



Eco Mark Product Category No. 132

“Toner Cartridge Version 1.0 ”

Japan Environment Association
Eco Mark Office

1. Environmental Background

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 remanufactured 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.

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.

2. Applicable Products

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

- 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.
- Remanufactured toner cartridge: Used toner cartridges refilled with toner and whose expendable parts have been replaced as required.
- Prescription constituents: Components intentionally added with the purpose of providing specific characteristics to the product. Impurities that inevitably enter during the manufacturing process are excluded.
- Plastic: Material composed of single or multiple polymers, plus additives, fillers, etc. which are added to the polymer(s) to give specific characteristics.
- Polymer: High molecular material which is a major constituent of the plastics.
- 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.
- Pre-consumer material: Materials or rejects obtained from the waste route during the manufacturing process. However, this excludes those recycled within the same process as the raw material (same plant).
- Post-consumer material: Materials or products disposed after used as a product.
- Reused parts: Parts that have previously been used.
- 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.
- 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.

- 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.
- 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.
- 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.

4. Certification Criteria

4-1. Environmental criteria

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) The production process shall not violate for previous five years relevant environmental regulations and agreements on preventing air pollution, water contamination, noise, odor and emission of hazardous materials.
- (2) Solvents shall not use the specific chlorofluorocarbons (five CFCs), other CFCs, carbon tetrachloride, trichloroethane, and CFC substitutes (HCFCs), given in Attachment 1, in the final manufacturing stage as well as the final supply stages of products (toner cartridges) or circuit boards.
- (3) When toner cartridges are loaded in machines, the emission of dust into the atmosphere shall not exceed the density of 0.075 mg/m³ during continuous two-hour operations. Dust density shall be measured as designated in the Japan Business Machine Industry Association standards (JBMS-66) or under the test conditions prescribed in Blue Angel RAL-UZ62; 2002 Appendix 3. Furthermore, measurement under test conditions described in the Blue Angel RAL-UZ62; 2003 Appendix 4 shall be allowed, and in this case, dusts during copying operations shall not exceed the dispersion speed of 4.0mg/h.

- (4) When toner cartridges are loaded in machines, the emission of styrene into the atmosphere shall not exceed the density of 0.07mg/m³. Styrene density shall be measured as designated in the Japan Business Machine Industry Association standards (JBMS-66) or under the test conditions prescribed in Blue Angel RAL-UZ62; 2002 Appendix 5. Furthermore, measurement under test conditions described in the Blue Angel RAL-UZ62; 2003 Appendix 4 shall be allowed, and in this case, styrene during copying operations shall not exceed the dispersion speed of 1.0mg/h.
- (5) The photoreceptor of products shall not contain cadmium, lead, mercury and selenium as prescription constituents.
- (6) To ensure that products can be disassembled easily, the following points "a." to "e." shall be met. However, this applies only to replaced parts of recycled toner cartridges.
 - 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.
- (7) Systems for recovering and material recycling products shall be available. The reuse and material recycling percentage of the original and recycled toner cartridge parts recovered of the total product weight (excluding the toner) shall be over 50% and over 75%, respectively.
- (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.

- (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 “k.”) clearly:
- a. Name of the product under application
 - b. Company name of applicant (or brand name)
 - c. Contact telephone number
 - d. Product recovery method for users to return used products
 - e. Classification of recycled toner cartridge
 - f. 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 should 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
- (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.
- (11) The product shall be clearly labelled with the following:
- a. Name of the product under application
 - b. Company name of applicant (or brand name)
- (12) Plastic products shall be made of one homopolymer or copolymer. However, polymer blends (polymer alloys) can be used. If labels, markings, or stickers are not easy to separate, these shall be of the same materials as the portion on which they are pasted, or shall satisfy VDI2243:1993 Part 1,30/42(Attachment 2) 1, 2, or 3. This applies only to replaced parts of recycled toner cartridges.
- (13) Cadmium, lead, or mercury shall not be added to plastic parts as prescription constituents, except for electrical and electronic parts including wires. This applies only to replaced parts of recycled toner cartridges.
- (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. This applies only to replaced parts of recycled toner cartridges.

- (15) Plastic parts shall be marked in accordance with ISO11469, except for products that are less than 25g, parts whose smooth area is less than 200 mm², and reused plastics. This applies only to replaced parts of recycled toner cartridges.
- (16) Products shall be sealed during storage or handling to prevent leakage of toner.
- (17) Product design shall conform to “3R design” on Attachment 3. This item shall apply only to parts of recycled toner cartridges replaced.
- (18) Recycled toner cartridges shall comply with the “Recycled toner cartridge” defined in 3. Terminology.

4-1-2 Criteria for expendable portions

A. Criteria for toners

- (19) As to heavy metals used on toners, cadmium, lead, mercury and chromium(VI) and compounds shall not be used as prescription constituents.
- (20) Azo colorants (dyes or pigments) of toner that degenerate into one or more of the amines listed in Attachment 3 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).
- (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.
 - R26 (Very toxic by inhaled)
 - R27 (Very toxic in contact with skin)
 - R40 (Limited evidence of a carcinogenic effect)
 - R42 (May cause sensitisation by inhalation)
 - R45 (May cause cancer)
 - R46 (May cause heritable damage)
 - R48 (Danger of serious damage to health by prolonged exposure)
 - 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)
 - R64 (May cause harm to breastfed babies)
 - R68 (May impair fertility)

- b. Substances classified as carcinogenic (groups 1, 2A, 2B) by IARC (International Agency for Research on Cancer). Excludes carbon black.
- 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.
- 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.

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

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

4-1-3 Criteria for instruction manuals

(24) Instruction manuals shall conform to Eco Mark Product Category "Paper Printed Matter". The use of hot melt adhesives is not prohibited. If printed overseas, no chlorine gas shall be used during the pulp bleaching process and the binding method shall not impede waste paper recycling.

4-1-4 Criteria on packaging material

- (25) Packaging material shall not use the specific chlorofluorocarbons (five CFCs), other CFCs, carbon tetrachloride, trichloroethane, and CFC substitutes (HCFCs), given in Attachment 1.
- (26) Resins composed of halogens and organic halogenides shall not be added to plastic materials used in packaging as prescription constituents.
- (27) Cardboard used for packaging shall contain over 50% waste paper pulp.
- (28) 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).

4-2 Quality criteria

(29) The printing capacity of the recycled toner cartridge shall less than 90% of the original model. Use the following equations in calculations:

Number of sheets which can be printed with original cartridge: C1

$$C1 \text{ (in sheets)} = ((M1-M2)/(M1-M3)) \times 1000$$

M1: Weight of original cartridge

M2: Weight of original cartridge after use

M3: Weight of toner cartridge after printing on 1000 A4-size sheets at 5% of the effective range

Number of sheets which can be printed with a remanufactured cartridge: C2

$$C2 \text{ (Number of sheets)} = ((M4-M5)/(M4-M6)) \times 1000$$

M4: Weight of original recycled cartridge

M5: Weight of recycled cartridge after use

M6: Weight of toner cartridge after printing on 1000 A4-size sheets at 5% of the effective range

$$\text{Printing capacity percentage (\%)} = (C2/C1) \times 100$$

- (30) 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.

5. Certification Procedure

- (1) For criterion 4-1(1), a certificate by the manager of the plant manufacturing the product shall be submitted to certify that relevant local environmental laws, regulations, etc. have been observed with no violation for the last five years before the filing of the application.
- (2) For criterion 4-1(2), a certificate issued by the supervisor or plant manager of the manufacturer of the product or final circuit board supplier shall be submitted.
- (3) For criterion 4-1(3), documents and measured values certifying compliance to the measurement methods in JBMS-66 or RAL-UZ62 Annex 3 shall be submitted.
- (4) For criterion 4-1(4), documents and measured values certifying compliance to the measurement methods in JBMS-66 or RAL-UZ62 Annex 5 shall be submitted.
- (5) For criterion 4-1(5), a list indicating whether the concerned substances are added shall be submitted.
- (6) For criterion 4-1(6), a checklist on "a." to "e." shall be submitted.
- (7) For criterion 4-1(7), a certificate indicating the total product weight (excluding the toner), reuse of parts, parts, material recycling purpose, etc. shall be submitted.
- (8) For criterion 4-1(8), 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.
- (9) For criteria 4-1(9)-(11), required documents and materials such as relevant portions of instructions manuals carrying the designated information, packaging, printed materials for advertisement, URL of relevant portions of websites, photographs of relevant portions, samples, etc. shall be submitted.
- (10) For criterion 4-1(12), documents certifying conformance to this requirement and list of plastic materials used shall be submitted.
- (11) For criteria 4-1(13)-(14), it shall be clarified in parts purchase contracts, etc. that the concerned substances are not added.
- (12) For criterion 4-1(15), documents certifying conformance to the plastic marking parts list or ISO11469 shall be submitted.
- (13) For criterion 4-1(16), conformance to this item shall be indicated in the attached

certificates.

- (14) For criterion 4-1(17), conformance to this item shall be indicated in the attached certificates, and at the same time the necessary particulars shall be filled in attachment 4 "3R design" and submitted.
- (15) For criterion 4-1(18), a certificate issued by the supervisor or plant manager of the manufacturer of the product, which indicates that the used cartridge is refilled with toner and that consumables are replaced as appropriately, shall be submitted.
- (16) For criteria 4-1(19)-(21), a list indicating whether the concerned substances are added, issued by the toner supplier, shall be submitted.
- (17) For criterion 4-1(22), the Ames test report shall be submitted in accordance with laws on the regulations of chemical substance screening and manufacturing, etc.
- (18) For criterion 4-1(23), the MSDS issued by the toner supplier shall be submitted.
- (19) For criterion 4-1(24), documents describing conformance to each criterion in the Eco Mark Product Category "Paper Printed Matter" shall be submitted.
If the product is printed overseas, descriptions certifying that no chlorine gas is used during the pulp bleaching process, and that materials listed as impeding waste paper recycling are not used shall be added.
- (20) For criterion 4-1(25), a certificate issued by the supervisor or plant manager of the manufacturer of the packaging material shall be submitted.
- (21) For criterion 4-1(26), a certificate issued by the manufacturer of the packaging material consisting of a list of plastic materials used for the packaging, which clarifies whether the raw material manufacturer name, resins including halogen, and organic halogenides have been added shall be submitted.
- (22) For criterion 4-1(27), a certificate issued by the manufacturer of the cardboard packaging material shall be submitted. The certificate shall indicate the waste paper pulp content rate.
- (23) For criterion 4-1(28), 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.)); and b.) names of material used shall be submitted.
- (24) For criterion 4-2.(29), the calculated printing ability shall be indicated in the Application Form for Eco Mark Certification and Usage.

Tests shall be repeated three times or more, but the number of machines that are used in the test is not specified. The machine used for the calculation of C1 and C2 shall be the same. "After use" prescribed in M2 and M5 of 4-2 (29) means: when white lines occur due to toner shortage after the start of test, the cartridge is removed and shaken 5 and 6 times to even the toner; the test is resumed after this work; and the point when white lines occur the second time is defined as "after use". The weight of original and recycled cartridges at this point is defined as M2 and M5, respectively.

- (25) For criterion 4-2.(30), a copy of 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 admitted. The applicant is needed to submit documents describing the method of quality assurance upon request of the review 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 are acceptable if the applicant has obtained ISO 9001 or 9002.).

6. Other Requirements

- (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) In the event Eco Mark is already labeled on recycled toner cartridges, they shall be removed and replaced with the Eco Mark based on the sort of certification acquired by the applicant.
- (3) 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, “部品を再使用・再資源化する (Parts shall be reused/recycled)” for original toner cartridges defined in 3. Terminology, and “再生トナーカートリッジ (Recycled toner cartridge)” for recycled toner cartridge. For both original and recycled toner cartridges, the second line shall read “回収ルート確立 (Recovery route available)”.

The following are examples:

[Original toner cartridge]

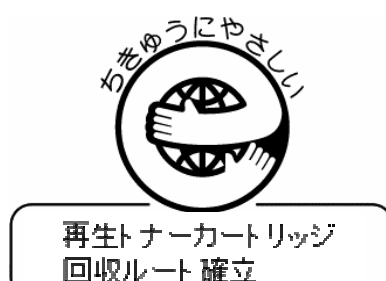


エコマーク認定番号
第〇〇〇〇〇〇〇〇号

(Indication of numbers only is allowed)

xxx Co. Ltd. (Authorized Eco-Mark user name)

[Remanufactured toner cartridge]



エコマーク認定番号
第〇〇〇〇〇〇〇〇号

(Indication of numbers only is allowed)

xxx Co. Ltd. (Authorized Eco-Mark user name)

- (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 “Eco Mark Business Execution Guideline” 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.

To be established: March 15, 2005

Term of validity: March 14, 2010

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

Attachment 1 Substances provided in 4-1-1.(2)

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

Attachment 2 VDI2243: 1993 Part 1, Part1, 30/42
Conformance of Thermal Plastics [49;67]

Base material	Important plastics design for	Additives											
		PE	PVC	PS	PC	PP	PA	POM	SAN	ABS	PBTP	PETP	PMMA

PE	1	4	4	4	1	4	4	4	4	4	4	4
PVC	4	1	4	4	4	4	4	1	2	4	4	1
PS	4	4	1	4	4	4	4	4	4	4	4	4
PC	4	3	4	1	4	4	4	1	1	1	1	1
PP	3	4	4	4	1	4	4	4	4	4	4	4
PA	4	4	3	4	4	1	4	4	4	3	3	4
POM	4	4	4	4	4	4	1	4	4	3	4	4
SAN	4	1	4	1	4	4	4	1	1	4	4	1
ABS	4	2	4	1	4	4	3	4	1	3	3	1
PBTP	4	4	4	1	4	3	4	4	3	1	4	4
PETP	4	4	3	1	4	3	4	4	3	4	1	4
PMMA	4	1	3	1	4	4	3	1	1	4	4	1

1: Suitable

2: Suitable in restricted use

3: Suitable if used in small amounts

4: Not suitable

Attachment 4 4-1-2.(20) Amines that should not be degenerated during the decomposition of azo compounds

	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

Interpretation

“Toner Cartridge Version 1.0”

Established: March 15, 2005

1. Environmental Background

The toner cartridge production volume is estimated by the Inter Watch Corporation survey.

The Asia Four Label Common core criteria were developed for implementing partial mutual recognition between Korea's Eco Label, Thailand's Green Label, Taiwan's Green Mark, and Japan's Eco Mark with the aim of deepening cooperation between the Eco Labelling Programs of Asian countries. When products certified by any of these labels apply for Eco Mark certification, they are considered to meet basic criteria corresponding to the Common Core Criteria and need not submit certification documents for such criteria. Depending on the requirements of each respective country, submission of certification documents and screening are required for other criteria as done in normal applications.

2. Applicable Products

The toner cartridge is composed mainly of toner container, development unit, and drum. It consists of four types: (1) integrated cartridge composed of all of these parts, (2) separate drum unit and cartridge which consists of toner container and development unit, (3) toner cartridge integrating the development unit and drum, in which only the toner container can be replaced, and (4) separate development unit and cartridge which consists of toner container and drum. This fourth type is currently not commercialized but has the potential of being introduced into other markets. The life cycles of the toner container, development unit, and drum differ; depending on the architecture of the machine body, all four types were taken up in this category to give as many options as possible. This product category excludes the single toner container, development unit, and drum body. However, depending on the product design of copiers and printers in the future, the inclusion of these single units will be reviewed if they alone may contribute to the reduction of environmental impact.

3. Terminology

Toner cartridges were divided into original and remanufactured toner cartridges in devising the certification criteria of this product category. In addition to these two types, the Asia Four Label Common Core Criteria also prescribe the refillable toner cartridge, which allows refilling of the toner and replacement of only malfunctioning

and worn out parts. This type was not included in the Eco Mark program considering that production volume is still low in Japan and the unique environmental impact of this type of toner cartridge.

Terminology related to plastics is excerpted from Eco Mark product criteria No.118 “Plastic Products Using Recycled Materials”, and those related to paper from No.107 “Printing Paper”.

4. Certification Criteria

4-1. Details of establishing environmental criteria

Chart for selecting environmental impact items at each stage of product life cycle was utilized in establishing these criteria, and after considering, from the standpoint of the environment, the environmental impact for the product lifecycle as a whole, impact items were selected which were thought to be important when establishing the certification criteria, and qualitative and quantitative criteria were set for those items.

Environmental impact items considered for the category of “Toner Cartridge” are as shown in Table 1: Chart for Selecting Environmental Impact at Each Stage of Product Life Cycle (X and XX in the table). Out of these items were finally selected as the environmental criteria: B-3, B-5, B-6, B-8, B-9, C-1, C-3, C-8, D-8, D-9, E-7, E-8 and F-1(items marked by XX in the chart).

The blank columns are either not subject to the review or were reviewed in conjunction with other items. A detailed description of how the environmental criteria were prepared is provided below.

Table: Chart for Selecting Environmental Impact Items at Each Stage of Product Life Cycle

Environmental Impact Item	Product Life Stage					
	A. Resource extraction	B. Manu- facturing	C. Distri- bution	D. Use/Con- sumption	E. Disposal	F. Recycling
1.Resource consumption	X		XX			XX
2.Discharge of greenhouse gases						
3.Discharge of the ozone layer depleting substances		XX	XX			
4. Impact on eco systems						
5.Discharge of atmospheric pollutants		XX				
6.Discharge of water pollutants		XX				
7. Generation/disposal of wastes					XX	
8.Use/discharge of hazardous materials, etc.		XX	XX	XX	XX	
9.Other environmental impacts		XX		XX		X

A. Resource Extraction Stage

A-1 Resource consumption

The following point was reviewed under this item:

(1) Usage rate of recycled materials and reused parts

The usage rate of recycled materials and reused parts is prescribed in overseas Eco labels such as Scandinavia's Nordic Swan. The inclusion of this item in this product category was reviewed because it can help promote use of recycled materials, and contribute to reducing resource consumption. Questions such as the difficulty of defining usage rate and recycled material usability depending on the design of each product were raised, however. In addition, there was the opinion that selecting this item as a criterion may contradict efforts to reduce environmental impact considering the fact that toner cartridges are not being recovered adequately. Some printers are manufactured by importing recycled materials from overseas because recycled materials (including reused parts) cannot be secured adequately by recovery systems. As a result of review, though promoting the use of recycled materials can serve as a means of reducing waste, it was decided that the reuse and recycling rate of toner cartridges after recovery would be determined by first recognizing the importance of recycling in areas other than the toner cartridge, and the steady reduction of waste originating from used toner cartridges. Regarding recycling methods such as energy recovery, conversion to oil, gasification, blast furnace reduction, and conversion to chemical materials by coke oven, the establishment of similar criteria is also expected to reduce the final waste volume.

Of the used "toner cartridge collected" defined in Terminology, intermixed foreign particles (substances other than toner cartridges, other brands of toner cartridges not subject to recycling, illegally remodeled products, etc.) can be excluded from the calculation of the reuse/material recycling and recovery rates. As packaging materials such as cardboard boxes holding the toner cartridges are not toner cartridges, they shall be excluded from the calculation of reuse/material recycling rate and recovery rate at the time of collection.

"Total percentage weight of parts 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" and "total percentage weight of parts that are reused and material recycled" shall be the quantity recovered by the manufacturer or the first recovery business to which used products were given to. Essentially, this should be the quantity recovered after having removed residuals in the resource recovery process; however, this was not adopted considering that it is often difficult to evaluate use in the final stage due to the many resource recovery services involved up to that stage. For plastics, the percentage of reuse, material recycling, and resource recovery processing shall be clarified in certificates.

The inclusion of toner cartridges is permitted as a subject in reuse, material

recycling, and resource recovery processes by the applicant, related businesses of the applicant, and businesses working with these parties.

As reference values, over 50% for reuse and material recycling rate of new toner cartridges, over 75% for recycled toner cartridges, and over 95% for recovery rate were set, referring to the WEEE standards in Europe, overseas eco labelling, and the efforts of businesses in related industries.

Although the reuse/material recycling rate should be preferably set at 75% in the Draft Certification Criteria, it was set as 50% for new toner cartridges, considering that this is an extreme hurdle and unattainable for new toner cartridge manufacturers. However, it was decided that without waiting for the complete review scheduled in five years' time, requirements will be reviewed again based on the reuse/material recycling performance of new toner cartridge manufacturers, standard values will be gradually raised, and the use of the hard-to-recycle high furnace reducing agents will be reconsidered. The figure adopted in the draft certification criteria for recycled toner cartridges of 75% was continued from the viewpoint that this is the minimum requirement possible for limiting recycled products to refillable types that do not need parts replacement, and for excluding products with the risk of causing quality related problems.

B Manufacturing Stage

B-3 Discharge of ozone layer depleting substances

The following point was reviewed under this item:

(1) Use of ozone layer depleting substances in the manufacturing stage

The Asia Four Label Common Core Criteria prohibit the use of CFCs and organic chlorine compounds in the cleaning process of remanufactured toner cartridges. However, the Eco Mark gives importance to the proper handling of ozone layer depleting substances irrespective of original or remanufactured products, not only in the cleaning process but in all manufacturing processes, and has applied this criterion to all products and all manufacturing processes. The ozone layer depleting substances prohibited in this criterion are CFCs, HCFCs, 1,1,1-trichloroethane, carbon tetrachloride as prescribed in the Montreal Protocol in consideration of consistency with Eco Mark Product Category No. 117 "Copier". Circuit boards are products supplied to toner cartridge manufacturers, and indicate the state of mounting ICs, etc.

B-5 Discharge of atmospheric pollutants

The following point was reviewed under this item:

(1) Air pollution must be appropriately managed.

For air pollutants emitted during the manufacturing process, since it was determined that environmental impacts can be adequately reduced by strictly

adhering to agreements concerning pollution control and other related environmental regulations, this item was included in the list of items that require the establishment of criteria.

B-6 Discharge of water pollutants

The following point was reviewed under this item:

(1) Wastewater must be appropriately managed.

For water pollutants discharged during the manufacturing process, since it was determined that environmental impacts can be adequately reduced by strictly adhering to agreements concerning pollution control and other related environmental regulations, this item was included in the list of items that require the establishment of criteria.

B-8 Use/discharge of hazardous materials, etc

The following points were reviewed under this item:

(1) Hazardous materials (2) Use of ECF pulp in instruction manuals

For (1), the hazardous materials excreted during the manufacturing process, since it was determined that environmental impacts can be adequately reduced by strictly adhering to agreements concerning pollution control and other related environmental regulations, this item was included in the list of items that require the establishment of criteria.

For (2), instruction manuals were reviewed from the viewpoint of consistency between different product categories since they are undertaken in No.120 “Paper Printed Matters”, particularly focusing on ECF (elemental chlorine free) pulp. In No.120 “Paper Printed Matters”, the paper used must meet the criteria of No.107 “Printing Paper” and the use of ECF pulp is required. In Japan, the use of ECF pulp has been promoted as a result efforts by the paper manufacturing industry, with a target deadline of the end of F2004. According to a survey by AET (The Alliance for Environmental Technology), the international organization of chemical vendors engaged in reducing environmental impact related to paper and pulp manufacturing, even in South East Asia where many of the instruction manuals are manufactured, ECF pulp is reported to account for about 2/3 of bleached chemical pulp production volume. This indicates that ECF pulp can be obtained in the manufacture of instruction manuals. It was also concluded that criteria on ink, waste paper content in the pulp mixture, etc. in No.107 “Printing Paper” can be established, and that the criteria on “paper printed matters” should be met.

However, regarding the waste to pulp ratio, because no social systems for recovering waste paper in China and South-East Asia exist, some instruction manuals for Product Category “No. 122 Printers” are actually produced by exporting waste paper from Japan. Concern that the establishment of similar criteria in the

certification criteria of toner cartridges may contradict efforts to reduce environmental impact has been voiced. As a result of reviews, it was concluded that although the mixture of waste paper with pulp may be possible in Europe, it is not ideal to implement differentiation only in specific foreign countries; and consequently decided that circumstances shall be verified in future reviews of certification criteria of Product Category No.107 "Printing Paper" and trends of overseas, and the use of waste paper shall not be prescribed for instruction manuals printed overseas.

B-9 Other environmental impacts

The following points were reviewed under this item:

- | |
|--|
| (1) Noises and offensive odors shall be appropriately managed.
(2) Complaint rate |
|--|

For (1), since noises and offensive odors was determined that environmental impacts can be adequately reduced by strictly adhering to agreements concerning pollution control and other related environmental regulations, this item was included in the list of items that require the establishment of criteria.

(2) was reviewed from the aspect of quality verification of remanufactured toner cartridges. JIS standards on toner cartridges available include JIS X6930 "Information technology -- Office equipment -- Measurement of image quality attributes for hardcopy output -- Binary monochrome text and graphic images". The quality prescribed by this standard pertains to the definition of picture quality attributes, such as the brightness of images and line width, and the method of checking the compliance of measuring systems, and does not prescribe the quality that must be satisfied by images obtained in copies. For this reason, the amount of complaints (rate) was given as an alternative method for checking the toner cartridge quality. Eventually, it was decided that complaints shall not be taken up in this certification criterion due to the following reasons: the definition of complaints related to this product and complaints themselves are very likely to be unrelated to quality; the basis for complaints differ by user; response to and the handling of complaints is important and complaints cannot be evaluated based only on figures; and the complaint rate cannot be reported in initial certification. It was also decided that printing performance shall be verified as a quality criterion, and efforts shall be made to enhance reliability of remanufactured toner cartridges by eliminating inferior quality goods.

C Distribution Stage

C-1 Resource consumption

The following points were reviewed under this item:

- | |
|--|
| (1) Waste paper percentage in the pulp mixture of cardboard for packaging
(2) Guidelines on compilation of pre-assessment manuals in product design for promoting use of recycled resources |
|--|

For (1), waste paper content shall follow the level prescribed by the Common Core Criteria, which is over 50%.

(2) is also prescribed in Product Category No.122 “Printers”, and was selected as a criterion from the viewpoint of ensuring consistency among criteria.

C-3 Discharge of the ozone layer depleting substances

The following point was reviewed under this item:

(1) Use of ozone depleting substances in packaging material manufacturing stage

The Asia Four Label Common Core Criteria prohibit the use of CFCs and HCFCs in packaging materials. As the Eco Mark program also places importance on giving consideration to ozone depleting substances during the manufacture of packaging materials, this item was selected as a criterion. Ozone depleting substances taken up in the criteria follow those prescribed in the Montreal protocol for consistency with Product Category No.117 “Copier”.

C-8 Use/discharge of hazardous materials, etc

The following point was reviewed under this item:

(1) Use of halogens and organic halogenides in plastic packaging material

(1) was selected as a criterion from the viewpoint of reducing harmful substances during disposal.

D Use and Consumption Stage

D-8 Use/discharge of hazardous materials, etc

The following points were reviewed under this item:

(1) Discharge of styrene and dust during mounting to machine body
(2) Emission of volatile organic compounds during mounting to machine body
(3) Heavy metals contained in toners, azo pigments, and other harmful substances
(4) Ames test
(5) MSDS of toners

(1) was reviewed due to the fact that restriction of discharged volume is selected as a criterion in Eco Mark Product Categories No.117 “Copier” and No.122 “Printers”. In this respect, there were comments that some remanufactured toner cartridge products can be used on multiple types of machines, and it would be very costly to prepare all these machines to measure the discharged volume during mounting. As a result of discussion, it was decided that there is a need to reduce styrene and dust discharged from toner cartridges by prescribing standards. Consequently, this item

was selected as a criterion. Considering the influence of the machine body on the discharge amount, it was pointed out that there is a need to promote consistency with related product categories such as copiers and printers when reviewing these product categories.

Regarding the test method, taking into account the possible burden on manufacturers, it was verified that the implementation of tests based on the requirements of JBMS-66 should not pose as an obstacle to small- and medium-sized manufacturers in terms of size of the chamber, etc. and this item was thus selected as a criterion. The German Eco Labelling scheme “Blue Angel” has changed the test method since the October 2003 edition of its Copier Certification Criteria. Accordingly, it was concluded during the review of this Eco Mark Product Category that there is a need to change the test method in the next review.

For (2), the October 2003 edition of the Blue Angel Copier Certification Criteria sets this item as criteria related to the emission of volatile organic compounds (VOCs) during the standby phase prior to the start of copying and VOCs during the copying process. Efforts are currently being made to reduce VOCs for various products as well, leading to the reinforcement of reduction efforts in the copier industry. Considering that test laboratories are currently being constructed in Japan as part of these efforts, it was decided during this review that efforts will be made to gather the required information and that this item shall be taken up in the next review. Consequently, this item was not selected as a criterion.

For (3), the Common Core Criteria and Eco Mark Product Categories No.117 “Copier” and No.122 “Printers” prescribe that these substances shall not be added, and this requirement was conformed to in this Product Category as well.

(4) was reviewed due to the fact that the German Blue Angel requires toners to undergo the Ames test in its copier and toner cartridge product categories. The Ames test is designed to screen the carcinogenic level of toners, and is implemented commonly by toner manufacturers. The prescreening by some of these manufacturers using two bacteria to determine carcinogenicity was discussed during this review. Considering that screening using five types of bacteria is prescribed by the OECD guidelines, and law on the screening and manufacture of chemical substances, etc., it was decided that the criteria in this product category shall also conform to OECD guidelines, etc., and indication of conformance to the Guidelines shall be required in certificates.

For (5), the use of an MSDS as an incentive for identifying harmful substances contained and reducing the amount of toner used was reviewed. In Asian countries, MSDS is not established as a law, and though it is also not adopted as a criterion in the Asian Four Label Common Core, this item was selected as a criterion in this product category to promote the spread of MSDS in the future.

D-9 Other environmental impacts

The following point was reviewed under this item:

(1) Information for users

This item was reviewed from the perspective of educating users on proper use, promoting product recovery by the provision of information on recovery, and clarifying the responsibilities of manufacturers related to the manufacture of Eco Mark certified products, etc. It is important to clarify where responsibility lies and supply information on recovery methods and inform users of whom to contact in order to promote used product recovery. In the recovery of products, users generally refer to information labeled on products themselves. The labeling of the product name and company name of the Eco Mark applicant was therefore selected as a certification criterion. Such information also needs to be included in instruction manuals and on packaging material. Furthermore, the contact address and recovery method shall be indicated, and the indication of “recycled products” shall be given to avoid confusion between original and remanufactured products.

Though it is important to provide information on usage and after-sales services from the viewpoint of promoting the appropriate use of products, such information is difficult to label on the products themselves due to restricted space. It was therefore decided that information shall be labeled on the packaging or included in instruction manuals. Information on compatible machines and models is required at the time of purchase, and shall be provided on the product packaging, in printed pamphlets for advertisement, and on the website. In addition, since the provision of information on compatible machines and models may increase wastes and costs if regulations are too strict, it was decided that only details as to how to acquire information on the latest compatible machines and models should be provided. Regarding the provision of information on packaging, in printed pamphlets for advertisement, and on the website, the Screening Committee can verify appropriateness when applying for Eco Mark certification and use. This item was selected as a criterion.

E. Disposal Stage

E-7 Generation/disposal of wastes

The following point was reviewed under this item:

(1) Disposal of parts which cannot be reused and recycled

Some parts of recovered used products are not reusable due to severe wear. Though it is strongly desired that such parts should be recycled, those which are difficult to recycle should be reused as resources including energy recovery. If these parts are difficult to reuse as resources, it is important that they be subject to appropriate processing and disposal using eco-friendly methods in order to reduce environmental impact from wastes. As described in A-1, this item was thus selected as a criterion.

E-8 Use/discharge of hazardous materials, etc

The following points were reviewed under this item:

- | |
|--|
| (1) Heavy metals used for photoreceptors
(2) Additives for plastics |
|--|

As (1) is set down as a criterion in the Asia Four Label Common Core Criteria and Eco Mark Product Category No.122 “Printers”, etc., it was also selected as a criterion in this product category.

(2) is prescribed as a criterion applicable to original products only in the Asia Four Label Common Core Criteria. In this product category, deeming it necessary to promote the reduction of environmental impact for replaced parts even if they are recycled, the scope of application was extended to original and recycled replacement parts.

F. Recycling Stage

F-1 Consumption of resources

The following points were reviewed under this item:

- | |
|--|
| (1) Recovery and recycling systems
(2) Recovery rate of products
(3) Material restrictions of plastics
(4) Material labeling of plastics
(5) Ease of disassembly |
|--|

As (1) is set down as a criterion in the Asia Four Label Common Core Criteria and Eco Mark Product Category No.117 “Copier”, etc., it was also selected as a criterion in this product category as described in A-1.

For (2), to prompt efforts to promote the recovery of toner cartridges by manufacturers, criteria on recovery rate were proposed. Regarding the problem of recovery rate, there was the opinion that this issue is related to the procurement of recycled materials for raw materials. It is important for manufacturers to establish recovery systems such as installation of recovery boxes, and as described in (1) above, this item was therefore selected as a criterion. However, since it should be left to users to decide the recovery vendor of used products, this item was not selected as a criterion.

For (3), it is important to standardize materials as much as possible in promoting the recycling of plastics. As this item is set down as a criterion in the Asia Four Label Common Core Criteria, it was also selected as a criterion in this product category. Regarding labels, marking, stickers, etc., plastics conforming to the parts on which they are pasted shall also be allowed. Conformity between plastics shall conform to VDI2243:1993 Part 1, 30/42. VDI2243 was revised in 2000, and this new version does not carry the table on plastic conformity carried in the 1993 version. Table 2 is an excerpt of this table in the 1993 version. The Asia Four Label Common Core Criteria limits the scope of applicable products to original products, while in this product category, deeming it necessary to promote reduction of environmental impact for

replaced parts even if they are recycled, the scope of application was extended to new and recycled replacement parts.

For (4), considering it important to indicate the materials used for the recycling of plastics, and since this item is also set down as a criterion in the Asia Four Label Common Core Criteria, it was also selected as a criterion in this product category. While the Common Core Criteria limits the scope of applicable products to original products, like (3), scope of application for this item has been extended to original and recycled replacement parts.

For (5), which is set down as a criterion in the Common Core Criteria, was reviewed considering the importance of giving consideration to ease of disassembly for reuse and recycling. There was the opinion that voicing the difficulty of certifying ease of disassembly and current designs by manufacturers of authentic products does not impede recovery and reuse efforts. Regarding IC chips, though some types will cause recycling difficulty when mounted, they are designed for use for quality maintenance such as toner remainder management, etc. and do not necessarily impede reuse and recycling. In this product category, this item was selected as a criterion to prohibit programs aimed at disabling the use of toner cartridges that have been refilled with toner.

F-9 Other environmental impacts

The following points were reviewed under this item:

- | |
|---|
| <ul style="list-style-type: none">(1) Display number of times recycling has been performed(2) Provision of information on recycling by manufacturers of authentic products(3) Rejection of after-sales services for remanufactured toner cartridges |
|---|

For (1), the need to display the number of times recycling has been performed as information on remanufactured toner cartridge was reviewed. However, considering that toner cartridges may be recovered by vendors other than the manufacturer in some cases, that it is difficult to accurately determine the number of times this has been performed, and that recycle toner cartridge manufacturers do not take into consideration the number of times recycled to determine whether the reuse of parts is possible, this item was not selected as a criterion.

(2) was also not selected as a criterion because the provision of such information depends on the machine body such as copiers to a great extent, rather than toner cartridge manufacturers; and because the provision of information depends largely on the architecture of manufacturers, thus certification is difficult.

(3) was also not selected as a criterion for reasons that it concerns the manufacturers of the machine body such as copiers and suppliers to consumers, and not the manufacturers of toner cartridges.

4-2. Details of quality criteria

Quality was reviewed from the perspectives of how to treat products with performance problems as a result of being marketed at low prices due to low quality, and from concerns over adverse effects of use of remanufactured toner cartridges on

machine bodies such as copiers, etc., and defects such as soiling by printing ink.

The improvement of printing ability of remanufactured toner cartridges is expected to improve the quality of the remanufactured toner cartridges themselves, as well as contribute to reducing resource consumption. Quality criteria available on printing ability are limited to ISO13660 and criteria for specific evaluation are still in the development stage. On the other hand, an example of available criteria on toner cartridge lifespan measuring methods is ISO19752, but application to remanufactured toner cartridges incurs great costs, and is an issue that needs to be reviewed by related businesses. It was decided that criteria on quality shall be reviewed at the point they have been established and spread in the related industries, and in the meantime, this item shall conform to items prescribed in the Common core criteria.

Attached Certificate

Date:

(Company seal)

(Company name)

Eco Mark Product
Category No. 132
"Toner Cartridge"

Brand name: _____

<Preparing Attached Certificates>

1. Indicate details of the product under application for certification in "Fill in this Column."

Shaded areas in "Fill in this Column" do not require entry.

2. Prepare yourself or have other interests prepare the certificates specified in "Documents to be Submitted." Submit these certificates with this document when applying for Eco Mark Product certification or use.

3. Prepare certificates referring to the examples provided.

4. The issuer(s) in the "Issued by" column must prepare "Documents to be Submitted."

Item	Documents to be Submitted	Issued by
Article 3 of Usage Regulations Display of intended location of Eco Mark, display of environmental information below mark	Design drawing to be provided (Format free, text)	Applicant
Article 7 of Usage Regulations Display of Eco Mark user name and address (telephone number), display of certification number	Design drawing to be provided (Format free, text)	Applicant

Item	Fill in this Column	Documents to be Submitted	Issued by
Product classification	< > Toner containers + photo development units < > Toner containers + drums < > Toner containers + photo development units+drums < > Photo development units + drums (Toner container set) (Select where appropriate)	Pamphlets, etc.	Applicant
Product types	< > New toner cartridge < > Recycled toner cartridge (Select where appropriate)	Pamphlets, etc.	Applicant

<p>Manufacturer of product</p>	<p>< > Own company < > Other companies (Select where appropriate)</p>	<p>If developed by other companies, attach Application Consent Form (Example 1)</p>	<p>Manufacturer</p>
<p>List of manufacturers</p>	<p style="background-color: #cccccc;"></p>	<p>List of manufacturers (Example 2)</p>	<p>Applicant</p>

4-1-1.Common criteria for environment

Item	Fill in this Column	Documents to be Submitted	Issued by
4-1.(1) Environmental laws and regulations		Certificate (Example 3)	Finished product plant manager
4-1.(2) Use of 5 CFCs		Certificate (Example 4)	Supervisor or plant manager of the manufacturer of the product or final circuit board supplier
4-1.(3) Emissions of dusts	< > Japan Business Machine Industry Association standards (JBMS-66) < > Blue Angel (RAL-UZ62;2002)	Certificate (Example 5)	Applicant
4-1.(4) Emissions of styrene	< > Japan Business Machine Industry Association standards (JBMS-66) < > Blue Angel (RAL-UZ62;2002)	Certificate (Example 5)	Applicant
4-1.(5) Heavy metals of photo sensor	Cadmium compounds < > Yes/< > No Lead compounds < > Yes/< > No Mercury compounds < > Yes/< > No Selenium compounds < > Yes/< > No	These documents	Applicant

<p>4-1.(6) Products can be disassembled easily</p>	<p>a. Modules making up products shall be easy to disassemble < > Applicable/< > Not applicable</p> <p>b. Sufficient space is sets aside for inserting tools into fixed parts and removable parts. < > Applicable/< > Not applicable</p> <p>c. The joined parts of different materials shall be easy to find. < > Applicable/< > Not applicable</p> <p>d. Different materials are not joined by unseparatable methods such as adhesives and welding. < > Applicable/< > Not applicable</p> <p>e. IC chips and other devices, which impeded disassembly and reuse, are not used. < > Applicable/< > Not applicable</p>	<p>These documents</p>	<p>Applicant</p>
<p>4-1.(7) Systems for recovering and material recycling products, percentage of reuse and material recycling</p>		<p>Certificate (Example 6)</p>	<p>Applicant</p>
<p>4-1.(8) Recycling percentage of recovered parts</p>		<p>Certificate (Example 6) Documents to describe <u>the collection system, capacity, details of recycling</u></p>	<p>Applicant</p>
<p>4-1.(9) Information stated on the instruction manual or packaging</p>	<p><Items to confirm> < > Name of the product under application < > Company name of applicant < > Contact telephone number < > Product recovery method for users to return used products < > Classification of recycled toner cartridge < > Correct use of product < > Information on after-sales service for users</p>	<p>Instruction manuals carrying the designated information, packaging, printed materials for advertisement, URL of relevant portions of websites, photographs of relevant portions, samples, etc. shall be submitted</p>	<p>Applicant</p>

4-1.(10) Appropriate information given to packaging, pamphlets, web site	<p>< > Information on applicable machines and models is clearly provided</p> <p>< > Information on how users can acquire the latest information on applicable machines and models is provided.</p>	Instruction manuals carrying the designated information, packaging, printed materials for advertisement, URL of relevant portions of websites, photographs of relevant portions, samples, etc. shall be submitted	Applicant
4-1.(11) Information stated on the product itself	<p>< > Name of the product under application</p> <p>< > Company name of applicant</p>	Instruction manuals carrying the designated information, packaging, printed materials for advertisement, URL of relevant portions of websites, photographs of relevant portions, samples, etc. shall be submitted	Applicant
4-1.(12) Plastic parts		Use <u>Example 7</u> to prove compliance.	Plastic manufacturer
4-1.(13) Additives used for plastic		If the parts purchase agreement do not include appropriate items, use <u>Example 8</u> to prove compliance.	Plastic manufacturer
4-1.(14) Flame retardants used for plastic		If the parts purchase agreement do not include appropriate items, use <u>Example 8</u> to prove compliance.	Plastic manufacturer
4-1.(15) Marking on plastic		(Example 9)	Applicant
4-1.(16) Recycled toner cartridges		Certificate indicating correspondence with the "Recycled toner cartridge"	Supervisor or plant manager of the manufacturer of the product

4-1-2.Criteria for expendable product

Item	Fill in this Column	Documents to be Submitted	Issued by
4-1-2.(17) Heavy metals used on toner		Certificate (Example 10)	Toner supplier
4-1-2.(18) Azo dyes which may produce amines on toner		Certificate (Example 11)	Toner supplier
4-1-2.(19) Hazardous substances related to toners		Certificate (Example 10)	Toner supplier
4-1-2.(20) Ames test		Report of Ames test shall be submitted	Applicant or third party
4-1-2.(21) Toner MSDS		MSDS (Material Safety Data Sheet) shall be submitted	Applicant

4-13.Criteria for instruction manual

Item	Fill in this Column	Documents to be Submitted	Issued by
4-13.(22) Instruction manual		Documents certifying compliance with the Eco Mark Product Category No.120 "Paper Printed Matter"(Example 12)	Applicant

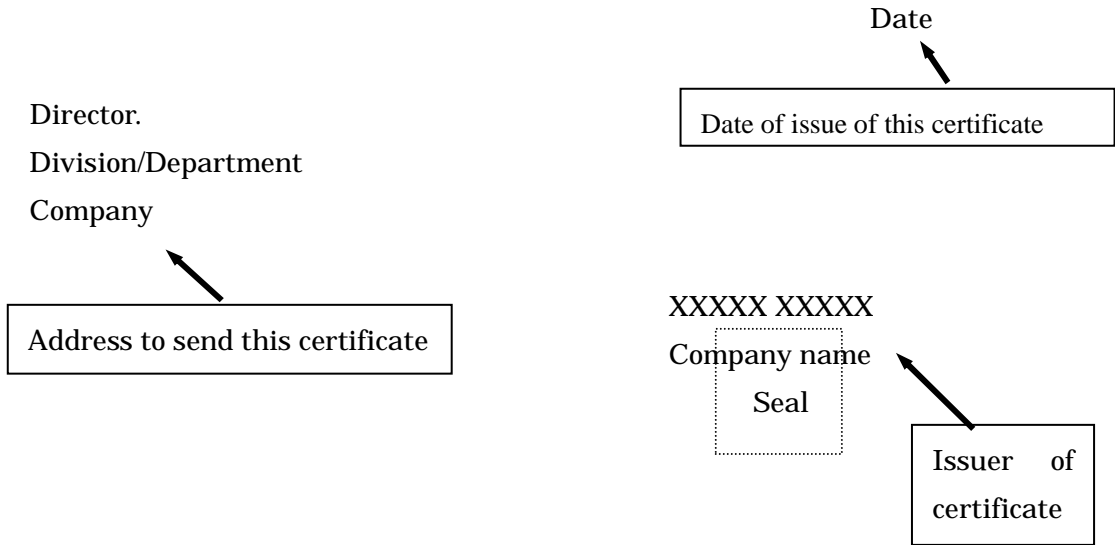
4-1-4.Criteria for packaging material

Item	Fill in this Column	Documents to be Submitted	Issued by
4-1-4.(23) use of the specific chlorofluorocarbons (5 CFCs) in packaging material		Certificate (Example 13)	Packaging material manufacturer
4-1-4.(24) Packaging plastic material using polymer containing halogen		Certificate (Example 13)	Packaging material manufacturer
4-1-4.(25) Waste paper pulp percentage of cardboard used for packaging		Certificate (Example 14)	Packaging material manufacturer
4-1-2.(26) Manual focusing on eco-friendliness of packaging materials	<p>< > Name of packaging material shall be submitted according to the examination manual developed based on the guidelines (Document(s) indicating details of the manual is necessary)</p> <p>< > Submit using packaging material name</p>	Certificate to conform 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) shall be submitted	Applicant

4-2 Quality criteria

Item	Fill in this Column	Documents to be Submitted	Issued by
4-2.(27) Printing capacity		Certificate which describes the printing capacity of the recycled toner cartridge shall be over 90% of the new model (Example 15)	Applicant
4-2.(28) Quality control		Certificate of the system for quality control and quality inspection	Product plant manager
4-2.(29) Support system for malfunction		A copy of attachments to the product	Applicant

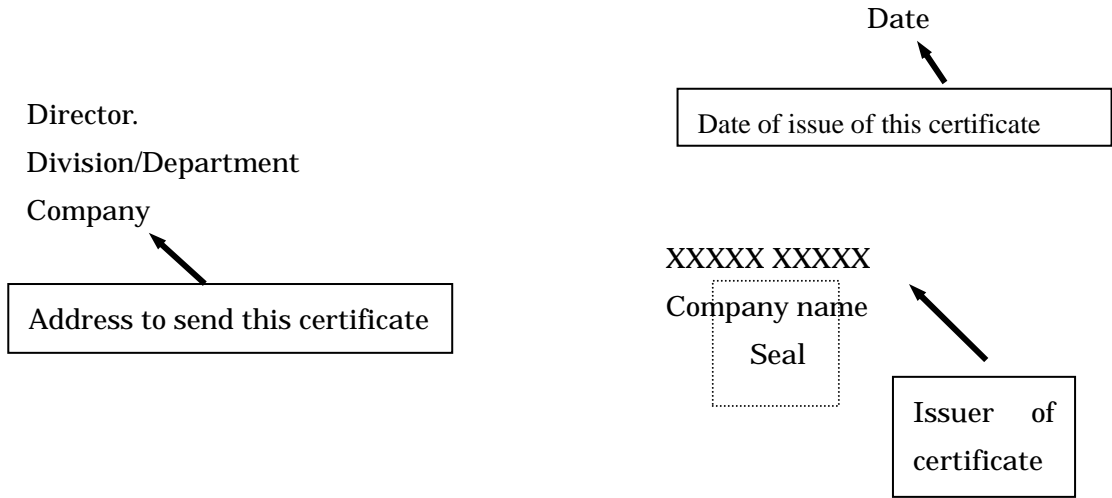
Example 1



Approval of Eco Mark Use Application

This is to consent to the application for Eco Mark certification and use of XXX (your company name) (Eco Mark certified) brand name XXXX (certification no. XX) by XXX (applicant) as brand name XXX

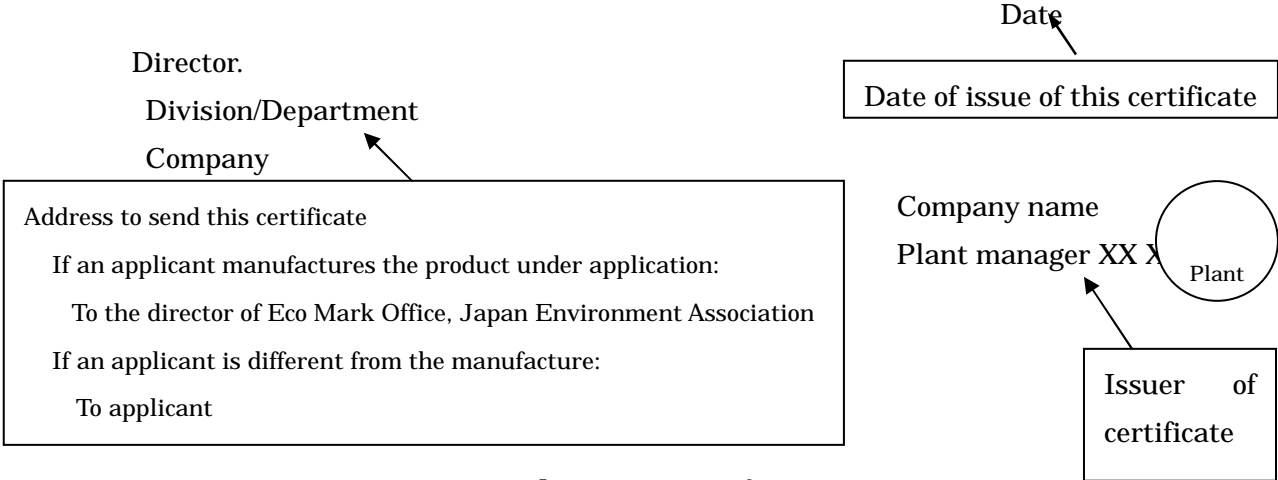
Example 2



<List of Manufacturers>

Circuit board supplier	
Toner supplier	
Plastic parts-manufacturer	
Packaging material manufacturer	

Example 3



Compliance Certificate

This is to certify that (the finished product manufacturer) has been observing the following requirements in the manufacturing of the (product under application for Eco Mark certification)

1. The production process has been conforming to relevant environmental laws and regulations and agreements on pollution control for preventing air pollution, water contamination, noise, vibration, odor, and emission of hazardous materials in the past XX years (*) since application.

Example of relevant regulations:

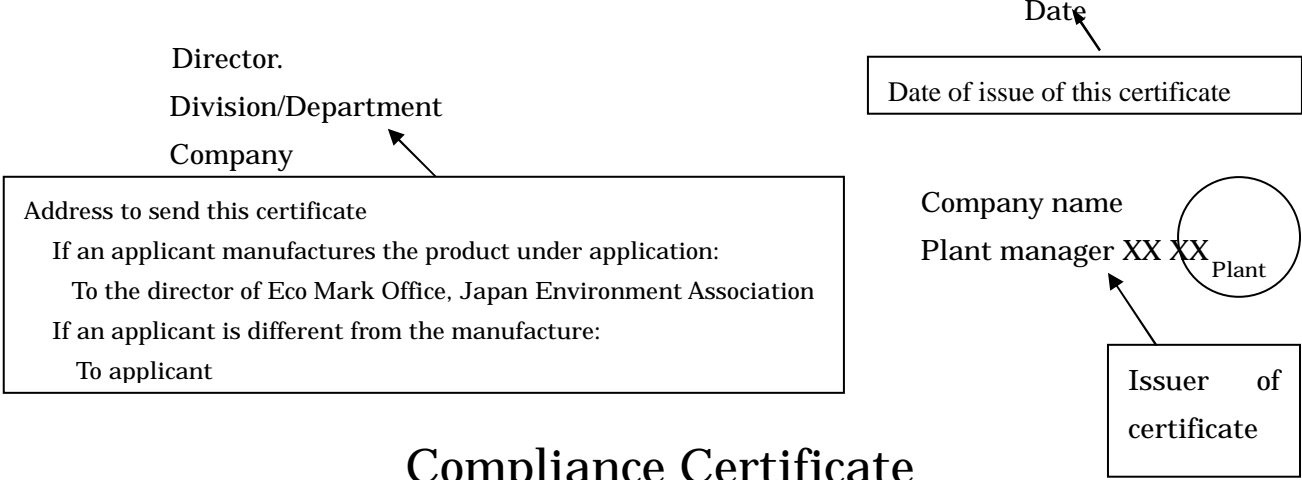
- Air Pollution Control law
 - Water Pollution Control law
 - Noise Regulation Law
 - Vibration Regulation Law
 - Offensive Odor Control Law
 - XX Prefecture XX Environment Protection Ordinance
 - XX City Agreement on Pollution Control
- } The plant shall specify the applicable laws and agreements.
- } Ordinances or agreements shall be specified if any is effective in the local community in which the plant

2. Laws and regulations on chemical management such as Poisonous and Deleterious Substances Law and the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances have been observed in the past XX years (*) since application.

(*) Otherwise, provide a statement indicating no laws and agreements have been violated since the establishment of the company.

Indicate that the issuer is the plant manager or someone in an executive position equivalent to plant manager.

Example 4



Compliance Certificate

This is to certify specified chlorofluorocarbons (5 CFCs) and other CFCs, carbon tetrachloride, trichloroethane, and substitute CFCs (HCFCs) listed in the following table are not used in the manufacturing of *(name of the product under application)*.

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

Indicate that the issuer is the plant manager or someone in an executive position equivalent to plant manager.

Example 5

Director.
Division/Department
Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of
certificate

Discharge of dust and styrene when toner cartridges are loaded in machines

	Standard	Observed value	Compliance
Emissions of dust	<0.075 mg/m ³	mg/m ³	
Emissions of styrene	<0.07 mg/m ³	mg/m ³	

<Test method>

< > Japan Business Machine Industry Association standards-JBMS-66

< > Blue Angel-RAL-UZ62;2002 Appendix 3

Example 7

Director.
 Division/Department
 Company

Date
 Date of issue of this certificate

Address to send this certificate
 If an applicant manufactures the product under application:
 To the director of Eco Mark Office, Japan Environment Association
 If an applicant is different from the manufacture:
 To applicant

Company name
 Issuer of certificate

List of Plastic materials used

Brand of copier (name) _____

Check the statement that best describes you.

Labels, markings, or stickers that are not easy to separate are of the same materials as the portion on which they are pasted, or satisfy VDI2243.	Identical/Not identical (Satisfy/Not satisfy)
--	--

* Plastic products are made of one homopolymer, copolymer, or polymer blend.

Part name	Plastic manufacturer	Plastic parts	Indication of material
Example: body	Example: XX Chemical Co., Ltd.	Example: AB-1234 made by YY Chemical	Example: >ABS+PC<

As indicated above, plastic products are made of one homopolymer, copolymer, or polymer blend (polymer alloy).

If labels, markings, or stickers are not easy to separate, these shall be of the same materials as the portion on which they are pasted, or shall satisfy VDI2243.

Example 8

Director.
Division/Department
Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of
certificate

Certificate of Additives and Flame Retardants for Plastic

Plastic parts do not use additives or flame retardants for plastic listed below.

<List of additives, flame retardants>

NO	Additive/Flame retardant	Use of additive/flame retardant
1	Cadmium	Used/ Not used
2	Lead	Used / Not used
3	Mercury	Used / Not used
4	PBE	Used / Not used
5	PBDE	Used / Not used
6	Chlorinated paraffin	Used / Not used

* Note that cadmium, lead, and mercury may be used in wire and other electric, electronic parts.

Example 9

Director.
Division/Department
Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of
certificate

List of Plastic Parts with Marking

NO	Site of use	Parts weight (g)	Smooth area of parts (mm ²)
1	Sorter parts	100	1000
:			
n			

↑ Over 25g or over 200mm² ↑ or

Certificate of compliance with ISO 11469

Example 10

Director.

Division/Department

Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of certificate

Toxic substances in toner

Middle classification	Small classification	NO	Substance	Containment	
Heavy metals		1	Mercury compounds	Yes/ <input checked="" type="radio"/> No	
		2	Lead compound	Yes/ <input checked="" type="radio"/> No	
		3	Cadmium compounds	Yes/ <input checked="" type="radio"/> No	
		4	Hexavalent chromium compounds	Yes/ <input checked="" type="radio"/> No	
Other	EC Commission Directive	1	Attachment I R26	Yes/ <input checked="" type="radio"/> No	
		2	Attachment I R27	Yes/ <input checked="" type="radio"/> No	
		3	Attachment I R 40	Yes/ <input checked="" type="radio"/> No	
		4	Attachment I R42	Yes/ <input checked="" type="radio"/> No	
		5	Attachment I R45	Yes/ <input checked="" type="radio"/> No	
		6	Attachment I R46	Yes/ <input checked="" type="radio"/> No	
		7	Attachment I R49	Yes/ <input checked="" type="radio"/> No	
		8	Attachment I R60	Yes/ <input checked="" type="radio"/> No	
		9	Attachment I R61	Yes/ <input checked="" type="radio"/> No	
		10	Attachment I R62	Yes/ <input checked="" type="radio"/> No	
		11	Attachment I R63	Yes/ <input checked="" type="radio"/> No	
		12	Attachment I R64	Yes/ <input checked="" type="radio"/> No	
		IARC	1	Carcinogenicity	Yes/ <input checked="" type="radio"/> No
		EC Commission Directive, labelling of the designated symbols on the entire product	1	Attachment IV	Yes/ <input checked="" type="radio"/> No
	2		Attachment I R43	Yes/ <input checked="" type="radio"/> No	

Example 11

Director.

Division/Department

Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of
certificate

Azo Coloring Agent of Toner

Amines that should not be produced during the decomposition of azo group are not used.

	Chemical substances	CAS No.
1	4-aminodiphenyl	92-67-1
2	Benzidine	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'-dichlorobenzidine	91-94-1
11	3,3'-dimethoxybenzidine	119-90-4
12	3,3'-dimethylbenzidine	119-93-7
13	3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0
14	<i>p</i> -cresizin	120-71-8
15	4,4'-methylen-bis-(2-chloroaniline)	101-14-4
16	4,4'-oxydianiline	101-80-4
17	4,4'-thiodianiline	139-65-1
18	<i>o</i> -toluidine	95-53-4
19	2,4-toluendiamine	95-80-7
20	2,4,5-trimethylaniline	137-17-7
21	<i>o</i> -Anisidine	90-04-0
22	4-aminoazobenzene	60-90-3

Example 12



Instruction manuals Compliance with “Paper Printed Matter”

Item	Fill in this Column	Documents to be Submitted	Issued by	
6.(2) Copyright law, criminal laws, independent industry regulations	“compliance with copyright law, criminal laws and independent industry regulations” < > Yes/< > No (Select where appropriate)			
4-1.(1) Printing paper	If using Eco Mark certified printing paper, the product name and certification number of the paper used should be filled in the following list. Otherwise, certificates specified in the right column should be submitted.	Documents certifying all compliance with the Eco Mark Certification Criteria No.107 “Printing Paper Version2.0”	Paper manufacturer	
	Eco Mark certified brand name			Eco Mark certification number
4-1.(2) Printing ink	If using Eco Mark certified printing ink, the product name and certification number of the ink used should be filled in the following list. Otherwise, certificates specified in the right column should be submitted.	Documents certifying compliance with 4-1(1)-(7) and 4-2(10) of the Eco Mark Certification Criteria No.102 “Printing Ink Version2.0”	Paper manufacturer	
	Eco Mark certified brand name			Eco Mark certification number
4-1.(2) PRTR law	Use as prescription constituents of materials other than paper such as ink and adhesives, which are Class 1 or 2 chemicals	Certificate for the chemicals	Applicant	

	specified by PRTR Law < > Used/< > Not used (Select where appropriate) If “used”, documents provided in the right column should be submitted		
4-1.(3) Halogen resins	Use of halogens < > Used/< > Not used (Select where appropriate)		
4-1.(4) Environmental laws and regulations	Printing manufacturer () Binding manufacturer () * If there is sufficient space here, prepare and submit another form. *	Certificate (Example12-1)	Printing/binding manager
4-1.(5) Obstacles to recycling	Use of prohibited materials < > Used/< > Not used (Select where appropriate) * Excluding those listed in Attachment 1 which are permitted to use.	Certificate describing binding method and materials used (e.g. binding with wire)	Applicant
	Use of surface processing < > Used/< > Not used (Select where appropriate) If “used”, documents provided in the right column should be submitted	Certificate of material name for processing agent, whether processing agent is water-soluble or not	Applicant
	Use of adhesive < > Used < > Not used (Select where appropriate) If “used”, documents provided in the right column should be submitted	Certificate of material names of adhesive, indicating specifically they are corresponding to those listed in Attachment 1, which are permitted to use. However, the use of hot melt adhesives is authorized.	Applicant
4-1.(7) Recycling focus information * Separate from the information indicated below the Eco Mark		Design drawing to be provided (Format free, text)	Applicant
4-2.(1) Product quality		Certificate to conform in-house regulations (Example12-2)	Printing/binding manager

Example 12-1

Director.
Eco Mark Office
Japan Environment Association

Address to send this certificate

Date
Date of issue of this certificate

XXXXX XXXXX
Company name
Seal
Issuer of certificate

* Issuer: Printing/binding manager

Environmental Laws and Agreements Compliance Certificate

This is to certify that (the finished product manufacturer) has been observing the following requirements in the manufacturing of the (product under application for Eco Mark certification).

The production process has been conforming to relevant environmental laws and regulations and agreements on pollution control for preventing air pollution, water contamination, noise, vibration, odor, and emission of hazardous materials in the past five years (*) since application.

Example of relevant regulations:

Air Pollution Control law
Water Pollution Control law
Noise Regulation Law
Vibration Regulation Law

} The plant shall specify the applicable laws and agreements.

Offensive Odor Control Law
XX Prefecture XX Environment
Protection Ordinance
XX City Agreement on Pollution Control

} Ordinances or agreements shall be specified if any is effective in the local

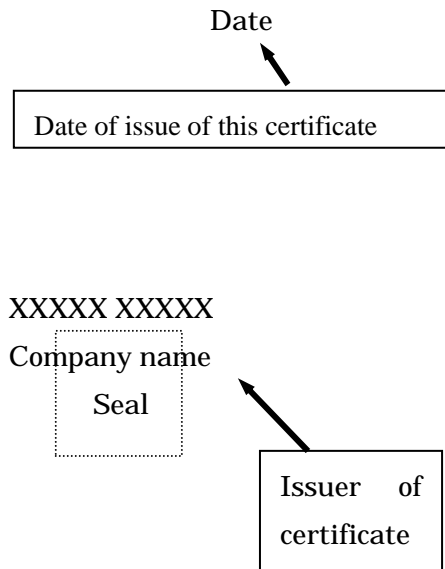
(*) Otherwise, provide a statement indicating no laws and agreements have been violated since the establishment of the company.

If the issuer is other than the plant manager, indicate the issuer is a person who also holds the post of plant manager or who is in an executive position equivalent to plant manager.

The certificate is effective, if the date of issue is within about three months before/after application for Eco Mark certification.

Example 12-2

Director
Eco Mark Office
Japan Environment Association



* Issuer: Printing/binding manager

In-house Quality Control Certificate

This is to certify that only (name of the brand product under application for Eco Mark certification) products that meet quality control criteria under product quality management according to items in the separate sheet(s) (document describing actual quality control items) are shipped.

Indicate that the issuer is the plant manager or someone in an executive position equivalent to plant manager.

Example 13

Director.
Division/Department
Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of certificate
(Packaging material
manufacturer)

No use of CFCs, HCFCs, 1,1,1- trichloroethane, and tetrachloride in packaging material

Packaging material does not use CFCs, HCFCs,
1,1,1- trichloroethane, and tetrachloride, specified
in the Montreal Protocol

Supervisor or plant manager of the manufacturer

No use of polymers including halogens in plastic for packaging

Polymers including halogens are not used in
plastic material for packaging.

Supervisor or plant manager of the manufacturer

Example 14

Director.
Division/Department
Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of certificate
(Paper manufacturer)

Percentage of Waste Paper in the Pulp Mixture for Packaging Cardboard

Percentage of Waste Paper in the Pulp Mixture: XX%

Example 15

Director.
Division/Department
Company

Date

Date of issue of this certificate

Address to send this certificate

If an applicant manufactures the product under application:

To the director of Eco Mark Office, Japan Environment Association

If an applicant is different from the manufacture:

To applicant

Company name

Issuer of certificate

(Packaging material
manufacturer)

Quality Certificate

This is to certify the printing capacity of the recycled toner cartridge is over 90% of the new model.

■ Number of sheets which can be printed with new cartridge: C1

$$C1 \text{ (in sheets)} = ((M1-M2)/(M1-M3)) \times 1000$$

M1: Weight of new cartridge

M2: Weight of new cartridge after use

M3: Weight of toner cartridge after printing on 1000 A4-size sheets at 5% of the effective range

■ Number of sheets which can be printed with a recycled cartridge: C2

$$C2 \text{ (Number of sheets)} = ((M4-M5)/(M4-M6)) \times 1000$$

M4: Weight of new recycled cartridge

M5: Weight of recycled cartridge after use

M6: Weight of toner cartridge after printing on 1000 A4-size sheets at 5% of the effective range

$$\text{Printing capacity percentage (\%)} = (C2/C1) \times 100$$

Instructions on filling 6

Reuse/recycling and resource recovery rates of total product weight

Product type()

Submit the following form for each product type. If the same weight proportion of materials used exists throughout certain types, it should be described on the form. If there is not enough space on the form, create another form similar to the table below.

* **Exclude toner and expendable parts from the weight of products.**

4-1. (7) Reuse/recycling rates of the entire product; 4-1.(8) Resource recovery												
	Product name or part name	weight (g)	Material/substance to be reused	weight (g)	Material/substance to be recycled	weight (g)	Material to be recovered as resource other than those to be reused or recycled	weight (g)	Other	weight (g)	Collector	Uses after collection
Part 1												
Part 2												
Part 3												
Part 4												
Part 5												
Part 6												
Part 7												
Part 8												
Total Weight												
	A		B		C		D		E			

Reuse/recycling percentage of collected parts in the entire product

$(B+C)/A \times 100 = \quad (g) / \quad (g) \times 100 = \quad \% \quad \text{Omit the second decimal place}$

Resource recovery (reuse/recycling or energy recovery)rate of the entire product

$(B+C+D)/A \times 100 = \quad (g) / \quad (g) \times 100 = \quad \% \quad \text{Omit the second decimal place}$