E-01	4.98E+01	7.93E-02	3.70E+01	1.58E+00	2.77E-01
	Note								
	Classification	Deduction	Process						
	Distribution	Polystyrene (kg)	Diesel truck: 10 ton (kg⋅km)						
	Quantity	4.98E+01	8.45E+04						
	Note								

Note

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

	Classification	Process	Process	Process	Process	Process	Deduction	Process	Process
	Distribution	Landfill: Industrial waste (kg)	Shredding (kg)	Incineration: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Diesel truck: 10 ton (kg∙km)	High density polyethylene (kg)	Sorting: Iron (by magnetic force) (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)
	Quantity	6.40E+00	1.03E+02	2.19E+00	1.02E+01	9.05E+04	1.00E+00	9.76E+01	5.14E+01
	Note								
	Classification	Process	Process	Process	Process	Process	Process	Deduction	Deduction
Scenario	Distribution	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)	Cold-Rolled steel plate (kg)
	Quantity	4.59E+01	2.15E+00	4.62E+01	1.03E+00	5.92E+00	3.90E+01	2.10E+00	4.62E+01
	Note								
	Classification	Deduction	Deduction	Deduction					
	Distribution	Aluminum plate (kg)	Copper plate (kg)	Polystyrene (kg)					
	Quantity	1.03E+00	5.92E+00	3.80E+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.