Product-Specific Criteria for Facsimile (PSC-ID：AH-03)

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Note: These standards have been prepared for the development of EcoLeaf™ environmental labels. Use for any other purpose without consent of the EcoLeaf™ program office is strictly prohibited.

No.	Major key	Minor key	Class	Requirements
1	Preconditions	Target product	Description	Facsimiles are communications appliances widely used in homes, offices, and other places, and the technologies they use are thermal paper/thermal film (SP), inkjet (IJ), and electrophotograpy (EP) to produce monochrome and color documents.
2			Scope	Product and packaging included in smallest retail unit (wrapping and box). However, when product functions are not fulfilled in the above form, scope includes separate equipment that does so.
3		Stage	Scope	All lifestyle stages covered.
4	Product data sheet (PDS) Input data for the LCI: Lifecycle inventory analysis	Manufacturing stage information (product information)	Product materials or ingredient makeup	1) Class A parts (see section 3.4 of implementation guidelines): SP faxes Thermal paper: Thermal head, thermal paper (get data on energy for processing thermal paper). Thermal film: Thermal head, ink ribbon EP faxes Photoreceptors. 1. For cylinder processing: • Use in-house data on processing energy (when in-house

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				data are available). • See No. 14 when in-house data are not available. 2. Use in-house data on the energy used in processing from cylinders to coating. Toner. Use in-house data on processing energy. Carrier. Same conditions as for toner. IJ Faxes Print head. Use in-house data on processing energy. Ink 1. All ink constituents are treated as water, and the intensity for “water” is used, but this does not restrict the use of individual intensities. 2. Use the processing energy data obtained in house. For the materials used in class A parts, go back to the MSDS material level. 2) To determine resource input amounts, use material mass for the stage at which materials become products, get a breakdown of the masses of the materials making up at least 90% of total product mass, and prorate the rest to come out to 100%. 3) The 12 materials listed on the product data sheet are: “Normal steel, Stainless steel, aluminum, other metals, thermoplastic resins, thermosetting resins, rubber, glass, paper, semiconductor substrates, wood, and water.” For other materials, list their intensities. 4) Open recycling and reuse When open recycling and reuse are included, each company can calculate these categories by creating scenarios considered appropriate, and while taking careful note of

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				the following items. The soundness of scenario bases is subject to verification. (1) Processes regarded within the scope of “indirect effects” (2) Deductions and impacts within the scope of “indirect effects” Note PSC-AH-01: No distinction is made between direct and indirect effects with regard to recycling effectiveness.
5	Product data sheet (PDS) Input data for the LCI: Lifecycle inventory analysis	Manufacturing stage information (production site information)	Material and energy inputs, consumption, and emissions	Input and consumption items: Electricity, fuel oil A, diesel fuel, kerosene, gasoline, LNG (town gas), LPG, city tap water, industrial water supply, groundwater However, determine the impact of processing energy for class A parts by going back to the MSDS material level. Emissions: Not specified. Each company should list those which it deems important. Transport impacts for material inputs (raw materials and energy) are not factored in. Byproducts and sub-materials are not factored in. Sub-materials: Defined as materials input and discarded at manufacturing sites, and not shipped with products.

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6		Distribution stage information	Product transport conditions	1) Means of transport to users and loading ratio are based on models developed by each applicant company. 2) Domestic transport distance (transport to site of product use) is calculated as 100 km. Product transport impact from overseas to Japan is the impact of both land and sea transport from the manufacturing site. Note PSC-AH-01: Overseas transport impact is not included. 3) Discarding and recycling of facsimile packaging are entered in No. 8 “Waste/recycling.”

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7		Usage stage information	Product usage conditions	1) Usage conditions (1) The standard document for personal faxes is the industry standard, the A4-size ITUT test chart #1, or a document 3% or more black. Transmitting, 15 pages/month; receiving, 15 pages/month. Usage period is 5 years. Faxes are assumed to be in standby mode 24 hours/day other than when in use. One year is 365 days with no leap year. (2) The standard document for business faxes is the industry standard, the A4-size ITUT test chart #1, or a document 3% or more black. Transmitting, 5 pages/hour; receiving, 5 pages/hour; faxes operate 8 hours/day, 20 days/month. Usage period is 5 years. One year is 365 days (no leap year). Assuming a period of 5 years, faxes are in standby mode 24 hours/day other than when in use. 2) Paper used by faxes is not included when calculating impact, but data on energy used to process thermal paper are included. 3) Numbers of regularly replaced parts and consumables used Items included: based on plan when facsimile was designed, or on actual parts and consumables used. Quantities: The quantities used based on the above (5 years for both personal and business faxes), with fractions rounded up to integers. Transport: Each company develops a model based on the above for transport from the manufacturing site to place where product is used. 4) Conditions for discarding and recycling of regularly replaced parts for consumables are set forth in No. 8 “Waste/recycling.”

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8	Product data sheet (PDS) Input data for the LCI: Lifecycle inventory analysis	Waste/ recycling stage information	Product waste/ recycling conditions	1) Scenario development Use the appendix: “Discarding and Recycling Scenarios for Scrapped Products.” 1. Recovery routes are those in each company’s scenarios, which include transport. • Reuse scenario • Recycling scenario Each company sets material-specific recycling rates (=η). • Industrial waste management scenario with no reuse or recycling. 2. For non-recovery route, use “Municipal Solid Waste Management Scenario” (see appendix). 2) Deduction scenario: Use the appendix: “Discarding and Recycling Scenarios for Scrapped Products.” 3) Criteria for determination of recyclability and reusability. Each company decides on its own criteria. 4) When using recovery rate η_1 of products, packaging, consumables, and replacement parts, personal faxes are η_1 = 0%, and business faxes are η_1 = 40%. Or the actual rate (η_2) may be used. When products are reused, add in the reuse handling impact including transport for making products available for reuse, and deduct the material manufacturing and processing impacts of the reused parts (as a rule, measured data are used when calculating reuse handling impact). Each company sets the number of times a product is reused (N_1) in units of 5 years after the 5-year usage period has elapsed, based on its measured or design values. N_1 must be an integer. (Example: If parts are used 10–14 years, N_1=1; if 15–19 years, N_1=2.) Impact is calculated in the following manner using N_1.

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				Deduction amount for part reuse = "material manufacturing impact and processing impact for reused part" x "product recovery rate η_1 (or η_2)" x "reuse deduction rate N_1 (N_1+1)" Factor in handling impact for parts reused within 5 years. 5) Consumables and replacement parts The number of times an item is reused during its lifetime is N_2, and the number of items used in 5 years is n, with fractions rounded up to integers. Impact calculation uses the above N_2 and n: Part impact = "impact generated until one part is manufactured" x "number of items used in 5 years (n)" Deduction amount for part reuse = "possible reuse amount planned at time of design by each company" x "product recovery rate η_1 (or η_2)" x "reuse deduction ratio $N_2/(N_2+1)$" x "number of items used in 5 years (n)" Reuse handling impact = "reuse handling impact for one part" x "part recovery rate η1 (or η2)" x "number of parts reused in 5 years (n)" 6) Open recycling and reuse When open recycling and reuse are included, each company can calculate these categories by creating scenarios considered appropriate, and while taking careful note of the following items. The soundness of scenario bases is subject to verification. (1) Processes regarded within the scope of "indirect effects" (2) Deductions and impacts within the scope of "indirect effects"

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				Note PSC-AH-01: No distinction is made between direct and indirect effects with regard to recycling effectiveness. The following quality weighting coefficients are multiplied by the amount of recycled materials recovered: Z=0.5 for metals, Z=1 for glass, Z=0.9 for cardboard, and Z=0.35 for other materials.
9	Product Environmental Information Disclosure Sheet (PEIDS)	Inventory analyses	Lifecycle inventory calculation rules	Paper and wood are regarded as class A parts, and their processing and assembly impacts are not factored in. When open recycling and reuse are included, calculate direct and indirect effects separately and express the indirect portion as “recycling effectiveness.” On the PEIDS, put the indirect effect total in the “Recycling Effectiveness” space, and put the recycling effectiveness breakdown in the PEIDS explanation space. Note PSC-AH-01: No distinction is made between direct and indirect effects with regard to recycling effectiveness.
10		Impact analysis	Additional impact category	“Ozone layer depletion,” “eutrophication,” and “photochemical oxidants” deleted from the PEIDS.
11	Breakdown data sheet (PDS-related)	Data processing	Allocation rule	Not unified; each company decides as it sees fit.

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12		Data collection	Coverage	When data are unobtainable, you may substitute data (including intensities) that include the conditions used in designing or planning.
13			Cut-off rules	When a cut-off is applied for assembly or other impact, note this fact and clearly state the reason.
14	Breakdown data sheet (PEIDS-related)	Database	Intensity selection	1) The “parts assembly” intensity is used for assembly of purchased parts decided by each company. 2) The “A1 plate” intensity is used for photoreceptor materials. 3) The intensity for iron oxide (if used) is that for “cold-rolled steel sheets.” 4) Processing of cylinders for photoreceptors uses the “nonferrous press” intensity. 5) For ink composition, use the intensity category “service (water).” 6) For the ceramics in thermal heads use the intensity for “glass.” See the “List of Intensities” for the names of these intensities. The foregoing does not restrict the use of individual intensities.
15			Intensity addition	None.
16			Addition of characterization factor	None.
17	Product environmental information	Product specification		1) Printing technology used 2) Two categories of personal and business

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				use 3) Maximum printing size 4) Maximum document size 5) Both sending and receiving 6) Other functions subject to verification
18	***Merge with cell above***	Data disclosure		1) Items to list Compulsory items “global warming impact, acidification impact, and energy consumption” are specified (in the guidelines), while the 7 optional items (guidelines) may be listed as desired. 2) Life cycle stages included As desired. 3) Usage conditions List period of use (5 years), number of pages sent (X pages), number of pages received (X pages). List environmental impact of paper when fax is used, with reference to the following. “Paper necessary at the usage stage is not included when calculating impact. However, processing energy data for thermal paper are included." 4) Method of representation Use text, tables, and graphs as desired. When open recycling and reuse are included: • Show recycling effectiveness with dotted lines independently for each stage, without integrating actual impact. • Write the recycling effectiveness breakdown in the margin. Note

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19	Other environment-related information	Optional items		The following may be entered. (1) Type I and/or Type III environmental label (2) Acquisition of ISO 14001 certification (3) Certificates, approvals, or awards from national or industry organizations (4) Information on hazardous substances

Discarding and Recycling Scenario for Scrapped Products (Revised March 1, 2004)

1 Discarded products
2 Recovery route (handled as industrial waste, or reused or recycled)
3 Non-recovery route (handled as MSW)
4 Amount of reused parts
5 Determination
6 Potential recycling amount
7 Municipal solid waste (MSW) disposal scenario
8 Reuse scenario
9 Repair, inspection, cleaning, etc.
10 Recycling scenario
11 Crushing, classification, recycling, etc.
12 Amount of material recycled
13 Handled as industrial waste
14 Industrial waste disposal scenario
15 Amount that can be reused (deducted) as parts
16 Amount that can be reused (deducted) as materials
17 Product
18 Crushing
19 Handled as combustibles
20 Handled as noncombustibles
21 MSW incineration
22 MSW landfilling
23 Non-recovery route: Factored in when discarded products are disposed of as municipal solid waste (with municipalities responsible).

Recovery route: Factored in when products are either scrapped as industrial waste (with businesses responsible) or reused/recycled.