

Product Environmental Aspects Declaration



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

No. AD-14-E364

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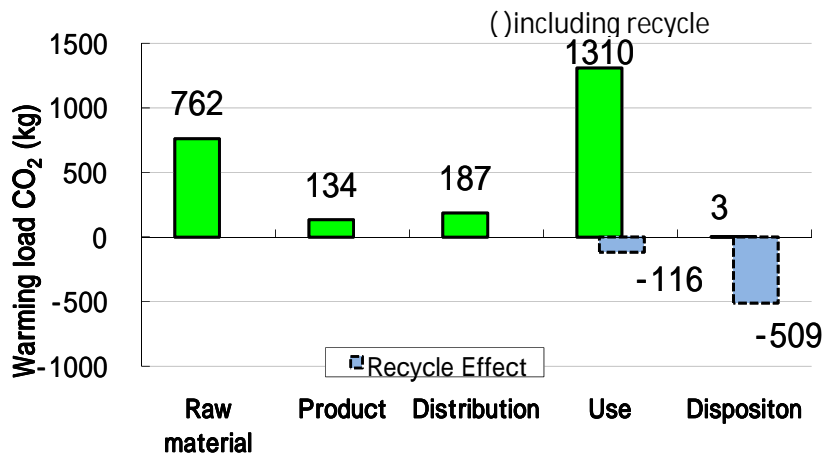


URL <http://www.toshibatec.co.jp>



Marking technologies : Electrophotographic Printer(EP)
Printing Speed: 65 LTR Pages per minutes (B/W)
Maximum Paper Size : LD
Duplex copying : Standard , Document feeding : RADF
The number of copies when used for 5 years is 2,535,000.

Consumption and discharge in a life cycle	All the stage sum totals
Global Warming(CO ₂ equivalent)	2,397(1,771)kg
Acidification(SO ₂ equivalent)	3.5(2.7)kg
Energy resources(crude oil equivalent)	47,400(37,300)MJ



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. 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 to the international ENERGY STAR Program V2.0
- Manufactured at ISO14001 certified factories
- Plastic housing: halogenated flame retardants are free

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: Toshifumi Nakai *

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 category.

Product Environmental Information Data Sheet (PEIDS)



Document control no.	F-02B-03
Product vendor	TOSHIBA TEC CORPORATION
EcoLeaf registration no.	AD-14-E364

Unit Function DB version	V2.1
Characterization Factor DB version	V2.1

PCR name	EP and IJ Printer		Product type	TOSHIBA MFP e-STUDIO657			
PCR ID	AD-04	Product weight (kg)	203.3	Package (kg)	31.1	Weight total (kg)	234.4

In/Out items	Life Cycle Stage	Unit	Production		Distribution	Use	Disposition	Recycle effect		
			Raw material	Product						
Energy Consumption										
		MJ	1.21E+04	2.47E+03	2.52E+03	3.03E+04	4.60E+01	-1.01E+04		
		Mcal	2.89E+03	5.90E+02	6.02E+02	7.23E+03	1.10E+01	-2.41E+03		
Inventory analyses	Resource Consumption from the environment	Energy	Coal	kg	1.65E+02	1.72E+01	5.88E-03	1.57E+02	6.35E-04	-1.68E+02
			Crude oil (for fuel)	kg	8.67E+01	1.96E+01	5.50E+01	2.33E+02	1.00E+00	-5.57E+01
			LNG	kg	1.80E+01	9.29E+00	8.49E-01	7.09E+01	1.58E-02	-8.46E+00
			Uranium ore	kg	1.56E-03	1.16E-03	3.99E-07	8.75E-03	4.29E-08	-2.28E-04
			Crude oil (for material)	kg	3.34E+01	0	0	1.09E+01	0	-3.95E+01
		Material	Iron ore	kg	1.65E+02	0	0	2.29E+01	0	-1.89E+02
			Cu ore	kg	3.43E+00	0	0	0	0	-1.85E+00
			Al ore	kg	2.87E+00	0	0	2.25E+00	0	-4.58E+00
			Ni ore	kg	3.00E-01	0	0	5.02E-02	0	-3.50E-01
			Cr ore	kg	4.61E-01	0	0	7.59E-02	0	-5.39E-01
	Mn ore		kg	8.96E-01	0	0	1.29E-01	0	-2.13E-01	
	Pb ore		kg	1.79E-01	0	0	0	0	-1.50E-01	
	Sn ore		kg	0	0	0	0	0	0	
	Zn ore		kg	1.76E+00	0	0	0	0	-1.48E+00	
	Au ore		kg	0	0	0	0	0	0	
	Renewable resources	wood	kg	4.33E+01	0	0	4.70E+01	0	-9.03E+01	
		water	kg	3.69E+04	1.34E+04	4.45E+00	1.35E+05	4.79E-01	-1.58E+04	
		Emission/Discharge to the environment								
		to Atmosphere	CO2	kg	7.50E+02	1.34E+02	1.79E+02	1.30E+03	3.24E+00	-6.15E+02
			SOx	kg	4.47E-01	1.02E-01	1.07E-01	9.07E-01	3.98E-03	-3.60E-01
NOx			kg	7.13E-01	8.14E-02	8.24E-01	1.05E+00	5.00E-02	-6.22E-01	
N2O			kg	4.71E-02	1.51E-02	3.04E-02	2.60E-02	6.01E-05	-3.88E-02	
CH4			kg	4.15E-03	3.10E-03	1.07E-06	2.40E-02	1.15E-07	-5.25E-04	
CO			kg	1.17E-01	1.98E-02	2.09E-01	2.64E-01	1.98E-02	-1.14E-01	
NM VOC			kg	8.11E-03	6.09E-03	2.09E-06	4.69E-02	2.25E-07	-1.03E-03	
CxHy	kg		2.52E-02	3.31E-04	2.51E-02	2.34E-02	1.00E-03	-2.26E-02		
dust	kg		9.60E-02	4.39E-03	7.93E-02	9.74E-02	3.96E-03	-9.33E-02		
to Water system	BOD		kg	-	-	-	-	-	-	
	COD	kg	-	-	-	-	-	-		
	N total	kg	-	-	-	-	-	-		
	P total	kg	-	-	-	-	-	-		
to Soil system	SS	kg	-	-	-	-	-	-		
	Unspecified solid waste	kg	5.22E+00	1.35E-02	0	4.19E+00	5.77E+00	-5.46E+00		
	Slag	kg	5.40E+01	0	0	6.95E+00	0	-5.91E+01		
	Sludge	kg	5.00E+00	0	0	4.83E+00	0	-9.83E+00		
Impact assessment by emission/discharge to the environment	Exhaustible resources	Low emission radioactivity waste	kg	1.10E-03	8.13E-04	2.79E-07	6.26E-03	3.00E-08	-1.60E-04	
		Energy resources(Crude oil equivalent)	kg	1.25E+03	0	0	7.67E+01	0	-1.06E+03	
	to Atmosphere	Mineral resources(iron ore equivalent)	kg	2.27E+02	5.13E+01	5.60E+01	4.90E+02	1.02E+00	-1.75E+02	
		Global Warming(CO2 equivalent)	kg	7.62E+02	1.34E+02	1.87E+02	1.31E+03	3.26E+00	-6.26E+02	
		Acidification(SO2 equivalent)	kg	9.46E-01	1.59E-01	6.84E-01	1.64E+00	3.90E-02	-7.95E-01	
			kg	-	-	-	-	-	-	
			kg	-	-	-	-	-	-	
			kg	-	-	-	-	-	-	
			kg	-	-	-	-	-	-	
			kg	-	-	-	-	-	-	

[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 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

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.

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]

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Document control no.	F-03-03
Product vendor	TOSHIBA TEC CORPORATION
EcoLEaf registration no.	AD-14-E364

PCR name	EP and IJ Printer (PCR ID:AD-04)	Product type	TOSHIBA MFP e-STUDIO657				
LCA/LCIA in units of:	1 Unit	Product weight (kg)	203.3	Package (kg)	31.1	Weight total (kg)	234.4

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

Product	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)
	Ordinary steel	1.54E+02	Rubber	5.55E-01	Press molding:Iron	1.93E+02	Parts assembly	2.22E+00
	Stainless steel	1.88E+00	Paper	2.03E+01	Press molding:Nonferrous metal	9.25E-01		
	Copper	6.13E+00	Assembled circuit board	2.61E+00	Injection molding	3.94E+01		
	Aluminum	2.20E+00	Medium sized motor	6.15E+00				
	Glass	2.82E+00						
	Thermoplastic Resin	3.81E+01						
	Subtotal	2.05E+02	Subtotal	2.96E+01				
	Total			2.34E+02	Subtotal	2.33E+02	Subtotal	2.22E+00

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	Energy	Material	Material	Material
	Distribution	Electricity(kWh)	Heavy oil as fuel(kg)	Kerosene as fuel(kg)	Gasoline as fuel(kg)	Furnace urban gas(m3)	Industrial water(kg)	Clean water(kg)
	Quantity	3.81E+01	1.85E-02	1.40E-03	7.63E-02	8.84E-01	3.30E+02	6.13E+01
	Note							
Emission/Discharge	Classification	To Water system						
	Distribution	Sewage(KG)						
	Quantity	4.03E+02						
	Note							

Note

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

Distribution	Means of transportation	Freight by ship	Diesel truck:10ton					
	Conditions	Load(kg·km)	Load(kg·km)					
	Quantity	2.81E+06	4.17E+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	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
	Distribution	Electricity(kWh)	Heavy oil as fuel(kg)	Diesel oil as fuel(kg)	Gasoline as fuel(kg)	Furnace urban gas(m3)	Industrial water(kg)	Clean water(kg)
	Quantity	2.34E+03	1.95E-02	7.00E-03	4.89E+00	1.17E+03	1.37E+03	2.57E+00
	Note							
Product	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
	Distribution	Ordinary steel(kg)	Stainless steel(kg)	Aluminum(kg)	Thermoplastic Resin(kg)	Rubber(kg)	cardboard(kg)	
	Quantity							
	Note	2.20E+01	3.15E-01	2.13E+00	6.09E+01	1.82E+00	2.19E+01	
Product	Classification	Processing	Processing	To Water system	Distribution	Distribution		
	Distribution	Press molding:Iron	Injection molding	Sewage(KG)	Freight by ship(Kg·km)	Diesel truck:10ton(kg·km)		
	Quantity	1.68E+01	7.64E-01	1.56E+03	4.37E+05	1.50E+05		
	Note							

Note

4.2 Disposition/Recycle information on consumables and replacement parts

Consumables	Classification	Treatment						
	Distribution	Shredding(kg)						
	Quantity	2.33E+00						
	Note							
Consumables	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment	
	Distribution	Recycle to Iron(kg)	Recycle to SUS(kg)	Recycle to Aluminum(kg)	Recycle to plastics(kg)	Recycle to cardboard(kg)	Recycle to paper(kg)	Landfill:Industrial waste(kg)
	Quantity	2.20E+01	3.15E-01	2.13E+00	9.69E+00	2.02E+01	1.68E+00	2.33E+00
	Note							
Consumables	Classification	Deduction	Deduction	Deduction	Deduction	Deduction	Distribution	
	Distribution	Ordinary steel(kg)	Stainless steel(kg)	Aluminum(kg)	Thermoplastic Resin(kg)	cardboard(kg)	paper(kg)	Diesel truck:4ton (kg·km)
	Quantity	-2.20E+01	-3.15E-01	-2.13E+00	-9.69E+00	-2.02E+01	-1.68E+00	5.65E+03
	Note							

Notes

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

Scenario	Classification	Distribution	Treatment						
	Distribution	Diesel truck:10ton (kg·km)	Shredding(kg)						
	Quantity	4.17E+04	5.77E+00						
	Note								
Scenario	Classification	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment	Treatment	
	Distribution	Recycle to Iron(kg)	Recycle to Copper(kg)	Recycle to Aluminum(kg)	Recycle to Glass(kg)	Recycle to plastics(kg)	Recycle to cardboard(kg)	Recycle to paper(kg)	Landfill:Industrial waste(kg)
	Quantity	1.62E+02	6.13E+00	2.20E+00	2.82E+00	3.50E+01	1.98E+01	4.94E-01	5.77E+00
	Note								
Scenario	Classification	Deduction	Deduction	Deduction	Deduction	Deduction	Deduction	Deduction	
	Distribution	Ordinary steel(kg)	Stainless steel(kg)	Copper(kg)	Aluminum(kg)	Glass(kg)	Thermoplastic Resin(kg)	cardboard(kg)	paper(kg)
	Quantity	-1.60E+02	-1.88E+00	-6.13E+00	-2.20E+00	-2.82E+00	-3.50E+01	-1.98E+01	-4.94E-01
	Note								

Notes

6. Others

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