Product Environmental Aspects Declaration

製品環境情報 http://www.jemai.or.jp

No. AD-14-E534 Date of publication 12/12/2014

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



http://www.dell.com

Please direct any inquiries or comments to Regulatory_Compliance@Dell.com



Total of 437,400 sheets on the assumption of five years usage. Environmental impact by copypaper is not included.

Dell[™] Colour Printer - C2660dn

Marking technologies:

Electrophotographic Printer (EP)

Printing speed:

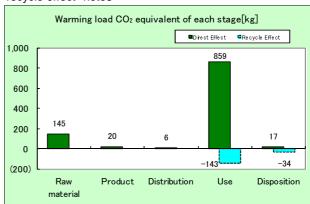
27 prints-per-minute(A4, B/W), 27 prints-per-minute(A4, color)

Maximum copy paper: A4

Duplex (standard)

Buplox (otaliaala)	
Consumption and discharge in a life cycle	All the stage sum totals
Global Warming (CO ₂ equivalent)	1,048 kg
Clobal Walling (CO2 equivalent)	(871.4 kg)
Acidification (SO ₂ equivalent)	1.89 kg
Acidineation (602 equivalent)	(1.485 kg)
Energy resources	20,818 MJ
(crude oil equivalent)	(16,818 MJ)

※ Figures in () indicated environmental impact including recycle effect *note3



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 PSC: Product Specification Criteria. Visit EcoLeaf website under JEMAI homepage at http://www.jemai.or.jp/ecoleaf_e/ 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 Environmental Standards

- RAL-UZ 171 (Blue Angel)
- International Energy Star Program

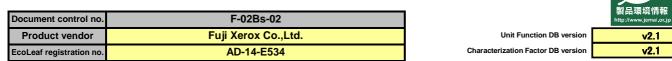
PCR review was conducted by: PCR Deliberation Committee, January 01, 2008, Name of reprentative: Youji Uchiyama, University of Tsukuba, Graduate School

Independent verification of the declaration and data, according to ISO14025:2006 □internal ■external Third party verifier: Keiichi Aramaki

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.

Product Environmental Information Data Sheet (PEIDS)



PCR name	EP and IJ print	er	Product type		Dell Colour Pr	inter - C2660dn	
PCR code	AD-04	Product weight (kg)	25.6	Package (kg)	4.8	Weight total (kg)	30.4

				Life Cycle Stage		Produ	uction				Recycle
In/Ou	ut iter	ns			Unit	Raw material	Product	Distribution	Use	Disposition	Effect
					MJ	2.74E+03	4.02E+02	9.57E+01	1.75E+04	9.53E+01	-4.00E+03
		Er	nergy (Consumption	Mcal	6.54E+02	9.59E+01	2.28E+01	4.18E+03	2.28E+01	-9.55E+02
			e s	Coal	kg	1.80E+01	2.61E+00	3.88E-02	8.22E+01	5.75E-01	-1.66E+01
			onic	Crude oil (for fuel)	kg	2.65E+01	3.00E+00	1.78E+00	1.52E+02	1.09E+00	-4.09E+01
			.y re	LNG	kg	5.53E+00	1.51E+00	4.60E-02	4.36E+01	2.82E-01	-3.78E+00
			nerg	Uranium content of an ore	kg	4.43E-04	1.77E-04	2.62E-06	3.79E-03	3.28E-05	-1.43E-04
	_			Crude oil (for material)	kg	1.16E+01	0	2.41E-01	5.66E+01	0	-3.02E+01
	ţi			Iron content of an ore	kg	9.13E+00	0	0	6.74E+00	0	-8.72E+00
	du	resources		Cu content of an ore	kg	5.27E-01	0	0	1.34E-01	0	-2.55E-01
	ı ı	l on l		Al content of an ore	kg	1.08E+00	0	0	6.57E+00	0	-3.03E+00
	Suc.	SO		Ni content of an ore	kg	3.48E-01	0	0	1.08E+00	0	-1.77E-04
	ŏ	<u>ë</u>	resources	C content of an ore	kg	4.74E-01	0	0	1.46E+00	0	-3.24E-03
	Se	<u>e</u>	ž	Mn content of an ore	kg	9.97E-02	0	0	2.30E-01	1.81E-02	-4.62E-02
	5	∺	SO	Pb content of an ore	kg	2.94E-02	0	0	1.09E-02	0	-2.07E-02
	SSO	SUS		Sn content of an ore	kg	0	0	0	0	0	0
	Impact by Resource Consumption	Exhaustible	Mineral	Zn content of an ore	kg	2.89E-01	0	0	1.07E-01	0	-2.04E-01
	>	ш	ne	Au content of an ore	kg	0	0	0	0	0	0
	늄		≅	Ag content of an ore	kg	0	0	0	0	0	0
(n	Sac			Silica Sand	kg	6.45E-01	0	0	1.82E-01	2.17E-02	-1.75E-01
se	Ę			Halite	kg	5.01E+00	0	0	2.12E+01	7.49E-03	-3.00E-01
ا چ	_			Limestone	kg	2.44E+00	0	0	9.49E+00	2.53E-01	-1.72E+00
ans.				Natural soda ash	kg	5.09E-02	0	0	5.87E-03	0	0
nventory anaiyses			i	Wood	kg	7.99E+00	0	6.80E-01	5.76E+01	0	-2.62E+01
tor		a a a a a a a a a a a a a a a a a a a	ou se	Water		1.23E+04	2.27E+03	9.38E+01	6.55E+04	4.72E+02	-9.16E+03
en			Į		kg	1.42E+02	2.03E+01			1.65E+01	-9.10E+03 -1.70E+02
Š	en			CO2	kg	1.42E+02 1.26E-01	1.55E-02	5.90E+00 3.09E-03	8.37E+02 7.66E-01	1.65E+01 1.12E-02	
	E		<u>o</u>	Sox	kg	1.98E-01	1.23E-02	2.13E-02	1.13E+00	2.33E-02	-1.78E-01 -3.24E-01
	iro		þe	Nox N2O	kg		2.34E-04	9.27E-04	7.95E-02	3.57E-04	-3.24E-01 -2.36E-02
	Į,		Sp	CH4	kg	1.40E-02	4.72E-04	7.02E-06	9.99E-03	8.77E-05	-3.28E-04
	je (Atmosphere	CO CO	kg	1.16E-03	3.00E-03	4.43E-03	9.99E-03 1.73E-01	4.53E-03	-3.52E-02
	± 0		Ŧ.	NMVOC	kg	2.52E-02 2.28E-03	9.25E-04	4.43E-03 1.37E-05	1.73E-01 1.96E-02	4.53E-03 1.72E-04	-3.52E-02 -6.42E-04
	e tc		9		kg						
	arg			CxHy Dust	kg	6.38E-03 2.18E-02	5.04E-05 6.64E-04	6.64E-04 2.01E-03	2.95E-02 9.85E-02	2.18E-04 1.38E-03	-1.10E-02 -3.47E-02
	Ğ	-	_	BOD	kg	Z.10E-UZ	0.04E-U4				-3.47 ⊑-02
	Dis	sten	mair	COD	kg kg	-		-	-	-	-
	Impact by Emission/Discharge to the environment	to Water system	Water domain	N total	kg	-	<u> </u>	-	-	-	•
	SSic	ater	ater	P total		-		-	-	-	-
	m.	≥	>	SS	kg	-	-		-	-	•
	_ <u>_</u>	ţ	7	Unspecified Solid Waste	kg	1.92E+00	9.32E-03	2.36E-02	3.09E+01	9.58E+00	-4.66E+00
	t b		Soil systen	Slag	kg	3.67E+00	9.32E-03 0	0	3.20E+00	3.42E-01	-4.86E+00 -3.30E+00
	ac		il S)	Sludge	kg	2.16E+00	0	0	1.41E+01	0	-6.50E+00
	m		o Sc	Low level radio-active waste	kg ka	3.10E+00	1.23E-04	1.83E-06	2.64E-03	2.30E-05	-1.00E-04
± ±			2	Energy resources (crude oil equivalent)		4.83E+01	7.94E+00	1.88E+00	2.89E+02	2.06E+00	-5.73E+01
assessment	by Res		4	Mineral resources (fron ore equivalent)	kg kg	4.21E+02	7.94E+00 0	1.32E-01	9.41E+02	2.75E-01	-1.09E+02
ssn	7.		Φ 2	Global Warming (CO2 equivalent)	kg kg	1.45E+02	2.04E+01	6.15E+00	8.59E+02	1.66E+01	-1.76E+02
ses	mironna		Atmosphere	Acidification (SO2 equivalent)		2.64E-01	2.04E+01 2.41E-02	1.80E-02	1.56E+00	2.75E-02	-4.05E-01
as	ange to e		lsou	Ozone Depletion (CFC-11 equivalent)	kg	0	0	0	0	0	-4.05E-01
act	1/Disch		o Atm		kg	1.24E-02	6.83E-04	1.09E-03	6.03E-02	7.27E-04	-1.88E-02
Impact	Emission		=	Photochemical Oxidant Eutrophication (Phosphate equivalent)	kg ka	0	0.03E-04	0	0.03E-02	1.21 = 04	-1.00E-02
	È		1	common rules	ĸg	J	J	J	J	J	U

[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).

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

 B. "Product" in "production" includes environmental impacts of processing of the parts (injection, blow-, press- and glass-molding).
- C. Regarding the basis and the basic units for calculations during distribution stages
- D. Regarding the basis and the basic units for calculations during use and consumption 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).
- F. The impacts of material production of recycled materials are included in the values with minus as a recycling effect.
- G. 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-03s-02
Product vendor	Fuji Xerox Co.,Ltd.
EcoLEaf registration no.	AD-14-E534



PCR name	EP and IJ printer (PCR-ID : AD-04)	Product type	Dell Colour Printer - C2660dn				
LCA/LCIA in units of:	1 product	Product weight (kg)	25.6	Package (kg)	4.8	Weight total (kg)	30.4

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

	Bro	eakdown of p	rimary materials		Math breakdown of parts, whi	ch need to apply	Processing / Assembly Base Ur	nits (Parts B, C)
	Material name	Weight (kg)	Material name	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)
	Normal steel (kg)	7.23E+00	paper (kg)	3.74E+00	Press molding:Iron (kg)	9.27E+00	Parts assembly (kg)	2.32E+01
	Stainless steel (kg)	2.20E+00	semiconductor substrates (kg)	1.06E+00	Press molding:Nonferrous metal (kg)	1.51E+00		
	aluminum (kg)	9.54E-01	medium-sized motor (kg)	8.34E-01	Injection molding (kg)	1.33E+01		
quet	other metals (kg)	7.18E-01			Glass molding (kg)	2.94E-01		
rodi	thermoplastic resins (kg)	1.19E+01						
	thermosetting resins (kg)	1.17E+00						
	rubber (kg)	2.77E-01						
	glass (kg)	2.94E-01						
	Subtotal	2.48E+01	Subtotal	5.64E+00				
		Total		3.04E+01	Subtotal	2.43E+01	Subtotal	2.32E+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 SO₂, NO₂ equivalent.

ion	Classification	Energy	Material	Energy	Energy	Material		
mption	Distribution	Electricity (kWh)	Clean water (kg)	LPG (kg)	Urban gas (13A) (m3)	Industrial water (kg)		
	Quantity	1.51E+01	7.00E+01	3.09E-02	2.62E-01	2.17E+02		
Cons	Note							
arge	Classification							
Disch	Distribution							
/uois	Quantity							
Emis	Note							

Note

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

	Means of	Diesel truck:	Diesel truck:	Diesel truck:	Diesel truck:	Freight by ship	Freight by ship	Freight by ship	Freight by ship
	transportation	10 ton (kg·km)	10 ton (kg·km)	10 ton (kg·km)	10 ton (kg·km)	(kg·km)	(kg·km)	(kg·km)	(kg·km)
	Conditions	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)
	Quantity	3.10E+01	7.00E+01	6.20E+01	3.50E+03	3.10E+01	2.55E+03	1.00E+02	7.89E+04
	Note								
	Means of transportation	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Diesel truck: 10 ton (kg·km)	Consumption	Consumption	Consumption	Consumption
Distribution	Conditions	Mass(kg)	Distance (km)	Loading Ratio(%w)	Load(kg·km)	Corrugated cardboard (kg)	Cardboard (kg)	High density polyethylene (kg)	Low density polyethylene (kg)
量	Quantity	3.10E+01	1.00E+02	6.20E+01	5.00E+03	9.91E-02	2.05E-01	1.68E-01	7.43E-02
Ë	Note								
	Means of transportation	Process	Process						
	Conditions	Recycle: to corrugated cardboard (kg)	Recycle: to Thermoplastic pellet (kg)						
	Quantity	3.04E-01	2.42E-01						
	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

4.1 Pro	duct and ac	cessories subje	ect to this analys	is					
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Electroplated steel Plate (kg)	Stainless steel plate (kg)	Electricity (kWh)	Press molding: Iron (kg)	Copper plate (kg)	Polypropylene (kg)	PET (kg)	Polycarbonate (kg)
	Quantity	1.98E+00	6.80E+00	7.61E+02	8.78E+00	3.35E-01	8.23E-01	2.38E+00	1.36E-01
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	POM (polyacetal) (kg)	ABS (kg)	Assembled circuit board (kg)	Unsaturated polyester	Phenol resin (PF) (kg)	Parts assembly (kg)	Furnace LNG (kg)	PA66 (Polyamide 66)
	Quantity	3.08E+00	3.37E+01	2.37E-01	1.71E+01	1.64E-01	6.16E+01	4.49E+00	1.79E-01
#	Note								
Product	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
Pro	Distribution	Aluminum plate (kg)	Press molding: Nonferrous metal (kg)	Polystyrene (kg)	Furnace urban gas (13A) (m3)	Industrial water (kg)	Polycarbonate- ABS (70/30) (kg)	Cold-Rolled steel plate (kg)	Nitrile-butadiene rubber (NBR) (kg)
	Quantity	6.21E+00	6.55E+00	1.55E+00	1.83E+00	2.77E+03	3.68E-02	2.38E+00	5.05E-01
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Corrugated cardboard (kg)	Expandable hard polyurethane (Hard) (kg)	Low density polyethylene (kg)	Injection molding (kg)	Paper (Western style) (kg)	Clean water (kg)	Diesel truck: 10 ton (kg·km)	Freight by ship (kg·km)
	Quantity	2.70E+01	7.99E+00	9.90E-01	5.16E+01	1.60E-02	2.56E+02	2.52E+04	1.50E+05
	Note						•		

Note

4.2 Disposition/Recycle information on consumables and replacement parts

Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Deduction	Consumption
Distribution	Diesel truck: 4 ton (kg·km)	Shredding (kg)	Sorting: Iron (by magnetic force) (kg)	Incineration: Biomass (paper) (kg)	Incineration to landfill (as ash) (kg)	Landfill: General waste (kg)	Corrugated cardboard (kg)	Recycle: to corrugated cardboard (kg)
Quantity	1.10E+04	1.03E+02	1.03E+02	1.62E+01	4.12E+01	1.08E+01	1.08E+01	1.08E+01
Note								

	Classification	Deduction	Deduction	Deduction	Deduction	Consumption	Consumption	Consumption	Consumption
onsumables	Distribution	Cold-Rolled steel plate (kg)	Aluminum plate (kg)	Copper plate (kg)	ABS (kg)	Recycle: to cold-rolled steel (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Recycle: to Aluminum plate (kg)	Recycle: to copper plate (kg)
Si Si	Quantity	4.47E+00	2.49E+00	1.81E-01	2.73E+01	4.47E+00	3.02E+01	2.49E+00	1.81E-01
Ö	Note								
	Classification	Consumption	Consumption	Consumption	Consumption				
	Distribution	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Thermoplastic pellet (kg)	Incineration: Industrial waste (kg)	Landfill: Industrial waste (kg)				
	Quantity	2.75E+01	2.73E+01	2.05E-01	4.70E-02				
	Note								

Note

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

	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Deduction	Consumption
	Distribution	Diesel truck: 4 ton (kg·km)	Shredding (kg)	Sorting: Iron (by magnetic force) (kg)	Incineration: Biomass (paper) (kg)	Incineration to landfill (as ash) (kg)	Landfill: General waste (kg)	Corrugated cardboard (kg)	Recycle: to corrugated cardboard (kg)
	Quantity	2.94E+03	2.89E+01	2.89E+01	2.25E+00	8.03E+00	7.98E+00	1.50E+00	1.50E+00
	Note								
	Classification	Deduction	Deduction	Deduction	Deduction	Consumption	Consumption	Consumption	Consumption
Scenario	Distribution	Cold-Rolled steel plate (kg)	Aluminum plate (kg)	Copper plate (kg)	ABS (kg)	Recycle: to cold-rolled steel (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Recycle: to Aluminum plate (kg)	Recycle: to copper plate (kg)
တိ	Quantity	3.94E+00	3.81E-01	6.65E-01	5.24E+00	3.94E+00	6.73E+00	3.81E-01	6.65E-01
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption				
	Distribution	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Thermoplastic pellet (kg)	Incineration: Industrial waste (kg)	Landfill: Industrial waste (kg)				
	Quantity	5.68E+00	5.24E+00	1.12E-01	3.29E-01				
	Note	·							·

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 common parts. 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.

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 437,400 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 maintenance 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.

G. This declaration was produced using Product Category Rule intended for a product model sold inthe Japanese market and using the qualitative and quantitative data collected in Japan.