Form 1 (F-01-03)

Product Environmental Aspects Declaration

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

No.AD-13-E270
Date of publication
May/30/2013

imageRUNNER ADVANCE C9280 PRO Printer

http://canon.jp
Canon Inc.
TEL 03-3758-2111
Email eco@web.canon.co.jp

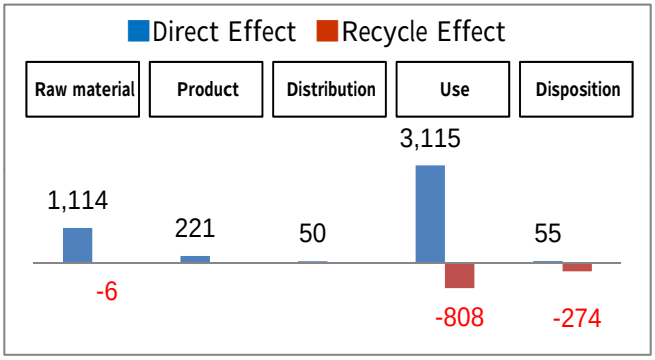
1) EP Printing 2) CL Print Speed: 70ppm 3)BW Print Speed: 80ppm (A4)
4) Paper size: A3 maximum 5) Standardized automatic duplexing

Environmental load of the Use stage is based on the supposition that the product prints 3,840,000 images for five years.
Environmental impact by copypaper is not included.

Consumption and discharge in a life cycle	All the stage sum totals
Global warming (CO_2 equivalent)	4.56t (3.47t)
Acidification (SO_2 equivalent)	6.75kg (4.78kg)
Energy resources (crude oil equivalent)	86.6GJ (66.8GJ)

※Figures in () indicated environmental impact including recycle effect . *Note3

Warming load CO_2 equivalent of each stage (kg)



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.

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 Environmental Standards: Japan Eco Mark , International Energy Star Program, EU RoHS.
This product and its main components are produced in our factories certified to ISO14001 management system standard.

PCR review was conducted by : PCR Deliberation Committee, Jan. 1st, 2008,
Name of reprentative: Youji Uchiyama, Univercity of Tsukuba, Graduate School
Independent verification of the declaration and data, according to ISO14025 □internal ■external
Third party verifier: Hiroyuki Uchida
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.

Form 2 (F-02B-03)

Product Environmental Information Data Sheet (PEIDS)

Document control no.	F-02B-03
Product vendor	Canon Inc.
EcoLeaf registration no.	AD-13-E270

Unit Function DB version	v 2.1
Characterization Factor DB version	v 2.1

PCR name	EP and IJ printer	Product type	imageRUNNER ADVANCE C9280 PRO Printer					
PCR ID	AD-04	Product weight (kg)	238	Package (kg)	52	Weight total (kg)	290	

In/Out items \ Life Cycle Stage					Unit	Production		Distribution	Use	Disposition	Recycle effect
						Raw material	Product				
Energy Consumption					MJ	1.86E+04	4.25E+03	6.78E+02	6.30E+04	1.71E+02	-1.98E+04
					Mcal	4.43E+03	1.02E+03	1.62E+02	1.50E+04	4.08E+01	-4.74E+03
Inventory analyses	Resource Consumption from the environment	Exhaustible resources	Energy	Coal	kg	2.00E+02	2.79E+01	1.58E-03	4.67E+02	8.22E-01	-2.42E+02
				Crude oil (as a fuel)	kg	1.53E+02	3.16E+01	1.48E+01	4.76E+02	2.08E+00	-1.26E+02
				Natural Gas	kg	3.39E+01	1.49E+01	2.29E-01	1.49E+02	4.30E-01	-2.88E+01
				Uranium ore	kg	3.02E-03	1.88E-03	1.07E-07	1.39E-02	5.56E-05	-7.35E-04
			Material	Crude oil (as an ingredients)	kg	5.24E+01	0	0	1.66E+02	0	-1.04E+02
				Iron ore	kg	1.69E+02	0	0	2.75E+02	0	-2.35E+02
				Copper ore	kg	2.19E+00	0	0	4.58E-01	0	-7.73E-01
				Bauxite	kg	5.91E+00	0	0	1.53E+01	0	-1.76E+01
				Nickel ore	kg	3.44E-01	0	0	1.76E-01	0	-3.08E-01
				Chromium ore	kg	5.24E-01	0	0	3.32E-01	0	-4.98E-01
				manganese ore	kg	9.53E-01	0	0	1.48E+00	0	-2.46E-01
				Plumbous ore	kg	1.78E-01	0	0	3.72E-02	0	-6.28E-02
				Tin ore	kg	0	0	0	0	0	0
				Zinc ore	kg	1.75E+00	0	0	3.66E-01	0	-6.17E-01
				Gold ore	kg	0	0	0	0	0	0
				Silver ore	kg	0	0	0	0	0	0
				Silica ore	kg	4.52E+00	0	0	3.66E+00	0	-1.89E+00
				Rock salt	kg	4.04E+01	0	0	3.14E+01	9.25E-02	-4.37E+01
				Limestone	kg	3.58E+01	0	0	5.65E+01	7.84E-01	-3.98E+01
				Natural soda ash	kg	2.15E-01	0	0	3.35E-02	0	-1.85E-02
		Renewable resources		Wood	kg	6.78E+01	0	0	1.36E+02	0	-1.07E+02
				Water	kg	7.78E+04	2.12E+04	1.20E+00	2.57E+05	6.71E+02	-5.15E+04
	Emission/Discharge to the environment	to Atmosphere		CO_2	kg	1.09E+03	2.19E+02	4.82E+01	3.06E+03	5.54E+01	-1.06E+03
				SOx	kg	7.62E-01	1.65E-01	2.97E-02	2.30E+00	4.71E-02	-9.89E-01
				NOx	kg	1.20E+00	1.35E-01	2.32E-01	3.23E+00	1.29E-01	-1.40E+00
				$N2_O$	kg	8.13E-02	5.81E-03	8.00E-03	2.00E-01	2.38E-04	-9.25E-02
				CH_4	kg	7.96E-03	5.04E-03	2.87E-07	3.69E-02	1.49E-04	-1.65E-03
				CO	kg	1.82E-01	3.25E-02	6.26E-02	5.84E-01	3.14E-02	-2.44E-01
				NMVOC	kg	1.56E-02	9.87E-03	5.62E-07	7.23E-02	2.91E-04	-3.23E-03
				CxHy	kg	4.04E-02	1.07E-03	6.97E-03	8.56E-02	1.08E-03	-4.59E-02
				dust	kg	1.48E-01	7.09E-03	2.23E-02	3.19E-01	8.08E-03	-1.86E-01
		to Water system		BOD	kg	-	-	-	-	-	-
				COD	kg	-	-	-	-	-	-
				N total	kg	-	-	-	-	-	-
				P total	kg	-	-	-	-	-	-
				SS	kg	-	-	-	-	-	-
		to Soil system		Unspecified solid waste	kg	8.33E+00	0	0	2.49E+01	1.17E+02	-1.51E+01
				Slag	kg	5.71E+01	0	0	8.43E+01	0	-7.18E+01
				Sludge	kg	1.27E+01	0	0	3.27E+01	0	-3.78E+01
				Low emission radioactive waste	kg	2.11E-03	1.32E-03	7.50E-08	9.71E-03	3.88E-05	-5.14E-04
Impact assessment	by Resource Consumption	Exhaustible resources		Energy resources (crude oil equivalent)	kg	3.47E+02	8.29E+01	1.51E+01	1.07E+03	3.58E+00	-3.22E+02
				Mineral resources (Iron ore equivalent)	kg	1.16E+03	0	0	7.14E+02	0	-8.21E+02
	by Emission/Discharge to the environment	to Atmosphere		Global warming (CO_2 equivalent)	kg	1.11E+03	2.21E+02	5.03E+01	3.12E+03	5.55E+01	-1.09E+03
				Acidification (SO_2 equivalent)	kg	1.60E+00	2.60E-01	1.92E-01	4.56E+00	1.37E-01	-1.97E+00
		to Water system									
		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. 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]

1. "Raw material" in Production:

This product uses carrier (electrographic developer) in the image development process.

2. "Product" in Producton:

3. Distribution:

Distance of domestic transportation is regarded as 100km according to PCR(AD-04).

4. Use:

- Based on the PCR, energy consumption and print volume are calculated from TEC method.
  2,920,000 sheets are printed during the use period of 5 years.
- Environmental burden of "producing" and "disposal and recycling" of consumable goods are allocated to this stage.
- The coverage on the paper is 5%(A4) by using standard chart.
- Distance of domestic transportation of consumable goods is regarded as 100km according to PCR.
- Color print ratio is equal to black-and-white print ratio.

5. Disposal and recycle:

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.

Form3 (F-03-03)

Product data sheet

(Input data and parameters for LCA)

Document control no.	F-03-03
Product vendor	Canon Inc.
EcoLEaf registration no.	AD-13-E270

PCR name	EP and IJ printer (PCR-ID:AD-04)		Product type	imageRUNNER ADVANCE C9280 PRO Printer			
LCA/LCIA in units of:	1	Product weight (kg)	238	Package (kg)	52	Weight total (kg)	290

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

	Breakdown 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)
Product	Ordinary steel	1.63E+02	Glass	5.52E-01	Press molding:Iron	1.63E+02	Parts assembly	2.35E+02
	Stainless steel	2.16E+00	Paper	2.17E+01	Press molding:Nonferrous metal	7.32E+00		
	Aluminium	5.59E+00	PCB	6.79E+00	Injection molding	6.42E+01		
	Other metals	4.15E+00	Wood	2.14E+01				
	Thermoplastic resin	6.01E+01			Glass molding	5.22E-01		
	Thermosetting resin	1.00E+00	Recycled plastic	3.90E+00				
	Rubber	4.10E-01						
	Subtotal	2.36E+02	Subtotal	5.44E+01				
	Total			2.90E+02	Subtotal	2.35E+02	Subtotal	2.35E+02

[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 SO2, NO2 equivalent.

Consumption	Classification	Energy	Energy	Energy	Material	Material	Material		
	Distribution	Electricity(kWh)	Kerosene(kg)	Furnace urban gas(m^3)	Industrial water(kg)	Clean water(kg)	Groundwater(kg)		
	Quantity	1.87E+02	0.00E+00	1.27E+00	8.00E+01	4.21E-01	3.86E+01		
	Note								
Emission/ Discharge	Classification								
	Distribution								
	Quantity								
	Note								

[Note]

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

Distribution	Means of transportation	Diesel truck:4ton	Diesel truck:15ton	Freight by ship					
	Conditions	Load (kg・km)	Load (kg・km)	Load (kg・km)					
	Quantity	3.33E+04	9.33E+04	7.38E+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

Product	Classification	Energy	Energy	Energy	Material	Material	Material		
	Distribution	Electricity(kWh)	Kerosene(kg)	Furnace urban gas(m^3)	Industrial water(kg)	Clean water(kg)	Groundwater(kg)		
	Quantity	2.72E+03	0.00E+00	1.27E+01	8.00E+02	4.21E+00	1.30E+03		
	Note								
	Classification	Material	Material	Material	Material				
	Distribution	Ordinary steel(kg)	Stainless steel(kg)	Aluminium(kg)	Other metal(kg)				
	Quantity	2.65E+02	1.08E+00	1.44E+01	9.07E-01				
	Note								
	Classification	Material	Material	Material	Material	Material	Material	Material	
	Distribution	Glass(kg)	Thermoplastic resin(kg)	Thermosetting resin(kg)	Wood(kg)	Paper(kg)	Rubber(kg)	PCB(kg)	
	Quantity	3.59E-03	2.14E+02	1.18E-02	6.62E+00	6.10E+01	4.80E-03	1.34E+00	
	Note								
	Classification	Process	Process	Process	Assembly	Distribution	Distribution	Distribution	Distribution
	Distribution	Press molding:Iron(kg)	Press molding:Nonferrous metal(kg)	Injection molding(kg)	Parts assembly(kg)	Diesel truck:4ton(kg・km)	Diesel truck:10ton(kg・km)	Diesel truck:15ton(kg・km)	Freight by ship (kg・km)
	Quantity	1.64E+02	1.47E+01	1.22E+02	2.91E+02	2.11E+04	3.53E+04	5.90E+04	5.36E+05
	Note								

[Note]

4.2 Disposition/Recycle information on consumables and replacement parts

Consumables	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment	Energy	Distribution
	Distribution	Shredding(kg)	Incineration to landfill (as ash)(kg)	Incineration: Industrial waste (kg)	Biomass incineration(kg)	Landfill:general waste(kg)	Landfill:Industrial waste(kg)	Electricity (kWh)	Diesel truck:4ton(kg・km)
	Quantity	4.15E+01	3.51E+01	1.58E+01	3.63E+01	3.01E+00	2.22E+00	8.09E+00	6.30E+03
	Note								
	Classification	Distribution							
	Distribution	Diesel truck:10ton(kg・km)							
	Quantity	3.31E+04							
	Note								

[Note]

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

Scenario	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment		
	Distribution	Shredding(kg)	Incineration to landfill (as ash)(kg)	Incineration: Industrial waste (kg)	Landfill:general waste(kg)	Biomass incineration(kg)	Landfill:Industrial waste(kg)		
	Quantity	1.65E+02	3.46E+01	6.62E-01	1.10E+02	2.38E+01	2.20E+00		
	Note								
	Classification					Energy	Distribution	Distribution	
	Distribution					Electricity (kWh)	Diesel truck:4ton(kg・km)	Diesel truck:10ton(kg・km)	
	Quantity					2.73E+00	1.42E+04	2.26E+04	
	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.