Form 1(F-01-03)

Product Environmental Aspects Declaration



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

No. AD-14-E480 Date of publication Nov./14/2014



SAVIN Pro 8100s

1.Printing Process : Electrophotographic (EP) Printing **2.Color :** Monochrome

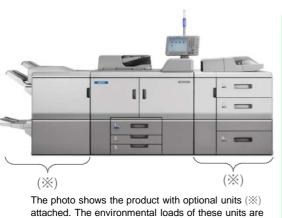
3.Print Speed : 95 prints/minute (LTR)

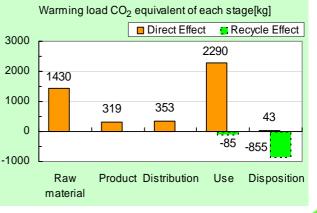
4.Maximum Paper Size: 13" x 19.2" (LCT) **5.Included Units in Assessment**: Automatic Document Feeder, Automatic Duplexing Unit

The warming load of the Use stage is based on the supposition that the product prints 5,414,400 images for five years.

Consumption and discharge in a	All the stage sum
life cycle	totals
Global Warming (CO ₂	4.44t
equivalent)	(3.50t)
Acidification (SO ₂	7.30kg
equivalent)	(6.36kg)
Energy resources (crude oil	88.0GJ
equivalent)	(73.5GJ)

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





Notes:

not included in the results

- 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 regulations: International Energy Star Program, EU RoHS.

• This product and its main components such as photoreceptor, toner, carrier are produced in our factories certified to ISO14001 management system standard.

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 □internal ■external Third party verifier: Hiroo Sakazaki *

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.



Corporate Communication Center email : envinfo@ricoh.co.jp

Environment Contact: RICOH Company, Ltd. Document control no.

Product Environmental Information Data Sheet (PEIDS)

Unit Function DB version

v2.1

F-02B-03



Product Vendor RCOLPT COUNPART, LTD. Excelse registration no. AD-14-E480 PCR name EP and LJ printer Product type SAVIN Pro 8100s PCR name EP and LJ printer Product type SAVIN Pro 8100s PCR name EP and LJ printer Product type SAVIN Pro 8100s Introduction Ltd cyclo State Introduction Use Disposition Receipt (k) MOL liens Ltd cyclo State Introduction Use Disposition Recycle (k) Mol Liens Ltd cyclo State Introduction Use Disposition Recycle (k) Energy Consumption Mul Call Science 4.148-601 1.317-603 1.328-601 1.348-602 1.328-611 3.348-602 1.348-602 1.328-611 3.348-602 1.348-602 1.328-611 3.348-602 1.348-602 1.328-611 3.348-602 1.348-602 1.328-611 3.348-602 1.348-602 1.328-611 3.348-602 1.348-602 1.348-602 1.348-602 1.348-602 1.348-602 1.348-602 1.348-602 1.348	Product vendor		0111101110.	Start Annual Inc.						殿 而環現情報		
PCR name EP and IJ printer Product type SAVIN Pro 8100s InCut litems Life Cycle Stage Unit Raw material Production Use Disposition Recycle v Energy Consumption MJ 2.188+04 5.589+03 4.598+03 5.584+04 6.208+01 1.488+01 -3.488+01 Energy Consumption MJ 2.188+044 5.589+02 2.568+02 2.242E-01 1.348+01 -3.488+01 Under old (for fuel) kg 3.458+02 4.148+01 3.378+00 2.568+02 1.348+01 -3.488 Under old (for fuel) kg 3.008+01 2.008+01 1.338+00 1.348+02 1.328-01 -6.878 Under old (for fuel) kg 5.578+02 0 0 3.488+03 0 -7.318 Under old old (for material) kg 5.578+02 0 0 0 0 3.488+03 0 -4.928 Under old old (for fuel) kg 4.008+00 0 0 0 0 0 -7.318	Р	roduct v	/endor	RICOH C	OMPAN	IY, LTD.	Characterizatio	on Factor DB version	v2.1		http://www.jemai.or.jp	
PCR name EP and LJ printer Product type SAVIN Pro 8100s NOLL items AD-04 Product weight (p) 415 Package (n) 34 Weight total (n) 449 InOut items Life Cycle Stage Unit Rev material Product Distribution Use Disposition Recycle (n) Energy Consumption MJ 2.18E+04 5.58E+03 6.56E+03 5.54E+04 6.20E+01 1.44E+01 -3.45E Model 5.50E+03 1.41E+03 1.17E+03 1.55E+04 1.55E+04 1.55E+02 1.44E+01 -3.45E Uning content of a nore kg 3.05E+01 2.00E+01 1.33E+00 1.34E+02 9.06E-01 -7.31E Uning content of a nore kg 4.00E+00 0 0 0 3.44E+01 0 -4.92E Uning content of a nore kg 1.42E+00 0 0 0 1.32E+01 0 -6.32E+01 Uning content of a nore kg 0.0E+00 0 0 0 -7.33E+02 1.42E+0	EcoLe	eaf regis	stration no	. AD	-14-E48	0		, i i i i i i i i i i i i i i i i i i i		•		
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Note Coal kg 3.45E+02 4.14E+01 3.37E+00 2.56E+02 2.42E+01 -2.94E Image: Section of the section o	Energy C	Consum	ption							-3.45E+03		
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understand Crude oil (for material) kg 5.17E+01 0 0 1.06E+02 0 -7.31E Inon content of an ore kg 3.35E+02 0 0 3.14E+01 0 -3.40E Cu content of an ore kg 4.00E+00 0 0 3.14E+01 0 -4.92E Al content of an ore kg 4.00E+00 0 0 0.00E+00 0 -4.92E Cr content of an ore kg 2.04E+00 0 0 1.03E+01 0 -2.95E Pb content of an ore kg 2.00E+000 0 0 9.72E+04 0 -4.00E Sn content of an ore kg 0 0 0 0 0 0 -2.95E Pb content of an ore kg 0 0 0 0 0 0 -2.95E Au content of an ore kg 0 0 0 0 0 0 -2.95E Au content of an ore kg 0.86E+00 <td< td=""><td></td><td></td><td>Energy</td><td>LNG</td><td>kg</td><td>3.00E+01</td><td>2.06E+01</td><td>3.13E+00</td><td>1.34E+02</td><td>1.32E-01</td><td>-6.87E+00</td></td<>			Energy	LNG	kg	3.00E+01	2.06E+01	3.13E+00	1.34E+02	1.32E-01	-6.87E+00	
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Normal Au content of an ore kg 0 </td <td>sour</td> <td>a</td> <td rowspan="4">Material</td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td>	sour	a	Material			-						
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N20 kg 9.14E-02 5.37E-03 4.51E-02 1.09E-01 7.86E-05 -6.45E CH4 kg 5.56E-03 7.29E-03 5.91E-04 4.15E-02 4.39E-05 9.43E- CO kg 2.81E-01 4.90E-02 6.59E-01 4.03E-01 1.75E-02 -1.28E NMVOC kg 1.09E-02 1.43E-02 1.16E-03 8.14E-02 8.59E-05 1.84E- C_Hy kg 2.03E-01 1.27E-02 1.86E-01 1.76E-01 4.45E-03 -1.72E-03												
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In Notal Ng In Otal Ng In Otal In Otal <thin otal<="" th=""> In Otal <thin <="" otal<="" td=""><td>isch</td><td>Jonr</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-1.31E-01</td></thin></thin>	isch	Jonr									-1.31E-01	
Under system P total kg -	Q/uq	anvii				-	-	-	-	-	-	
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P total kg -<	ш	to W	ater system			-	-	-	-	-	-	
SS kg -						-	-	-	-	-	-	
Unspecified Solid Waste kg 8.14E+00 0 0 3.23E+01 3.38E+01 -2.82E- to Soil system Slag kg 1.16E+02 0 0 9.63E+00 0 -1.07E- Sludge kg 2.38E+01 0 0 0.00E+00 0 -2.22E- Low level radio-active waste kg 1.52E-03 1.91E-03 1.54E-04 1.08E-02 1.14E-05 1.96E-				SS		-	-	-	-	-	-	
Ito Soil system Slag kg 1.16E+02 0 0 9.63E+00 0 -1.07E- Sludge kg 2.38E+01 0 0 0.00E+00 0 -2.22E- Low level radio-active waste kg 1.52E-03 1.91E-03 1.54E-04 1.08E-02 1.14E-05 1.96E-				Unspecified Solid Waste		8.14E+00	0	0	3.23E+01	3.38E+01	-2.82E+00	
Sludge kg 2.38E+01 0 0 0.00E+00 0 -2.22E- Low level radio-active waste kg 1.52E-03 1.91E-03 1.54E-04 1.08E-02 1.14E-05 1.96E-											-1.07E+02	
Low level radio-active waste kg 1.52E-03 1.91E-03 1.54E-04 1.08E-02 1.14E-05 1.96E-		to Se	on system				0	0		0	-2.22E+01	
				Low level radio-active waste	, v		1.91E-03	1.54E-04		1.14E-05	1.96E-04	
	it irce	otion		Energy resources (crude oil	ka	4.12E+02	1.19E+02	1.08E+02	9.14E+02	1.35E+00	-2.32E+02	
	nen	Exha			9	1.122.02	1.102.102	1.002.102	0.112102	1.002100	2.022102	
b B C B Energy resources (crude oil equivalent) kg 4.12E+02 1.19E+02 1.08E+02 9.14E+02 1.35E+00 -2.32E Image: S Image:	essr by Re	e leso	urces		kg	7.36E+03	0	0	2.84E+02	0	-1.90E+03	
Image: Section of the sectio	t ass on/ t to t	ent			ka	1 43E+02	3 10E+02	3 53E+02	2 20E+02	4 27E+01	-9.40E+02	
equivalent) equivalent	mpac imissie harge	to At	tmosphere		-							
Le linearit (302 equivalent) kg 2.06E+00 3.80E-01 1.71E+00 3.07E+00 7.19E-02 -9.34E	by E Disc	envi		· -	kg	2.06E+00	3.80E-01	1.71E+00	3.07E+00	7.19E-02	-9.34E-01	

[Notes for readers: EcoLeaf common rules]

A. 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 2: Supply of used products to other businesses for material reclaim/parts reuse: 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. 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.

By Barker by Similar to the decimal point to two, should be used.
 A Exponential notation, after the decimal point to two, should be used.
 B indicate "0" instead exponential notation can not be done, in order to differentiate to indicate "zero" or negligible in comparison to related results.
 C indicate "1" if calculation nor estimation can not be done, in order to differentiate to indicate "zero".
 (BQD 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-03-03
Product vendor	RICOH COMPANY, LTD.
EcoLEaf registration no.	AD-14-E480

		PCR name	EP and	IJ printe	er(PCR-ID:AD-04)	Product t	ype			S	AVIN	Pro 8100s	
	LCA/I	CIA in units of:		1 p	product	Product weig	jht (kg)	415	Pacl	kage (kg)	34	Weight total (kg)	449
1.1	Produ	ct information (oer unit): parts e	etc. by I	material and by process/as	sembly me	thod						
			Breakdo	Math breakdown of parts, which need to apply Processing / Assembly Base Units (Parts B,									
		Material na	ame Weig	ght (kg)	Material name	Weight (kg)	P	Process name		Weight	(kg)	Process name	Weight (kg)
		SUS		6E+00	PCB	5.20E+00	Press molding: Iron (kg)		3.28E+	+02	Parts assembly (kg)	4.14E+02	
		Alminur	n 1.05	5E+01	Steel	3.18E+02		Press molding: errous metal (kg) 2.29E		⊦01			
	duct	Glass	2.32	2E+00	Wood	1.93E-03	Inject	ion moldir	ng (kg)	5.47E+	⊦01		
	rod	Rubbei	2.89	9E+00			Glas	s molding	g (kg)	5.21E+	+00		
	đ	Other met	tals 1.24	4E+01									
		Paper	3.02	2E+01									
		Thermopla	stic 5.57	7E+01									
		Thermoset	tting 2.46	6E+00									
		Subtota	al 1.25	5E+02	Subtotal	3.24E+02							
			T	otal		4.49E+02		Subtotal		4.11E+	+02	Subtotal	4.14E+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.

Classification	Energy	Energy	Energy	Material	Material			
Distribution	Electricity (kWh)	Furnace urban gas (13A) (m ³)	Furnace coal (kg)	Clean water (kg)	Industrial water (kg)			
Quantity	1.58E+02	5.80E-01	1.04E+00	2.03E+02	8.03E+02			
Note								
Classification	Water system							
Distribution	Sewage processing (kg)							
Quantity	1.01E+03							
Note								
	Distribution Quantity Note Classification Distribution Quantity	Distribution Electricity (kWh) Quantity 1.58E+02 Note Classification Water system Distribution Sewage processing (kg) Quantity 1.01E+03	Distribution Electricity (kWh) Furnace urban gas (13A) (m³) Quantity 1.58E+02 5.80E-01 Note Classification Water system Distribution Sewage processing (kg) Quantity 1.01E+03	Distribution Electricity (kWh) Furnace urban gas (13A) (m ³) Furnace coal (kg) Quantity 1.58E+02 5.80E-01 1.04E+00 Note	Distribution Electricity (kWh) Furnace urban gas (13A) (m ³) Furnace coal (kg) Clean water (kg) Quantity 1.58E+02 5.80E-01 1.04E+00 2.03E+02 Note Classification Water system Image: system Image: system Distribution Sewage processing (kg) Image: system Image: system Image: system Quantity 1.01E+03 Image: system Image: system Image: system	Distribution Electricity (kWh) Furnace urban gas (13A) (m ³) Furnace coal (kg) Clean water (kg) Industrial water (kg) Quantity 1.58E+02 5.80E-01 1.04E+00 2.03E+02 8.03E+02 Note	Distribution Electricity (kWh) Furnace urban gas (13A) (m ³) Furnace coal (kg) Clean water (kg) Industrial water (kg) Quantity 1.58E+02 5.80E-01 1.04E+00 2.03E+02 8.03E+02 Note	Distribution Electricity (kWh) Furnace urban gas (13A) (m ³) Furnace coal (kg) Clean water (kg) Industrial water (kg) Quantity 1.58E+02 5.80E-01 1.04E+00 2.03E+02 8.03E+02 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)	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	4.49E+02	3.80E+02	3.59E+01	4.75E+05	4.49E+02	9.02E+03	1.00E+02	4.05E+06
outio	Note								
Distribution	Means of	Freight by rail	Freight by rail	Freight by rail	Freight by rail	Diesel truck:	Diesel truck:	Diesel truck:	Diesel truck:
	transportation	(kg·km)	(kg∙km)	(kg·km)	(kg·km)	20 ton (kg·km)	20 ton (kg·km)	20 ton (kg·km)	20 ton (kg·km)
	transportation Conditions	(kg∙km) Mass(kg)	(kg·km) Distance (km)	(kg∙km) Loading Ratio(%w)	(kg∙km) Load(kg∙km)	20 ton (kg·km) Mass(kg)	20 ton (kg·km) Distance (km)	20 ton (kg⋅km) Loading Ratio(%w)	20 ton (kg·km) Load(kg·km)
				Loading			(0)	Loading	

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	Stainless steel plate (kg)	Glass (kg)	Styrene- butadiene rubber (SBR) (kg)	Copper plate (kg)	Zinc (kg)	Gold (kg)	Corrugated cardboard (kg)	Polycarbonate (kg)
	Quantity	1.03E+00	4.08E-01	6.29E+00	1.16E-02	9.40E-03	5.53E-05	8.78E+00	7.18E-01
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Polycarbonate- ABS (70/30) (kg)	Low density polyethylene (kg)	PET (kg)	POM (polyacetal) (kg)	Polypropylene (kg)	Polystyrene (kg)	Epoxy resin (EP) (kg)	Expandable hard polyurethane (Hard) (kg)
	Quantity	7.86E-02	2.08E+01	1.14E+02	7.79E-02	9.26E-02	2.24E-01	1.77E+00	2.16E-01
	Note								
	Classification	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption
	Distribution	Expandable soft polyurethane (for automobile) (kg)	Electroplated steel Plate (kg)	Cold-Rolled steel plate (kg)	Press molding: Iron (kg)	Press molding: Nonferrous metal (kg)	Injection molding (kg)	Glass molding (kg)	Parts assembly (kg)
roduct	Quantity	7.37E-01	2.77E+00	2.72E+01	2.32E+01	2.10E-02	2.47E+01	6.70E+00	5.46E+01
Loc	Note								

Classification	Condition	Energy	Energy	Material	Water system	Consumption	Condition	Consumption
Distribution	Diesel truck: 10 ton (kg+km)	Electricity (kWh)	Furnace urban gas (13A) (m ³)	Industrial water (kg)	Sewage processing (kg)	Electricity (kWh)	Freight by ship (kg∙km)	Gasoline (kg)
Quantity	2.32E+04	1.03E+03	3.48E+00	2.87E+02	2.87E+02	2.94E+03	1.11E+06	3.96E+01
Note								
Classification	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Distribution	Freight by rail (kg∙km)	Diesel truck: 20 ton (kg · km)	Diesel truck: 10 ton (kg⋅km)	Freight by ship (kg · km)	Freight by rail (kg · km)	Diesel truck: 20 ton (kg·km)	Diesel truck: 10 ton (kg⋅km)	Freight by ship (kg · km)
Quantity	6.13E+05	1.19E+05	1.47E+03	7.03E+04	3.89E+04	7.55E+03	3.35E+04	4.92E+05
Note								
Classification	Condition	Condition						
Distribution	Freight by rail (kg∙km)	Diesel truck: 20 ton (kg·km)						
Quantity	2.72E+05	5.28E+04						
Note								

Note

4.2 Disposition/Recycle information on consumables and replacement parts

	Classification	Process	Process	Process	Process	Process	Process	Process	Process
Se	Distribution	Diesel truck: 4 ton (kg∙km)	Landfill: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Shredding (kg)	Sorting: Iron (by magnetic force) (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Glass (kg)
able	Quantity	8.50E+02	3.00E+01	8.78E+00	7.38E+01	7.34E+01	5.11E+01	5.11E+01	4.08E-01
E E	Note								
Consumables	Classification	Process	Process	Process	Deduction	Deduction	Deduction	Deduction	Process
_	Distribution	Recycle: to cold-rolled steel (kg)	Recycle: to copper plate (kg)	Recycle: to Thermoplastic pellet (kg)	Glass (kg)	Cold-Rolled steel plate (kg)	Copper plate (kg)	Polystyrene (kg)	Diesel truck: 10 ton (kg·km)
	Quantity	2.23E+01	2.02E-02	2.11E+01	3.67E-01	2.23E+01	2.02E-02	2.11E+01	5.91E+04
	Note								
Note									

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

	Classification	Process	Process	Process	Process	Process	Deduction	Process	Process
	Distribution	Landfill: Industrial waste (kg)	Shredding (kg)	Incineration: Industrial waste (kg)	Incineration to landfill (as ash) (kg)	Diesel truck: 10 ton (kg·km)	High density polyethylene (kg)	Sorting: Iron (by magnetic force) (kg)	Sorting: Nonferrous metal (by eddy current with wind force) (kg)
	Quantity	2.91E+01	4.16E+02	1.41E-01	3.01E+01	3.57E+05	8.73E-01	4.12E+02	1.07E+02
	Note								
	Classification	Process	Process	Process	Process	Process	Process	Deduction	Deduction
Scenario	Distribution	Sorting: Plastics (by relative density difference in water) (kg)	Recycle: to Glass (kg)	Recycle: to cold-rolled steel (kg)	Recycle: to Aluminum plate (kg)	Recycle: to copper plate (kg)	Recycle: to Thermoplastic pellet (kg)	Glass (kg)	Cold-Rolled steel plate (kg)
	Quantity	8.55E+01	2.32E+00	3.06E+02	9.78E+00	1.63E+01	5.24E+01	2.27E+00	3.06E+02
	Note								
	Classification	Deduction	Deduction	Deduction					
	Distribution	Aluminum plate (kg)	Copper plate (kg)	Polystyrene (kg)					
	Quantity	9.78E+00	1.63E+01	5.15E+01					
	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.