Form 1（F-01s-02）

Product Environmental Aspects Declaration

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

No. AD-14-E416
Date of publication
Aug. 20/2014

EPSON
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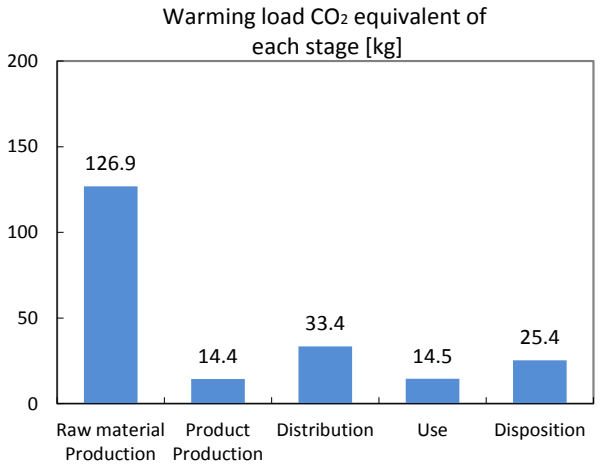
http://www.epson.com/

WorkForce Pro WF-8090

■Color Inkjet Printer
■Maxmum Paper Size (Standard cassette): A3
■Automatic Duplex Printing

Contact us:
Seiko Epson Corporation
http://www.epson.jp/contact/

Consumption and discharge in a life cycle	All the stage sum totals
Global Warming (CO_2 equivalent)	214.6 kg
Acidification (SO_2 equivalent)	0.35 kg
Energy resources (crude oil equivalent)	3,497 MJ



Environmental Impacts are calculated as follows
・Use stage : Printing 7,200 sheets in 3 years
*Environmental impacts by printing sheets are not included in above data
・Distribution stage : Range from the manufacturing factory to North American market

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

[Supplemental environmental information]

●This product and main compornents are produced in our ISO 14001 certified factories.
●Conformed to International ENERGY STAR® program, EU RoHS.

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 ISO14025:2006 ☐internal ■external
Third party verifier: Eikyu Watanabe

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-A(F-02As-02)

Product Environmental Information Data Sheet (PEIDS)

Document control no.	F-02As-02
Product vendor	Seiko Epson Corporation
EcoLeaf registration no.	AD-14-E416

Unit Function DB version	v2.1
Characterization Factor DB version	v2.1

PCR name	EP and IJP		Product type	WF-8090			
PCR code	AD-04	Product weight (kg)	25.81	Package (kg)	6.23	Weight total (kg)	32.04

In/Out items \ Life Cycle Stage					Unit	Production		Distribution	Use	Disposition	Total
						Raw material	Product				
Energy Consumption					MJ	2.49E+03	2.57E+02	4.53E+02	2.65E+02	2.99E+01	3.50E+03
					Mcal	5.95E+02	6.13E+01	1.08E+02	6.33E+01	7.14E+00	8.35E+02
Inventory analyses	Impact by Resource Consumption	Exhaustible resources	Energy resources		Coal	kg	1.55E+01	1.80E+00	1.60E-01	8.80E-01	1.76E-01	1.85E+01
					Crude oil (for fuel)	kg	2.41E+01	2.14E+00	9.61E+00	2.50E+00	3.26E-01	3.87E+01
					LNG	kg	3.35E+00	9.02E-01	2.23E-01	4.86E-01	9.07E-02	5.05E+00
					Uranium content of an ore	kg	3.52E-04	1.22E-04	1.05E-05	5.96E-05	1.19E-05	5.56E-04
			Mineral resources		Crude oil (for material)	kg	1.36E+01	0	0	1.03E+00	0	1.47E+01
					Iron content of an ore	kg	1.25E+01	0	0	0	0	1.25E+01
					Cu content of an ore	kg	3.16E-01	0	0	4.14E-04	0	3.17E-01
					Al content of an ore	kg	9.79E-02	0	0	0	0	9.79E-02
					Ni content of an ore	kg	1.49E-02	0	0	0	0	1.49E-02
					C content of an ore	kg	2.42E-02	0	0	0	0	2.42E-02
					Mn content of an ore	kg	6.49E-02	0	0	0	0	6.49E-02
					Pb content of an ore	kg	1.49E-02	0	0	3.36E-05	0	1.50E-02
					Sn content of an ore	kg	-	-	-	-	-	
					Zn content of an ore	kg	1.47E-01	0	0	3.31E-04	0	1.47E-01
					Au content of an ore	kg	-	-	-	-	-	
					Ag content of an ore	kg	-	-	-	-	-	
					Silica Sand	kg	4.10E-01	0	0	7.82E-04	0	4.11E-01
					Halite	kg	4.24E-01	1.10E-07	0	1.45E-03	1.30E-02	4.38E-01
					Limestone	kg	2.67E+00	0	0	2.25E-02	2.34E-01	2.93E+00
					Natural soda ash	kg	2.46E-02	0	0	7.44E-05	0	2.46E-02
					Wood	kg	8.93E+00	0	0	1.32E+00	0	1.02E+01
					Water	kg	8.63E+03	1.36E+03	1.17E+02	8.05E+02	1.48E+02	1.11E+04
	Impact by Emission/Discharge to the environment	to Atmosphere			CO2	kg	1.24E+02	1.43E+01	3.19E+01	1.43E+01	2.54E+01	2.10E+02
					Sox	kg	6.67E-02	1.08E-02	1.76E-02	8.62E-03	1.33E-02	1.17E-01
					Nox	kg	1.59E-01	9.52E-03	1.12E-01	2.24E-02	2.91E-02	3.32E-01
					N2O	kg	1.17E-02	2.14E-04	5.66E-03	9.81E-04	4.12E-05	1.86E-02
					CH4	kg	9.41E-04	3.25E-04	2.80E-05	1.59E-04	3.18E-05	1.49E-03
					CO	kg	1.48E-02	2.22E-03	2.24E-02	3.66E-03	5.50E-03	4.85E-02
					NMVOC	kg	1.84E-03	6.37E-04	5.48E-05	3.12E-04	6.24E-05	2.90E-03
					CxHy	kg	5.84E-03	6.96E-05	3.85E-03	5.49E-04	1.15E-04	1.04E-02
					Dust	kg	1.80E-02	5.60E-04	1.15E-02	1.89E-03	1.68E-03	3.36E-02
		to Water system	to Water domain		BOD	kg	-	-	-	-	-	
					COD	kg	-	-	-	-	-	
					N total	kg	-	-	-	-	-	
					P total	kg	-	-	-	-	-	
					SS	kg	-	-	-	-	-	
		to Soil system			Unspecified Solid Waste	kg	1.60E+00	5.64E-07	0	2.81E-01	1.63E+01	1.81E+01
					Slag	kg	4.06E+00	0	0	1.10E-03	0	4.06E+00
					Sludge	kg	8.42E-02	0	0	0	0	8.42E-02
					Low level radio-active waste	kg	2.47E-04	8.50E-05	7.31E-06	4.15E-05	8.31E-06	3.89E-04
Impact assessment	By Resource Consumption	Exhaustible resources			Energy resources (crude oil equivalent)	kg	4.10E+01	5.37E+00	1.01E+01	4.14E+00	6.45E-01	6.12E+01
					Mineral resources (Iron ore equivalent)	kg	1.04E+02	0	0	6.90E-01	0	1.05E+02
	By Emission Discharge to environment	to Atmosphere			Global Warming (CO2 equivalent)	kg	1.27E+02	1.44E+01	3.34E+01	1.45E+01	2.54E+01	2.15E+02
					Acidification (SO2 equivalent)	kg	1.78E-01	1.75E-02	9.57E-02	2.43E-02	3.37E-02	3.50E-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 of consumables/maintenance goods (e.g. replacement parts).

D. "Disposition" stage is intended for environmental impacts by product disposition.

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 " ー " if calculation nor estimation can not be done, in order to differentiate to indicate "zero".

D. Row total of the data is automatically calculated, excluding a row includes " ー " item. Row total of such is presented as a blank (no data).
(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. Product weight does not include appended ink cartridges and other appended goods.
2. Production stage includes main product's manufacturing impacts and manufacturing/ transport impacts for a print head and appended ink cartridges.
3. Distribution stage includes transport impacts range from manufacturing factory to North American market, because this product is for oversea model.
4. Use stage includes main product's electric consumption and material/production/transport/disposal impacts for consumable ink cartridges.
5. Disposal stage is calculated as following condition:
-Collection rate of products is 0%.
-All products are crushed as general waste.
-Combustible materials are incinerated and non-combustible materials landfilled.
6. 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.

Form 3(F-03s-02)

Product data sheet

(Input data and parameters for LCA)

Document control no.	F-03s-02
Product vendor	Seiko Epson Corporation
EcoLEaf registration no.	AD-14-E416

PCR name	EP and IJP(PCR No.:AD-04)	Product type	WF-8090				
LCA/LCIA in units of:	1unit	Product weight (kg)	25.81	Package (kg)	6.23	Weight total (kg)	32.04

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	Synthetic Resin	1.43E+01			Press molding:Iron (kg)	1.14E+01	Parts assembly (kg)	2.00E+00
	Metal	1.16E+01			Press molding:Nonferrous metal (kg)	3.44E-01		
	Common Parts	1.66E+00			Injection molding (kg)	1.42E+01		
	Water	2.32E-01						
	Paper and Wood	4.19E+00						
	Inorganic chemistry	0.00E+00						
	Rubber	6.40E-03						
	Subtotal	3.20E+01	Subtotal					
	Total			3.20E+01	Subtotal	2.60E+01	Subtotal	2.00E+00

Note Plastic/metal materials which do not have the base unit are divided in proportion according to the mass ratio of the materials which have the base unit.

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_2, NO_2 equivalent.

Consumption	Classification	Energy	Material	Energy	Energy	Energy	Material	Condition	Condition
	Distribution	Electricity (kWh)	Clean water (kg)	Furnace urban gas (13A) (m3)	Kerosene as fuel (kg)	Heavy oil as fuel (kg)	Industrial water (kg)	Diesel truck: 10 ton (kg.km)	Freight by ship (kg.km)
	Quantity	3.06E+00	6.98E-03	7.25E-04	1.54E-02	3.63E-03	1.19E-02	7.48E+01	6.05E+02
	Note								
	Classification	Condition	Condition	Condition	Condition	Condition	Condition	Condition	
	Distribution	Diesel truck: 10 ton (kg.km)	Diesel truck: 10 ton (kg.km)	Freight by ship (kg.km)	Diesel truck: 10 ton (kg.km)	Diesel truck: 10 ton (kg.km)	Freight by ship (kg.km)	Diesel truck: 10 ton (kg.km)	
	Quantity	1.87E+01	5.28E+01	3.93E+03	3.17E+01	9.11E+01	6.82E+02	5.47E+00	
	Note								
Emission/Discharge	Classification	Water system							
	Distribution	Sewage processing (kg)							
	Quantity	1.89E-02							
	Note								

Note

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

Distribution	Means of transportation	Diesel truck: 20 ton (kg.km)	Diesel truck: 20 ton (kg.km)	Diesel truck: 20 ton (kg.km)	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)
	Quantity	3.20E+01	3.00E+01	6.20E+01	1.55E+03	3.20E+01	1.64E+04	1.00E+02	5.27E+05
	Note								
	Means of transportation	Freight by rail (kg.km)	Freight by rail (kg.km)	Freight by rail (kg.km)	Freight by rail (kg.km)	Diesel truck: 20 ton (kg.km)	Diesel truck: 20 ton (kg.km)	Diesel truck: 20 ton (kg.km)	Diesel truck: 20 ton (kg.km)
	Conditions	Mass (kg)	Distance (km)	Loading Ratio (%w)	Load (kg.km)	Mass (kg)	Distance (km)	Loading Ratio (%w)	Load (kg.km)
	Quantity	3.20E+01	3.30E+03	1.00E+02	1.06E+05	3.20E+01	1.00E+03	6.20E+01	5.17E+04
	Note								

Note Transportation impacts includes range from manufacturing factory to North American market.
Loading rate of truck is 62%.

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	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	High density polyethylene (kg)	Polystyrene (kg)	PET (kg)	Corrugated cardboard (kg)	Cardboard (kg)	Assembled circuit board (kg)	Clean water (kg)	Injection molding (kg)
	Quantity	5.26E-02	9.41E-01	6.03E-02	1.51E-01	4.38E-01	3.00E-03	6.08E-01	1.05E+00
	Note								
	Classification	Energy	Energy	Energy	Material	Material	Water system	Consumption	Condition
	Distribution	Electricity (kWh)	Furnace urban gas (13A) (m3)	Heavy oil as fuel (kg)	Clean water (kg)	Industrial water (kg)	Sewage processing (kg)	Electricity (kWh)	Diesel truck: 10 ton (kg.km)
	Quantity	7.41E-01	1.81E-03	9.53E-03	2.41E-03	1.18E-03	3.59E-03	1.28E+01	1.96E+02
	Note								
	Classification	Condition	Condition	Condition	Condition	Condition	Condition	Condition	
	Distribution	Freight by ship (kg.km)	Diesel truck: 10 ton (kg.km)	Diesel truck: 10 ton (kg.km)	Freight by ship (kg.km)	Freight by rail (kg.km)	Diesel truck: 10 ton (kg.km)	Diesel truck: 4 ton (kg.km)	
	Quantity	1.59E+03	4.90E+01	1.82E+02	3.41E+04	7.44E+03	3.64E+03	1.64E+02	
	Note								

Note According to PCR, electric consumption is calculated as following condition: printing images defined by ISO/IEC-24712, print 10 sheets/day, 8 hours/day, 20 days/month, 12 months/year, use 3 years, print by Default Mode (ISO/IEC-24711), Plug in time is 8 hours/day.

4.2 Disposition/Recycle information on consumables and replacement parts

Consumables	Classification	Discharge							
	Distribution	Incineration to landfill (as ash) (kg)							
	Quantity	1.69E+00							
	Note								

Note

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

Scenario	Classification	Discharge	Process	Discharge	Condition	Condition			
	Distribution	Incineration to landfill (as ash) (kg)	Shredding (kg)	Landfill: General waste (kg)	Diesel truck: 4 ton (kg.km)	Diesel truck: 4 ton (kg.km)			
	Quantity	1.84E+01	2.58E+01	1.34E+01	3.04E+03	4.26E+01			
	Note								

Note According to PCR, transportation of waste is calculated as following condition: distance is 60 km, use 4 ton truck, loading rate is 62%.

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.