

Eco Mark Product Category No.132

“Toner Cartridge Version1.5”

Certification Criteria

—Applicable Scope—

- A. Original toner cartridge
- B. Recycled toner cartridge

Established: May 5, 2007
Latest revision August 21, 2008
Term of validity: March 31, 2015

Japan Environment Association
Eco Mark Office

NOTE: This document is a translation of the criteria written in Japanese. In the event of dispute, the original document should be taken as authoritative.

Eco Mark Product Category No.132

“Toner Cartridge Version1.5” A. Original toner cartridge

Certification Criteria

Japan Environment Association
Eco Mark Office

1. Purpose of Establishing Certification Criteria

In 2002, the sales of toner cartridges used for printers, copiers, and facsimiles in Japan were estimated to total 17 million units (source: Inter Watch Corporation). The market shows an upward trend with the increasing sales of machine bodies. Meanwhile businesses are showing growing interest in the recycling of used toner cartridges, and this has led to the extensive distribution of recycled toner cartridges.

In early 2003, the Asia Four Label Mutual Recognition Project successfully established common core criteria that mutually certify the eco labels of Korea, Thailand, Taiwan, and Japan based on the agreement of the respective eco labeling secretariats in each country. Defining toner cartridges as original, refilled, and recycled toner cartridges, the criteria aim to reduce environmental impact during the manufacture, use, and disposal of toner cartridges. Given that the respective eco labeling secretariats of each country have agreed on the outline of the criteria, and foundations for mutual recognition have more or less been established, the Eco Mark program has also decided to promote the use of eco-friendly toner cartridges in printers, copiers, and facsimiles in Japan by setting a product category for toner cartridges.

In the present review, it was decided that toner cartridges shall be re-examined to give a general evaluation, which is based on the common core certification criteria and the concept of product life cycle. This evaluation incorporates aspects such as reducing environmental impact risks of chemical substances, repeated use, recovery, and recycling, while also taking into consideration social circumstances unique to Japan.

Eco Mark Product Categories No.117 “Copiers” and No.122 “Printers” focus mainly on the actual machines themselves. Although basic criteria on toner cartridges are prescribed in these categories, most are limited to the toner and container. Thus in the present review, it was decided that certification criteria shall also be prescribed on services related to toner cartridges such as refilling and recycling, and adjustments shall be made for consistency with other product

categories, taking into consideration how toner cartridges are sold with machines such as printers, etc.

2. Applicable Scope

Toner cartridges used in printers, copiers, facsimile machines, and multifunctional copiers, etc., which are based on the electrophotography method apply. If cartridges consist of photo development units and photosensors, however, applicable products are limited to those sold together with toner containers as a set. Toner containers, photosensors, and photo development units that are sold separately are outside the scope of this product category.

3. Terminology

Photosensor	With photoconductivity, it records images (optical information images) as electrostatic potential images. Comes in drum, sheet, or belt shapes. Called photosensitive drum or photosensitive belt.
Development unit	Device which can develop and visualize electrostatic potential images formed on the photosensor surface.
Percentage of waste paper in the pulp mixture	Weight percentage of waste pulp contained in the product. Expressed by (waste paper pulp) / (virgin pulp + waste paper pulp) x 100 (%). However, the weight of the pulp is measured under the condition of containing 10% moisture.
Prescription constituents	Material components added for intended purpose to give any characteristics to the products. Impurities that are technically unavoidable in the manufacturing process are not included.
Recycling rate	Weight percentage of the used product transferred to the recycling process after use, disposal, and collection for the purpose of recycling; or weight percentage of parts of the toner cartridge collected that are reused, material recycled, energy recovered, converted to oil, gasified, or subject to blast furnace reduction or conversion to chemical materials by coke oven
Reused part	Parts that have previously been used
Reuse/material recycling rate	Weight percentage of the used product transferred to the recycling process after use, disposal, and collection for the purpose of recycling; or weight percentage of parts of the toner cartridge collected that are reused or material recycled.
Toner cartridge:	Cartridge for printing composed of two or more of the following; photosensor, photo development unit, and toner container filled with toner for electrophotographic printers, copiers, facsimile machines, multifunctional copiers, etc
Original toner cartridge	Cartridge manufactured by copier manufacturers or manufactured on consignment by copier manufacturers.
Recycled toner cartridge	Used toner cartridges refilled with toner and whose expendable parts have been replaced as required.
Pre-consumer	Material or rejected product generated from a disposal route in

material	a product manufacturing process, and went through the recovery process such as collection and segregation, excluding those which are recycled within the same process (plant)
Post-consumer material	Material or product which was disposed of after being used as a product
Plastics	Material composed of single or plural polymers, plus additives, fillers, etc. which are added to the polymer(s) to give specific characteristics
Polymer	High molecular material which is main constituent of plastic
Homopolymer	Single polymer. Polymer of a single kind of monomer.
Copolymer:	Polymer of more than two kinds of monomer.
Polymer alloy (Polymer blend):	Polymer Alloy (Polymer Blend): Generic name of multi element system high molecule obtained by mixture or chemical combination of high molecules more than two elements. Physically mixed different kind of high molecule is called a polymer blend.
Material recycling	Recycling of material, excluding the recovery of energy, conversion to oil, gasification, blast furnace reduction, and conversion to chemical materials by coke oven.

4. Certification Criteria and Certification Procedure

When the applied product is incorporated into a product certified by No. 117 “Copiers Version 2” or No. 122 “Printers Versioin 2”, statement of “Certification number” of the relevant product in an attached certificate could replace a certificate for conformance with the standard for common item listed in Exhibit 1.

4-1. Environmental Criteria and Certification Procedure

Products shall meet all appropriate requirement of 4-1-1. Products including expendables, instruction manuals, and packaging prescribed in 4-1-2 to 4-1-4 shall also meet all appropriate requirements.

4-1-1 Common Criteria

(1) In manufacturing the applied product, related environmental laws and regulations and pollution control agreement (hereinafter referred to as the “Environmental Laws, etc.”) must be followed with respect to air pollution, water contamination, noise, offensive odor, and emission of hazardous substances in the area where the plant performing the final manufacturing process is located.

In addition, the state of compliance with the Environmental Laws, etc. for the past five years from the date of application (whether there is any violation) must be reported. If there is any violation, proper remedies and preventive measures shall have been already taken, and the related Environmental Laws, etc. must

thereafter be followed appropriately.

[Certification Procedure]

With respect to the compliance with the Environmental Laws, etc. in the area where the plant performing the final manufacturing process is located, a certificate issued by the representative of the business of manufacturing the applied product or the relevant plant manager (entry or attachment of a list of names of the Environmental Laws, etc.) must be submitted.

In addition, the applicants shall report whether there is any violation in the past five years, including a violation subject to administrative punishment or administrative guidance, and if there is, the following documents in a and b must be submitted:

- a. With respect to the fact of violation, guidance documents from administrative agencies (including order of correction and warning) and copies of written answers (including those reporting causes and results of correction) to such documents (clearly indicating a series of communication);
- b. Following materials (copies of recording documents, etc.) concerning the management system for compliance with the Environmental Laws, etc. in 1)-5):
 - 1) List of the Environmental Laws, etc. related to the area where the plant is located;
 - 2) Implementation system (organizational chart with roles, etc.);
 - 3) Bylaws stipulating retention of recording documents;
 - 4) Recurrence prevention measures (future preventive measures);
 - 5) State of implementation based on recurrence prevention measures (result of checking of the state of compliance, including the result of onsite inspection).

- (2) Solvents shall not use the specific chlorofluorocarbons (five CFCs), other CFCs, carbon tetrachloride, trichloroethane, and CFC substitutes (HCFCs), given in Table 1, in the final manufacturing stage as well as the final supply stages of products (toner cartridges) or circuit boards.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate.

Table 1 Substances provided in 4-1-1.(2) and 4-1-3 (24)

CFC5s	Trichlorofluoromethane	Dichlorotetrafluoroethane
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	Dichlorodifluoromethane	Chloropentafluoroethane
	Trichlorotrifluoroethane	
Other CFCs	Chlorotrifluoromethane	Pentachlorotrifluoropropane
	Pentachlorofluoromethane	Tetrachlorotetrafluoropropane
	Tetrachlorodifluoroethane	Trichloropentafluoropropane
	Heptachlorofluoropropane	Dichlorohexafluoropropane
	Hexachlorodifluoropropane	Chloroheptafluoropropane
	Carbon Tetrachloride	
	1,1,1-Trichloroethane	
HCFC	Dichlorofluoromethane	Dichloropentafluoropropane
	Chlorodifluoromethane	Chlorohexafluoropropane
	Chlorofluoroethane	Pentachlorofluoropropane
	Tetrachlorofluoroethane	Tetrachlorodifluoropropane
	Trichlorodifluoroethane	Trichlorotrifluoropropane
	Dichlorotrifluoroethane	Dichlorotetrafluoropropane
	Chlorotetrafluoroethane	Chloropentafluoropropane
	Trichlorofluoroethane	Tetrachlorofluoropropane
	Dichlorodifluoroethane	Trichlorodifluoropropane
	Chlorotrifluoroethane	Dichlorotrifluoropropane
	Dichlorofluoroethane	Chlorotetrafluoropropane
	Chlorodifluoroethane	Trichlorofluoropropane
	Chlorofluoroethane	Dichlorodifluoropropane
	Hexachlorofluoropropane	Chlorotrifluoropropane
	Pentachlorodifluoropropane	Dichlorofluoropropane
Tetrachlorotrifluoropropane	Chlorodifluoropropane	
Trichlorotetrafluoropropane	Chlorofluoropropane	

- (3) For dust diffusion during loading to a main body of a device, conformance with Table 2 shall be satisfied. However, if a main body of a device with which the product is associated was released before May 31, 2008, Table 3 shall also be used.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate. documents and measured values certifying compliance to the measurement methods in RAL-UZ-122: 2006 (Example 4-1) which is adopted by Blue Angel, or either JBMS-66 or RAL-UZ62 Annex 3 (Example 4-2) shall be submitted.

If submission is difficult at the time of application, a signed consent form indicating that “a certification indicating actual measured values should be submitted by the time the Eco Mark agreement on use is entered, and if criteria are not met, the agreement should not be entered” shall be submitted.

- (4) For styrene diffusion during loading to a main body of a device, conformance with Table 2 shall be satisfied. However, if a main body of a device with which the product is associated with was released before May 31, 2008, Table 3 shall also be

used.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate および
Certifying documents indicated in 4-1-1(3)[Certification Procedure] shall be
submitted.

Table 2 Criteria for emission of powder dust and styrene

		Emission rate (mg/h)		Measuring method
Target substance		Monochrome	Color	
(3)	Powder dust	≤ 4.0	≤ 4.0	
(4)	Styrene	≤ 1.0	≤ 1.8	

*If the emission rate during the color operation phase satisfies the criteria for the target substances listed in (3) and (4) during the monochrome operation phase, emissions tests during the monochrome operation phase are not required.

Table 3 Criteria for emission of powder dust and Styrene

	Target substance	Concentration (mg/m ³)	Measuring method (one of the followings)	
(3)	Powder dust	≤0.075	Blue Angel (RAL-UZ-62:2002) Appendix 3	JBMIA (JBMS-66)
(4)	Styrene	≤0.07	Blue Angel (RAL-UZ-62:2002) Appendix 5	

- (5) The photoreceptor of products shall not contain cadmium, lead, mercury and selenium as prescription constituents.

[Certification Procedure]

A list indicating whether the concerned substances are added shall be
submitted.

- (6) To ensure that products can be disassembled easily, the following points “a.” to “e.” shall be met.
- a. Modules making up products shall be easily separable
 - b. There must be sufficient space to insert tools at fixing points/dismantling points.
 - c. Joint between different materials shall be easy to find.
 - d. Non-separable joints such as glued or welded joints between different materials may not be used (for case parts and chassis).

e. IC chips or other devices that prevent disassembly and reuse shall not be used.

[Certification Procedure]

“a.” to “e.” shall be stated in the attached certificate.

- (7) Systems for recovering and material recycling products shall be available. The reuse and material recycling percentage of the toner cartridge parts recovered of the total product weight (excluding the toner) shall be over 50%.

[Certification Procedure]

A certificate indicating the total product weight (excluding the toner), reuse of parts, parts, material recycling purpose, etc. shall be submitted. (Example 5)

- (8) The recycling percentage of recovered toner cartridge parts shall be over 95% of the total product weight (excluding the toner). Parts of recovered products that cannot be recycled shall be disposed by eco-friendly methods.

[Certification Procedure]

Documents describing the recycling percentage and that eco-friendly processing and disposal systems are available (collection system, processing ability, and processing details, etc.) shall be submitted. (Example 5)

- (9) Packages of the cartridge, printed documents enclosed with the cartridge, or instruction manuals of the machine product shall indicate the following information (“a.” to “j.”) clearly:

- a. Name of the product under application
- b. Company name of applicant (or brand company name)
- c. Contact telephone number
- d. Product recovery method for users to return used products
- e. Correct use of product
- g. Information on after-sales service for users
- h. Not opened with force
- i. In the event toner dust leaks out due to inappropriate handling, avoid inhaling the dusts and contact with skin.
- j. Measures when the toner adhere to clothing or hands, or enter eyes or mouth.
- k. Should be stored in places out of reach of children, and measures when children drink the toner by accident

[Certification Procedure]

Copies of relevant portions of packages, printed documents enclosed with the cartridge, or instruction manuals of the machine product shall be submitted.

- (10) Information on product use shall be provided on machines and various models to users clearly on packaging, pamphlets, and company websites. Information on how users can acquire the latest information on applicable machines and models shall also be provided.

[Certification Procedure]

Copies of relevant portions of packaging, printed materials for advertisement, or websites, etc. shall be submitted.

- (11) The product shall be clearly labelled with the following:

- a. Name of the product under application
- b. Company name of applicant (or brand company name)

[Certification Procedure]

Photographs of relevant portions of the product, etc. shall be submitted.

- (12) Plastic products shall be made of one homopolymer or copolymer. However, polymer blends (polymer alloys) can be used. If labels, etc. are not easy to separate, these shall be of the same materials as the portion on which they are pasted, or must not be the obstacle for recycle of the plastic parts on which they are put.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate. A document and list (Example 6) of plastic materials used, and a document describing whether labels, markings, stickers etc. are easy to separate in case that labels, markings, stickers, etc. are put on the corresponding plastic casing parts shall be submitted.

- (13) Any plastic additives including lead, cadmium or mercury, or pigment shall not have been added to plastic components, as prescription constituents, excluding electric or electronic parts including wire.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate.

- (14) Polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs) and chlorinated paraffin (chain carbon number of 10 to 13 and chlorine density of over 50%) shall not be added to plastic parts as prescription constituents.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate.

- (15) Plastic parts shall be marked in accordance with ISO11469 (equivalent: JIS K6999: 2004), except for products that are less than 25g, parts whose smooth area is less than 200 mm², and reused plastics.

[Certification Procedure]

Documents certifying conformance to the plastic marking parts list or ISO11469 shall be submitted. (Example 7)

- (16) Products shall be sealed during storage or handling to prevent leakage of toner.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate.

- (17) Product design shall conform to “3R design” on Appendix 2.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate and at the same time, the necessary particulars shall be filled in Appendix 2.

- (18) This item is applicable only to “B. Recycled Toner Cartridge”

4-1-2 Criteria for expendable portions

- (19) As to heavy metals used on toners, cadmium, lead, mercury, chromium(VI), nickel and compounds shall not be used as prescription constituents. However, this does not apply to a high-molecular-weight nickel complex compound as a coloring agent.

[Certification Procedure]

A list indicating whether the concerned substances are added, issued by the toner supplier, shall be submitted. (Example 8)

- (20) Azo colorants (dyes or pigments) of toner that degenerate into one or more of the amines listed in Table 4 through decomposition of one or more azo compounds shall not be used (in accordance with the official test method compilation based on the German Law on Foods and Sundries Article 35).

[Certification Procedure]

A list indicating whether the concerned substances are added, issued by the toner supplier, shall be submitted. (Example 8)

Table 4 Amines that should not be degenerated during the decomposition of azo

compounds (according to EU Assembly/Council Directive 2002/61/EC)

	Substances	CAS No.
1	4-aminobiphenyl	92-67-1
2	Benzedrine	92-87-5
3	4-chloro- <i>o</i> -toluidine	95-69-2
4	2-naphthylamine	91-59-8
5	<i>o</i> -aminoazotoluene	97-56-3
6	2-amino-4-nitrotoluene	99-55-8
7	<i>p</i> -chloroaniline	106-47-8
8	2,4-diaminoanisole	615-05-4
9	4,4'-diaminodiphenylmethane	101-77-9
10	3,3'-dichlorbenzidine	91-94-1
11	3,3'-dimethoxybenzidine	119-90-4
12	3,3'-dimethylbenzidine	119-93-7
13	4,4'-diamino-3,3'-dimethyldiphenylmethane	838-88-0
14	<i>p</i> -cresidine	120-71-8
15	4,4'-Methylene-bis - (2-Chloroaniline)	101-14-4
16	4,4'-oxydianiline	101-80-4
17	4,4'-4-Aminophenyl Sulfide Bis	139-65-1
18	<i>o</i> -toluidine	95-53-4
19	2,4-diaminotoluene	95-80-7
20	2,4,5-trimethylaniline	137-17-7
21	<i>o</i> -anisidine	90-04-0
22	4-amino-azo- benzene	60-90-3

(21) Other hazardous substances related to toners shall not contain the following (“a.” to “d.”) substances as prescription constituents:

- a. The following substances which need to be labelled as “R” in accordance with Attachment I of the EC Commission Directive 67/548/EEC, which deals with the comparison of laws, regulations and administrative rules on hazardous substances classifications, packaging, and labelling in the EU.
 - R40 (Limited evidence of a carcinogenic effect)
 - R45 (May cause cancer)
 - R46 (May cause heritable damage)
 - R49 (May cause cancer by inhalation)
 - R60 (May impair fertility)
 - R61 (May cause harm to the unborn child)
 - R62 (Possible risk of impaired fertility)
 - R63 (Possible risk of unborn child)
 - R68 (May impair fertility)
- b. Substances classified as carcinogenic, mutagenic and toxic to reproduction in TRGS905
- c. Substances requiring labelling of the designated symbols on the whole product in accordance with “Attachment II of the EC Commission Directive 67/548/EEC”, which deals with the comparison of laws, regulations and

administrative rules on hazardous substances classifications, packaging, and labelling in the EU and “EC Commission Directive 1999/45/EC”, which deals with the comparison of laws, regulations and administrative rules on hazardous dispensing classifications, packaging, and labelling.

- d. Substances requiring labelling of the designated R43 warning (risk of causing inflammation in skin contact) on the whole product in accordance with Attachment III of the EC Commission Directive 67/548/EEC, which deals with the comparison of laws, regulations and administrative rules on hazardous substances classifications, packaging, and labelling in the EU.

[Certification Procedure]

A list indicating whether the concerned substances are added, issued by the toner supplier, shall be submitted. (Example 8)

- (22) Toner shall give a negative result in the Ames test.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate. And the Ames test report regarding 5 strains shall be submitted in accordance with laws on the regulations of chemical substance screening and manufacturing, etc.

The rest report shall include the following items.

- Name of the testing institute, - Name of the tested substances, - Testing period, - Used strain - Test result

- (23) Products shall be equipped with the toner MSDS (Material Safety Data Sheet).

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate. And the MSDS issued by the toner supplier shall be submitted.

4-1-3 Criteria on packaging material

- (24) Plastic materials used in packaging shall not use the specific chlorofluorocarbons (five CFCs), other CFCs, carbon tetrachloride, trichloroethane, and CFC substitutes (HCFCs), given in Table 1.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate.

- (25) Resins composed of halogens and organic halogenides shall not be added to plastic materials used in packaging as prescription constituents.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate.

- (26) Packaging materials shall conform to the “Guidelines on Compilation of Pre-Evaluation Manuals in Product Design for Promoting Use of Recycled Resources” (July 1994, Waste Treatment and Recycling Committee, Industrial Structure Council).

[Certification Procedure]

Conformance to guidelines shall be indicated. Specifically,

- a. packaging material shall be selected according to the packaging material evaluation manual compiled based on the guidelines (also submit materials that describe the contents of the manual (list of contents, etc.))
- b. names of material used shall be submitted.

- ~~(27) 包装に使用される段ボールの古紙パルプ配合率が50%以上であること。~~

~~[Certification Procedure]~~

~~段ボール包装材のメーカーの発行する証明書を提出すること。証明書には古紙パルプ配合率を明記すること。~~

4-1-4 Criteria for instruction manuals

- (27) Instruction manuals (user manuals) provided to users shall conform to the following “a.” and “b.”

- a. The binding method shall not impede waste paper recycling. However, the use of hot melt adhesives is not prohibited.
- b. No chlorine gas shall be used during the pulp bleaching process of the paper.
- ~~c. The percentage of waste paper in the pulp mixture shall be over 70%~~
- ~~d. The percentage of waste paper in the pulp mixture shall be over 30%~~

However, instruction manuals printed overseas may conform to “a”.

[Certification Procedure]

Conformance to this item shall be stated in the attached certificate.

4-2. Quality Criteria and Certification Procedure

- (28) This item is applicable only to “B. Recycled Toner Cartridge”

- (29) Quality shall be managed in accordance with in-house regulations. Quality assurance shall be provided to deal with poor print quality, jamming, toner leakage, body corruption and other poor quality conditions. Quality control shall

also be thorough in the manufacturing stage.

[Certification Procedure]

Copies of (Example 10) and appropriate product documentation on quality assurance shall be submitted. If quality assurance is provided for toner cartridges as part of the machine, a copy of manual(s) of the machine including the list of contacts, such as customer center, for trouble shooting of the equipment can be substituted. The applicant is needed to submit documents describing the method of quality assurance with product inspection data upon request of the examination committee.

Certificates and declarations issued by the manager of the plant manufacturing the product that quality control is implemented in the manufacturing stage based on in-house regulations, and that only products passing quality inspections are shipped shall be submitted. Certificates indicating that the quality control system is established shall be submitted. (Copies of certificate are acceptable if the applicant has obtained ISO 9001 or 9002.).

5. Product Classification, Labeling, etc.

- (1) Products shall be grouped by product type (original/recycled) indicated in Applicable Products and by model. However, products are not categorized by toner volume and according to the four component colors (yellow, cyan, magenta, and black) among the same color toner cartridges for color copiers.
- (2) The following environmental information shall be indicated below the mark. The location and details of the Eco Mark to be indicated shall be submitted when applying for Eco Mark product certification and use. The environmental information indicated shall consist of two lines aligned to the left and enclosed in a rectangular box. The first line shall read, "Parts shall be reused/recycled (Parts shall be reused/recycled)". The second line shall read "Recovery route established (Recovery route available)".

The following is the example:



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- (3) The Eco Mark labeling method shall be used in accordance with Eco Mark Usage Regulations Article 7 separately prescribed based on the Guidelines for Eco Mark Program Implementation.
- (4) In principle, the products to be applied shall be free of “flame retardant”, “antibacterial agent” materials and “biodegradable plastic” indication. When using these materials reasoning special circumstances, however, the products shall satisfy the provisions contained in the “Guidelines for Eco Mark Program Implementation” concerning “flame retardant”, “antibacterial agent” and “indication of biodegradable plastic”. Specifically, the use of these materials shall be described in the Application Form for Eco Mark Certification and Usage with documents stipulated in the form to be attached.

March 15, 2005	Established (Version1.0)
February 9, 2007	Revised
April 13, 2007	Revised
August 2, 2007	Revised ((3)(4) Version1.3)
February 14, 2008	Revised (Version 1.4)
March 14, 2008	Extension of Term of Validity
August 21, 2008	Revised ((1) ,(2), (12), (13), (19), (21)~(25) Version 1.5)
March 31, 2015	Term of Validity

The certification criteria of this product category will be revised as required.

Appendix 1 Corresponding table to No.132 “Toner Cartridge Version 1”, No.117 “CopierVersion 2”, No.122 “Printer Version 2”

Eco Mark No.132 Toner Cartridge Ver.1	Eco Mark No.117 Copier Ver.2	Eco Mark No.122 Printer Ver.2 (B)
4-1-1 (1)	-	-
4-1-1 (2)	-	-
4-1-1 (3)	4-1-6 (28)	4-1-6 (28)
4-1-1 (4)	4-1-6 (30)	4-1-6 (30)
4-1-1 (5)	4-1-9 (37)	4-1-8 (35)
4-1-1 (6)	4-1-5 (18)	4-1-5 (18)
4-1-1 (7)	4-1-5 (21)	4-1-5 (21)
	4-1-5 (22)	4-1-5 (22)
4-1-1 (8)	4-1-5 (23)	4-1-5 (23)
4-1-1 (9)	-	-
4-1-1 (10)	-	-
4-1-1 (11)	-	-
4-1-1 (12)	4-1-5 (26)	4-1-5 (26)
4-1-1 (13)	4-1-5 (20)	4-1-5 (20)
4-1-1 (14)	4-1-5 (19)	4-1-5 (19)
4-1-1 (15)	-	-
4-1-1 (16)	4-1-5 (27)	4-1-5 (27)
4-1-1 (17)	4-1-5 (18)	4-1-5 (18)
4-1-1 (18)	-	-
4-1-2 (19)	4-1-4 (13)	4-1-4 (13)
4-1-2 (20)	4-1-4 (14)	4-1-4 (14)
4-1-2 (21)	4-1-4 (15)	4-1-4 (15)
4-1-2 (22)	4-1-4 (16)	4-1-4 (16)
4-1-2 (23)	4-1-4 (17)	4-1-4 (17)
4-1-3 (24)	-	-
4-1-3 (25)	-	-
4-1-3 (26)	-	-
4-1-4 (27)	-	-
4-2 (28)	-	-
4-2 (29)	-	-

* In case that there is a number in the column of No.117 and/or No.122, a documentation for the Eco Mark can be omitted.

Appendix 2 4-1-1(17) 3Rdesign**Checklist for 3R Design****Items**

The checklist consists of the following three requirement groups:

- Structure and Connection Technology
- Material Selection and Marking
- Longevity

Applicable scope

The requirements apply to certain sub-assemblies of consumables:

Sub-assembly	Unit consisted of at least two components linked by power or design.
Case part	Part which protects the built-in parts from environmental effects and user from getting into contact with moving, radiating, or current-carrying components.
Electric/electronic sub-assembly	Assembly which includes at least one electric or electronic component.
Mechanical parts	Part not contained in an electric/electronic sub-assembly with either mechanical or optical function (except for case and chassis).

Category classification

Any requirements are classified as either "M" or "S".

M-Requirement	Requirements which must be met
S-Requirement	Requirements which should be met

Compliance with 3R Design

It is determined that toner cartridges comply with the 3R design requirements if they meet the items listed in the checklist.

Applicant:

Type of toner cartridge:

Seal by person responsible:

3R design checklist

"M"-requirements, which must be met

Category		Requirement	Assembly (-ies) applied to	Compliance	Remarks	Purpose	
Structure and Connection Technology	1	Components made of materials incompatible with each other are connected separably or via separation aids. Alternatively, all used materials can be sorted easily by the recycling technology.	Case parts, however, total weight > 10g	Yes / No		Promoting reuse and recycling	
Material Selection and Marking	2	Materials forming plastic components performing comparable functions are limited to a single polymer or a polymer blend. This requirement shall not apply to components that have been reused as can be proved.	Case parts, electric parts	Yes / No	'Comparable functions' refers to "crashworthiness" and "wear resistance," for example.	Promoting reuse and recycling	
	3	(a) The coating of plastic components has been limited to the minimum (e.g. name of manufacturer). Laser markings shall not be considered as paintings. This requirement shall not apply to parts that have been proved as reused parts.	Case parts,	Yes / No		Promoting reuse and recycling	
		(b) The paints which shall not prevent recycling has been used. Coating works have been conducted with considerations for occupational safety and health and reducing environmental burden.	Case parts,	Yes / No			
		If answered "Yes" either in (a) or (b), this requirement is considered as conformed					
	4	Materials and material bindings that can be utilized as material are used	Case parts, electric parts	Yes / No	'can be utilized as material' means same recycled material as starting raw material can be used (utilization at the original level). Additionally, this item is to question an intention and a purpose during designing, and does not question whether recycling is done or not.	Promoting reuse and recycling	
	5	The proportional use of recycled plastic material is permitted	Case parts,	Yes / No	'Permitted' means the use of recyclable material is permitted as long as such material meets the requirements provided in the specifications and is available. 'Proportional' means some available plastic components are appropriate. (This does not require all available components.)	Promoting reuse and recycling	
6	Plastic components have been marked according to ISO 11469:2000 (equivalent standard – JIS K6999:2004)? However, this requirement does not apply to plastic components >25g in weight and >200mm ² (flat area)	Entire unit	Yes / No		Promoting reuse and recycling		
Longevity	7	Consumable goods are provided together with information on the collection system and information on collection for users	Entire unit	Yes / No		Providing information.	
	8	Toner cartridges can be reused	Entire unit	Yes / No	'can be utilized as material' means same recycled material as starting raw material can be used (utilization at the original level). Additionally, this item is to question an intention and a purpose during designing, and does not question whether recycling is done or not.	Promoting reuse and recycling	

"S"-requirements, which should be met

Category		Requirement	Assembly (-ies) applied to	Compliance	Remarks	Purpose
Structure and Connection Technology	1	Coloring of components made from same plastic material have uniformity or compatibility.	Case parts., electric parts \geq 25g	Yes / No		Promoting reuse and recycling
Longevity	2	For color copiers, Toner of individual colors can be exchanged separately	Entire unit	Yes / No The requirement does not apply since this is a monochrome copier.		Reducing environmental burden
	3	A toner cartridge can be repeatedly recycled and reused	Entire unit	Yes / No		Promoting reuse and recycling