

Notes:

calculation range.

- 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 to the international ENERGY STAR Program V3.0, EU RoHS
- ·Manufactured at ISO14001 certified factories

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: Yasuo Koseki

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-TypeIII category.

# Product Environmental Information Data Sheet (PEIDS)



Unit Function DB version

**Characterization Factor DB version** 

Document control no.	F-02Bs-02
Product vendor	TOSHIBA TEC CORPORATION
EcoLeaf registration no.	AD-19-E1160

PCR name	EP and IJ print	er	Product type	Т	OSHIBA MFP e	STUDIO2822AN	
PCR code	AD-04	Product weight (kg)	24.0	Package (kg)	5.4	Weight total (kg)	29.4

				Life Cycle Stage		Produ	uction				Recycle
In/Ou	ut iten	ns			Unit	Raw material	Product	Distribution	Use	Disposition	Effect
	Energy Consumption			onsumption	MJ	2.41E+03	2.97E+02	4.71E+02	7.48E+03	3.67E+01	-5.84E+02
					Mcal	5.76E+02	7.09E+01	1.13E+02	1.79E+03	8.77E+00	-1.39E+02
			és		kg	1.28E+01	2.04E+00	1.10E-03	2.87E+01	1.53E-01	-3.87E+00
			erg		kg	2.34E+01	2.38E+00	1.03E+01	6.98E+01	5.18E-01	-4.39E+00
			En	LNG	kg	4.40E+00	1.13E+00	1.59E-01	1.62E+01	8.27E-02	-4.04E-01
			<u> </u>	Uranium content of an ore	kg	3.73E-04	1.38E-04	7.46E-08	1.67E-03	1.04E-05	-1.16E-05
				Crude oil (for material)	kg	1.30E+01	0	0	2.48E+01	0	-5.28E+00
	Consumption	es		Iron content of an ore Cu content of an ore	kg	8.43E+00 5.25E-01	0 0	0 0	3.22E+00 7.46E-03	0	-3.68E+00 -7.81E-02
	np1	resources		Al content of an ore	kg kg	2.48E-01	0	0	5.98E-01	0	-3.02E-01
	sur	S0	(0	Ni content of an ore	kg	4.47E-02	0	0	3.90E-03	0	-7.49E-05
	ü		resources	C content of an ore	kg	6.30E-02	0	0	6.40E-03	0	-1.37E-03
	_	e	nro	Mn content of an ore	kg	4.61E-02	0	0	1.77E-02	0	-1.38E-03
	Ce	stit	SSC	Pb content of an ore	kg	2.64E-02	0	0	6.05E-04	0	-6.35E-03
	Ino	au	l re	Sn content of an ore	kġ	0	0	0	0	0	0
	Resource	Exhaustible	Mineral	Zn content of an ore	kğ	2.59E-01	0	0	5.96E-03	0	-6.24E-02
		ш	line	Au content of an ore	kg	0	0	0	0	0	0
	Impact by		_	Ag content of an ore	kg	0	0	0	0	0	0
	act			Silica Sand	kg	9.86E-01	0	0	5.19E-02	0	-2.69E-01
ŝ	np;			Halite	kg	6.96E+00	1.16E-04	0	1.23E+00	9.97E-03	-2.05E+00
/se	<u> </u>			Limestone	kg	1.96E+00	0	0	1.82E+00	3.88E-01	-6.81E-01
anaiyses				Natural soda ash	kg	9.22E-02	0	0	1.34E-03	0	-2.59E-02
		Renewable resources		Wood	kg	7.70E+00	0	0	2.34E+01	0	0
Inventory		Rene	reso	Water	kg	8.78E+03	1.56E+03	8.27E-01	2.61E+04	1.29E+02	-7.48E+02
Ľ	eu			CO <sub>2</sub>	kg	1.17E+02	1.61E+01	3.34E+01	3.75E+02	2.26E+01	-2.57E+01
	environment		Ð	SOx	kg	7.32E-02	1.21E-02	2.73E-02	2.64E-01	1.24E-02	-2.11E-02
	iro	Atmosphere		NOx	kg	1.58E-01	1.01E-02	2.80E-01	8.06E-01	3.71E-02	-4.25E-02
	L C	-	spr	N <sub>2</sub> O	kg	1.23E-02	2.98E-04	3.92E-03	2.40E-02	5.35E-05	-3.47E-03
	e		i i i i i i i i i i i i i i i i i i i	CH <sub>4</sub>	kg	9.93E-04	3.69E-04	1.99E-07	4.45E-03	2.78E-05	-2.55E-05
	to the		Atr	CO	kg	1.47E-02	2.45E-03	9.63E-02	2.04E-01	8.70E-03	-4.67E-03
			to	NMVOC	kġ	1.94E-03	7.22E-04	3.91E-07	8.72E-03	5.44E-05	-5.00E-05
	arg			СхНу	kg	5.68E-03	6.64E-05	6.65E-03	1.84E-02	3.06E-04	-1.68E-03
	ů,			Dust	kg	1.70E-02	5.53E-04	2.39E-02	6.65E-02	1.97E-03	-5.71E-03
	Dis	5	5	BOD	kg	-	-	-	-	-	-
	) L	en ete	ate iair	COD	kg	-	-	-	-	-	-
	Emission/Discharge	to Water system		N total	kg	-	-	-	-	-	-
	Ē	s to	d to	P total SS	kg kg	_	-	-	-	-	-
				Unspecified Solid Waste	kg kg	- 1.29E+00	- 6.47E-04	0	- 6.08E+00	- 8.91E+00	-2.50E-01
	Impact by	to Soil	system	Slag	kg	3.10E+00	0.472-04	0	9.95E-01	0.312+00	-1.18E+00
	oac	S S	/sto	Sludge	kg	3.41E-01	0	0	1.28E+00	0	-6.49E-01
	Ē	t D	S	Low level radio-active waste	kg	2.61E-04	9.63E-05	5.22E-08	1.16E-03	7.25E-06	-8.13E-06
	ource	stible	rces	Energy resources (crude oil equivalent)	kg	3.99E+01	6.17E+00	1.05E+01	1.21E+02	8.01E-01	-7.45E+00
sment	by Resource Consumption	Exhaus	resources	Mineral resources (Iron ore equivalent)	kg	1.72E+02	0	0	2.39E+01	0	-3.08E+01
ses			ohere	Global Warming (CO <sub>2</sub> equivalent)	kg	1.21E+02	1.62E+01	3.45E+01	3.82E+02	2.26E+01	-2.67E+01
Impact	by Emission / Discharge to		Atmosphere	Acidification (SO <sub>2</sub> equivalent)	kg	1.84E-01	1.92E-02	2.23E-01	8.28E-01	3.84E-02	-5.09E-02
	Jis Sis		to /	-	-	-	-	-	-	-	-
			_	-	-	—	—	—	-	-	-
			-	-	-	-	-	-	-	-	-

[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<sub>2</sub> 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 "O" 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]

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	TOSHIBA TEC CORPORATION
EcoLEaf registration no.	AD-19-E1160



PCR name	EP and IJ printer (PCR-ID:AD-04)	Product type		TOSHIE	BA MFP e-S	TUDIO2822AM	
LCA/LCIA in units of:	1	Product weight (kg)	24.0	Package (kg)	5.4	Weight total (kg)	29.4

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

	Bre	eakdown of pr	imary materials		Math breakdown of parts, whic	h need to apply I	Processing / Assembly Base U	Inits (Parts B, C)
	Material name	Weight (kg)	Material name	Weight (kg)	Process name	Weight (kg)	Process name	Weight (kg)
	Ordinary steel	6.98E+00	Paper	3.60E+00	Press molding:Iron (kg)	7.08E+00	Parts assembly (kg)	1.15E-01
	Stainless steel	2.82E-01	Wood	6.00E-04	Press molding: Nonferrous metal (kg)	4.47E+00		
duct	Other metals	7.18E-01	Semiconductor substrate	7.82E-01	Injection molding (kg)	1.50E+01		
npo	Aluminum	1.50E-01	Medium-sized motor	1.01E+00	Glass molding (kg)	8.68E-01		
Pro	Glass	8.68E-01						
	Thermoplastic resin	1.45E+01						
	Thermosetting resin	1.28E-01						
	Rubber	3.77E-01						
	Subtotal	2.40E+01	Subtotal	5.40E+00				
		Total		2.94E+01	Subtotal	2.74E+01	Subtotal	1.15E-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 SO<sub>2</sub>, NO<sub>2</sub> equivalent.

	Classification	Energy	Energy	Energy	Energy	Energy	Material	Material	Material
uo	Distribution	Heavy oil as fuel (kg)	Furnace LPG (kg)	Electricity (kWh)	Urban gas (13A) (m3)	Furnace urban gas (13A) (m3)	Industrial water (kg)	Clean water (kg)	Diesel truck: 4 ton (kg·km)
ion	Quantity	7.00E-03	4.30E-02	4.49E+00	1.14E-01	1.90E-02	1.47E+01	5.66E+00	1.44E+02
npt	Note								
Isur	Classification	Material							
Consumption	Distribution	Freight by ship (kg∙km)							
	Quantity	7.24E+02							
	Note								
Irge	Classification	Water system							
I/Discharge	Distribution	Sewage processing (kg)							
Emission	Quantity	2.00E+01							
Emis	Note								

Note

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

	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)	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)
ы	Quantity	2.94E+01	6.00E+01	4.94E+01	3.57E+03	2.94E+01	1.17E+04	1.00E+02	3.43E+05
Distribution	Note								
trik	Means of	Diesel truck:	Diesel truck:	Diesel truck:	Diesel truck:				
Dis	transportation	10 ton (kg∙km)	10 ton (kg∙km)	10 ton (kg∙km)	10 ton (kg∙km)				
Dis	transportation Conditions	10 ton (kg∙km) Mass(kg)	10 ton (kg · km) Distance (km)	10 ton (kg·km) Loading Ratio(%w)					
Dis		,			,				

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

	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Cold-Rolled steel plate (kg)	Electroplated steel Plate (kg)	Stainless steel plate (kg)	Aluminum plate (kg)	Low density polyethylene (kg)	Polypropylene (kg)	Polystyrene (kg)	PBT (kg)
	Quantity	1.30E+00	1.80E+00	2.43E-02	5.65E-01	3.30E-02	2.17E-02	1.79E+01	1.90E-02
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	POM (polyacetal) (kg)	PET (kg)	Expandable hard polyurethane (Hard) (kg)	Nitrile-butadiene rubber (NBR) (kg)	Styrene- butadiene rubber (SBR) (kg)	Corrugated cardboard (kg)	Paper (Western style) (kg)	Assembled circuit board (kg)
	Quantity	2.80E-01	9.24E+00	8.24E-01	3.50E-03	9.70E-02	1.09E+01	1.14E-01	5.40E-02
Product	Note								
Pro	Classification	Consumption	Consumption	Consumption	Process	Process	Consumption	Consumption	Consumption
đ	Distribution	Press molding: Iron (kg)	Press molding: Nonferrous metal (kg)	Injection molding (kg)	Freight by ship (kg∙km)	Diesel truck: 4 ton (kg∙km)	Electricity (kWh)	Heavy oil as fuel (kg)	Furnace LPG (kg)
	Quantity	1.82E+00	1.15E+01	1.92E+01	5.96E+05	2.36E+05	3.70E+02	8.20E-04	5.31E-03
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Discharge			

Distribution	Urban gas (13A) (m3)	Furnace urban gas (13A) (m3)	Industrial water (kg)	Clean water (kg)	Sewage processing (kg)		
Quantity	1.25E+00	1.33E-01	2.73E+01	4.74E+01	1.05E+02		
Note							

Note

# 4.2 Disposition/Recycle information on consumables and replacement parts

	Classification	Process	Process	Process	Process	Process	Process	Process	Process
ø	Distribution	Shredding (kg)	Landfill: Industrial waste (kg)	Incineration: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Landfill: General waste (kg)	Diesel truck: 4 ton (kg∙km)	Sorting: Iron (by magnetic force) (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)
Consumables	Quantity	3.40E+01	4.38E-01	1.01E+01	1.82E+01	2.21E+00	1.10E+04	9.21E+00	7.96E+00
ma	Note								
nsu	Classification	Process	Process	Process	Process	Deduction	Deduction	Deduction	
ö	Distribution	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to cold-rolled steel (kg)	Recycle: to Aluminum plate (kg)	Recycle: to Thermoplastic pellet (kg)	Cold-Rolled steel plate (kg)	Aluminum plate (kg)	Polystyrene (kg)	
	Quantity	7.74E+00	1.19E+00	2.26E-01	6.52E+00	1.07E+00	2.26E-01	1.78E+00	
	Note								

Note

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

	Classification	Process	Process	Process	Process	Process	Process	Process	Process
	Distribution	Landfill: Industrial waste (kg)	Incineration: Industrial waste (kg)	Shredding (kg)	Incineration to landfill (as ash) (kg)	Landfill: General waste (kg)	Diesel truck: 10 ton (kg⋅km)	Diesel truck: 4 ton (kg∙km)	Sorting: Iron (by magnetic force) (kg)
	Quantity	1.10E+00	3.70E+00	2.94E+01	1.16E+01	6.01E+00	9.76E+03	1.71E+03	9.98E+00
	Note								
	Classification	Process	Process	Process	Process	Process	Process	Process	Deduction
Scenario	Distribution	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to cold-rolled steel (kg)	Recycle: to copper plate (kg)	Recycle: to Aluminum plate (kg)	Recycle: to Glass (kg)	Recycle: to Thermoplastic pellet (kg)	Cold-Rolled steel plate (kg)
	Quantity	7.07E+00	6.73E+00	2.76E+00	2.59E-01	6.00E-02	3.09E-01	5.16E+00	2.48E+00
	Note								
	Classification	Deduction	Deduction	Deduction	Deduction	Deduction	Deduction		
	Distribution	Copper plate (kg)	Aluminum plate (kg)	Polystyrene (kg)	Polycarbonate- ABS (70/30) (kg)	ABS (kg)	Glass (kg)		
	Quantity	2.59E-01	6.00E-02	1.40E+00	1.99E+00	4.69E-01	3.09E-01		
	Note								

Note

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