



Eco Mark News

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The “Eco Mark News” has been published since June 14, 1996 by the Eco Mark Office in response to a revision of the “General Procedures for the Eco Mark Program”. In this “Eco Mark News”, the information related to Eco Mark Program such as newly selected Eco Mark product category and proposals for certification criteria are provided on the basis of the “General Procedures for the Eco Mark Program”.

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This brochure is using Eco Mark certified printing papers.

On the announcement of the revised and new product categories,and those product certification criteria.

Since the revised product category “Plastic Products Using Recycled Materials” and its product certification criteria,and new product category “Copier” and its product certification criteria were drafted by the each working group ,the Eco Mark Office will announce the draft of the product certification criteria as shown in attached Annex, and accept any opinions on these subjects until Thursday, July 1, 1999. For sending the opinion, please refer to the “Acceptance of Opinions on the Revised and New Criteria” below.

These proposals of new product certification criteria will be established as the Eco Mark Certification Criteria on Wednesday, September 1, 1999.

The proposal for the product certification criteria of the Eco Mark product category will be publicly announced through “Eco Mark News” and “Eco Mark Homepage (<http://www.jeas.or.jp/ecomark/english>)” after it is prepared by each working group.

Any opinion about it will be accepted in the period of 60 days after it is announced. When receiving any opinion, modifications of the proposed criteria will be done as necessary. Modified criteria will be discussed in the Eco Mark Promotion Committee and established as a product certification criteria.

“Acceptance of Opinions on the Revised and New Criteria”

(1) Acceptance by mail and FAX

- Address, Name, Sex, Occupation, Contact Address, Telephone number, FAX number
- Name of the proposal Eco Mark product category and certification criteria to give opinion
- Opinions on the above proposal criteria

A summary of the above matters should be sent in writing (on A4 size paper) to the Eco Mark Office, Japan Environment Association at the address below by Thursday, July 1, 1999 by mail (postmark effective) or FAX.

Japan Environment Association The Eco Mark Office
Office-Toranomon1 Building 5F, Toranomon1-5-8, Minato-ku, Tokyo, Japan,105-0001
TEL 81-3-3508-2651 FAX 81-3-3508-2570

2) Acceptance by e-mail

- Address, Name, Sex, Occupation, Contact Address, Telephone number, FAX number, e-mail address
- Name of the proposal Eco Mark product category and certification criteria to give opinion
- Opinions on the above proposal criteria

A summary of the above matters should be sent to the address below by Thursday, July 1, 1999 by e-mail.

(When you send opinions by an attachment file, the file should be in MS-WORD, Ichitaro, or Excel file format.)

e -mail ecomark@japan.email.ne.jp

As for the Eco Mark product category now under revised procedures but applied in the Eco Mark usage contract for certified products, the renewal of certification or contract will be performed in accordance with the presently applicable certification criteria and provisions for contract work at the time of revision until the new revision will be completed and applicable criteria will be established.

Revised draft for Eco-Mark Product Category

Plastic Products Using Recycled Materials (draft)

Japan Environment Association
The Eco Mark Office

1. Environmental Background

In 1996, plastic raw materials of about 14,660 thousand tons were produced in Japan. On the other hand, according to statistics of Plastic Waster Management Association, 9,090 thousand tons of plastics was disposed of in the same year, a half of which as industrial waste and the remaining half as domestic waste. Out of the plastic waste, 1,030 thousand tons (about 11%) was recycled (subjected to so-called material recycle), 4,690 thousand tons (52%) was incinerated, and the remaining 3,370 thousand tons was land-filled.

In this situation, the Eco Mark products should contribute to increasing the resource recovery rate of plastics, by promoting the use of recycled materials. For this purpose, it is desirable that plastics be sorted into different types of plastics before they are collected as waste, not only separated from non-plastic waste. In this connection, we have already classified such materials as PET bottles and other PET products into an Eco-Mark product category in order to promote recycling them into polyester fibers.

In setting up the product certification criteria, we took into consideration that recycling will become obligatory in April 2000 on the basis of "the law for promoting the collection of source-separated containers and packages, and the recycling of them."

In revision of this category, we examined a wide range of products which contain plastics as the main material but which are not classified into other Eco Mark product categories, so that these materials as recycled will replace virgin materials as much as possible. In this case, we have defined "plastic products using recycled materials" as certification-applicable products, considering their environmental aspects not only in material sourcing stage (use of recycled materials) but also throughout the life cycle, including product manufacturing process and utilization stages, disposal and recycle stages.

2. Scope of Applicable Products

Group "A" products listed in Attachment 1, which become domestic waste when they are disposed of, do not include those using polymers containing halogen-group elements (including surface coatings). Group "B" products include such polymer materials.

This category does not include products that belong to other categories which are set up for plastic products using recycled materials (for example, "Clothes and Fiber Products Using Recycled PET Resin" and "Recycled Products of Used Tire Tubes").

The following individual products are not included:

- 1) Food containers which are not permitted for use by the Ministry of Health and Wealth or by local governments, and black-colored and other opaque plastic bags and the like.
- 2) Packaging materials which are generally considered as excessive.
- 3) Outdoor furniture and gardening articles which are not recovered or easy to scatter.

3. Definitions

- Recycled materials: post-consumer and pre-consumer materials
- Recycle: material recycle only; thermal recycle and the like are not included.
- Post-consumer material: material or product which was disposed of after being used as a product
- Pre-consumer material: material or rejected product generated from a disposal route in a product manufacturing process, excluding those which are recycled within the same process (plant)
- Plastics: material composed of single or plural polymers, plus additives, fillers, etc. which are added to the polymer(s) to give specific characteristics
- Industrial waste: waste plastics as defined by the Waste Disposal and Public Cleansing Law, which are treated properly at the enterprise's responsibility
- Domestic waste: waste plastics other than those defined above
- Through-away product: product which is not designed to be used repeatedly in a particular field, whereas its original product is durable and used repeatedly

4. Criteria for the Eco Mark Certification

4-1 Environmental Criteria

- (1) The weight percentage of recycled plastics in the total weight of the product shall satisfy the standard value specified for each product group in accordance with the Attachment 1. It is permitted to blend with other materials and to blend recycled polymers and virgin polymers. Where a recycled polymer from post-consumer materials is used in 100% as the raw-material polymer, the figure in [] in the table shall be met.
- (2) Laws and regulations related to discharge of air and water pollutants and labor safety and sanitation as well as agreements on pollution prevention shall be followed during manufacturing.
- (3) The product shall not contain heavy metals or other toxic chemicals specified by laws and regulations or industry's own standards.

Plastic additives shall follow the positive lists specified by industry's own standards, such as those of Polyolefin Sanitary Association, PVC Food Sanitary Association, etc. Products using flame-retardant agents shall have been approved as "disaster preventing products" or "disaster preventing goods", and also shall not contain polybromobiphenyl (PBB), polybromodiphenylester (PBDE), and short-chain chlorinated paraffin (with 10-13 chained carbons and 50% or higher in chlorine content). These products shall not contain phthalate-ester-based plasticizer and stabilizer or Pb-, Cd-, and Sn-based stabilizer or slip additive.

The plastic color agent shall meet environment-related criteria under Items (3), (4), and (5) in Attachment 2. Contents and elusion of heavy metals shall comply with "Standards for Color Agents" of the Polyolefin Sanitary Association.

- (4) The product shall not contain Persistnt Organic Pollutants listed in the United Nations Environment Programme (Attachment 3: POPs). Such chemicals shall not be emitted during use or after disposal.
- (5) The product shall be durable and shall not be "disposable product (or throwaway product)" in principle. However, this article may not apply to "disposable (or throwaway) product" as defined, provided that a system of recycling after use has been established and this system is actually working.
- (6) Concerning a product belonging to Product Group "B" in Attachment 1, it shall be assured that the product is properly treated at its disposal.
- (7) Concerning a product which is compounded of other material, it shall not be harmful for recycling and proper treatment at its disposal.
- (8) The product shall be marked to facilitate recycling, in accordance with Attachment 4. To indicate a type of plastics, a symbol to JIS K6899 or ISO 1043-1 is used and "R-" is added to the beginning of the symbol. Where plural sorts are used, symbols like "R-PE, PP, PS" are used. Where three or more sorts are used, the first two sorts are indicated like "R-PE, PP, etc." and the third and further sorts may be omitted.

4-2 Quality Criterion

- (1) The quality shall meet laws and regulations such as Food Sanitation Law, JIS, and industry's own standard.

5. Certification Procedure

- (1) Annexed Certification whose format is attached to this document shall be submitted. The certification, certifying the conformance with the criteria, shall be signed by the applicant.
- (2) Regarding the environmental criterion 4-1(1), a raw-material certificate issued by the supplier shall be submitted.
- (3) Regarding the environmental criterion 4-1(2), a written self-proclaimed certificate by the plant manager showing the plant's five-year compliance with agreements on environmental regulations and etc. applicable to the area in which the plant is located shall be submitted.
- (4) Regarding the environmental criteria 4-1(3) and (4), a certificate issued by the material supplier or a certificate of test results carried out by a third party laboratory shall be submitted.
- (5) Regarding the environmental criterion 4-1(5), the description or the like shall be submitted in order to certify that a system for recovery and recycle after use has been

established.

- (6) Regarding a product classified into Group "B" in Attachment 1 under 4-1(6) environmental criterion, materials (or documents) certifying that proper treatment of the product is ensured at disposal shall be submitted.
- (7) Regarding a product which is combined with other material, consideration of separation and pre-sorting shall be described. It shall be described that recycling or recovery and treatment of such a product is not difficult ("difficult" means, for example, that recycling is not actually done or pulverization requires large energy.)
- (8) Regarding the environmental criterion 4-1(8), a photograph allowing to confirm the marking or a marking design document shall be submitted.
- (9) Regarding the quality criterion 4-2(1), certification of test results carried out and issued by a third-party laboratory shall be submitted.

6. Other Requirements

- (1) A product certification group shall correspond to a product function group (6 or 7 digits in principle) based on Classification of Standard Goods in Japan and shall be classified based on each brand. Further division by color or size shall not be considered.

Two products of different materials are separated, without depending on material composition ratio. However, a textile product which contain recycled plastics in 10% and more shall be classified into a separate group.

- (2) The text appearing below the Eco-Mark label shall indicate "Purasuchikku no Sairiyō (plastics reused)" or "recycled plastics ___%". "___%" indicates the weight percentage of recycled plastics in the whole product.
- (3) In order to make the information in below the Eco-Mark label, environmental information may be indicated. In this case, two-line text, centered, is frame with a rectangle, with the indication of: "Purasuchikku no Sairiyō (plastics reused)" and "R-XX ___%". If three or more sorts of recycled plastics are used, the third and further sorts may be omitted: "R-XX, -YY, etc. ___%".



Purasuchikku no
Sairiyō
(Plastics reused)
R-XX and -YY ___%

Enactment scheduled for: September 1, 1999

These certification criteria for the product category will be reviewed within five years after the date of enactment, and the certification criteria and/or the product category will be revised or removed.

Attachment 1 Classification of Recycled Plastics Products and Criteria for Recycled Materials Ratio

Grouping	Basis of grouping	Examples	Percentage of recycled plastics	Notes on recovery, material marking, etc.
A. Products that become domestic waste when disposed	Products that are difficult to recycle			
Food, cosmetics containers and toys	Consideration on sanitation of food etc. is needed.	Lunchbox type tray, cosmetics container, playing cards	40% and more	Attached material marking shall be followed.
Film products	High content of recycled material is difficult.	Packaging material, files using multi-layer films, except excessive packaging and black-color bags	40% and more	Attached material marking shall be followed.
Textiles	Consistency with existing product categories	Clothes, carpets, tents	50% and more	Attached material marking shall be followed.
Functional office supplies etc.	Blending virgin material is needed. Other material combination is high.	Cassette tape cartridges, air cleaner filter, mechanical pencils containing metal, adhesive tapes	50% and more	Attached material marking shall be followed.
Stationery	Product fields where many Eco Mark applications are submitted.	Ballpoint pens, files, pen trays, photo holders	70% and more [60% and more]	Attached material marking shall be followed.
Outdoor furniture, gardening goods	Product fields where many Eco Mark applications are submitted.	Benches, tables, flowerpots, fences	50% and more [40% and more]	Attached material marking shall be followed. Products which are left in nature are excluded (eg. soil holding net, gardening ropes)
Miscellaneous household goods, building materials, etc.	Products classified "A" other than above	Egg packs, buckets, dustbin, hangers, draining boards, brushes, sofas, boards, anchor pins	70% and more [60% and more]	Attached material marking shall be followed.
B. Products that become industrial waste when disposed	Products which can easily be recycled as the same material	Synthetic building materials, printed board substrates, industrial containers, parts transportation containers and buffer materials, safety marks, piles, imitation wood	50% and more [40% and more]	Proper treatment and disposal shall be made. Attached material marking shall be followed.

Note 1: Products which use recycled polymer in 100% made from post-consumer materials shall follow the figures in [].

Note 2: Such portion that is additionally used as consumables is to be deducted from the weight of the product.

Attachment 2 Related Items Specified by Commodity Category No. 104

Environmental criteria	Description
Item 4-1.(3)	“ Law for the Control of Household Goods Containing Harmful Substances” , “ Processing of Formalin Resins” (Textile and Miscellaneous Goods Bureau, MITI, No. 569, 20.July 1972) and other laws and regulations related clothes shall be conformed with. In a product on which “ no residual free formaldehyde” is set forth in such laws and regulations, residual free formaldehyde in the product shall not exceed 75 ppm. Diel-drin shall not be used.
Item 4-1.(4)	Benzidine dyes and other dyes that may generate substances in the table below shall not be used for wool. Benzidine dyes, chromium dies, and other dyes that may generate substances in the table below shall not be used for textiles other than wool.
Item 4-1.(5)	Fluorescent whitening agent shall not be used in an excessive quantity.

Table Attached to Attachment 2 Azo dyestuffs that can produce one of the following amines by decomposition of one or more azo groups

4-aminodiphenyl	3,3' -dimethylbenzidine
Benzidine	3,3' -dimethyl-4,4' - diaminodiphenylmethane
4-chloro-0-toluidine	p- cresizin
2-naphrhyllamine	4,4' -methylen-bis-(2-chloroaniline)
0-aminoazotoluene	4,4' -oxydianiline
2-amino-4-nitrotoluene	4,4' thiodianiline
p-chloroaniline	0-toluidine
2,4-diaminoaniline	2,4-toluendiamine
4,4' -diaminodiphenylmethane	2,4,5-trimethylaniline
3,3' -dichlorobenzidine	
3,3' -dimethoxybenzidine	

Attachment 3 Persistent Organic Pollutants Listed in the United Nations Environment Program

DDT	Aldrin
Dieldrin	Endrin
Chlordane	Heptachlor
Hexachlorobenzene	Mylex
C ₁₀ H ₁₀ Cl ₈	Polychlorinated biphenyl
Dioxins	Furans

Attachment 4 Material Marking for Recycled Plastic Products

Grouping	Examples	Marking of material and disposal method
A. Products that become domestic waste when disposed		
Food, cosmetics containers and toys	Lunchbox type tray, cosmetics container, playing cards	<ol style="list-style-type: none"> 1. Indicate sort of plastics (eg. R-PE) on the plastic portion. 2. Indicate weight percentage and the place of recycled material used on the plastic portion or using a sticker.
Film products	Packaging goods, files using multi-layer films	1. Indicate sort of synthetic plastic and weight percentage on the plastic portion.
Textile products	Clothes, carpets, tents	1. Indicate sort of plastics and weight percentage on the sort portion or indicate using a sticker.
Functional office supplies etc.	Cassette tape cartridges, air cleaner filter, mechanical pencils containing metal, adhesive tapes	1. Indicate sort of plastics and weight percentage on the plastic portion or indicate using a sticker.
Stationery	Ballpoint pens, files, pen trays, photo holders	1. Indicate sort of plastics and weight percentage on the plastic portion or indicate using a sticker.
Outdoor furniture, gardening goods	Benches, tables, flowerpots, fences	<ol style="list-style-type: none"> 1. Indicate sort of plastics on the plastic portion. 2. Indicate weight percentage on the plastic portion or indicate using a sticker.
Miscellaneous household goods, building materials, etc.	Egg packs, buckets, dustbins, hangers, draining boards, brushes, sofas, boards, anchor pins	<ol style="list-style-type: none"> 1. Indicate sort of plastics on the plastic portion. 2. Indicate weight percentage on the plastic portion or indicate using a sticker.
B. Products that become industrial waste when disposed	Synthetic building materials, printed board substrates, industrial containers, parts transportation containers and buffer materials, safety marks, piles, imitation wood	<ol style="list-style-type: none"> 1. Indicate proper treatment and disposal method using a sticker. 2. Indicate type of plastics on the plastic portion. 3. Indicate weight percentage on the plastic portion or indicate using a sticker.

Note 1: Material marking shall be attached to the resin portion of the product proper.

Note 2: Use a sticker or the like as an auxiliary means where marking on the resin portion is difficult.

Product Certification Criteria for “Plastic Products Using Recycled Materials”

Established on April 30, 1999

1. Understanding the Environmental Background

Statistics about domestic waste from the 23 Tokyo metropolitan wards suggest how plastics waste is increasing. Plastics in urban waste increased from about 9% in 1985 to about 12% in 1995. Plastics waste in 1995 amounted to 500 thousand tons, which indicates about 40% increase during the decade.*

In the 23 wards, domestic waste, excluding ordinary business waste, is about 40% of the urban waste. Half of the domestic waste is supposed to be waste from packaging film products; the remaining half consists of packs and cups, bottles, and food trays in the descending order.

Plastics waste is composed of polyethylene (PE) in 28%, then polypropylene (PP), polystyrene (PS), PET, polyvinyl chloride (PVC), and polyvinylidene chloride (PVDC), also in the descending order. Chlorine-based plastics, PVC and PVDC, equals about 14% of the plastic waste, but about 5% of the plastic waste in the total domestic waste, including ordinary business waste. It is reported that plastics waste includes non-plastics waste in 30-40%.

In connection with plastics waste, we have summarized our thoughts about the issue of dioxin discharged from incinerators as follows. It has been revealed until now that (1) dioxin discharged from ordinary urban waste incinerated by a large incinerator in good conditions contain dioxin less than the standard requirement, and (2) almost all incinerators which may involve the dioxin problem can be classified by incinerator system, operation conditions, exhaust gas treatment system, etc. Such approach has already been employed in overseas countries successfully.

Nevertheless, it cannot be denied that improper method of burning chlorine-based plastics may cause the dioxin problem. Furthermore, taking into consideration the WHO's safety standard (TDI: allowable ingestion of dioxin per day per kg of person's weight) which is being reviewed, it would be desirable to subject plastics to material recycling as much as possible. Although dechlorination technology is being studied to develop the possibility of recovering waste plastics as energy, it is important to sort waste when it is generated.

Consequently, in setting up Eco-Mark product certification criteria, we would like to encourage collection of separated waste as much as possible, taking into account the direction of the "Container and Package Recycling Law." Although it is ideal for recycling to realize collection of all kinds of plastics in separated form, this requires waste collection procedures be established on the basis of a social consensus. Accordingly, in this product category, we have adopted separation of polymers containing halogen-group elements from the other polymers.

*Note: "Resources and Environment Measures" vol. 33 (1997) No. 12, p.1093

2. Scope of Applicable Products

From the above viewpoint, we have divided products into two, which are "A: Products that become domestic waste which is difficult to recycle" and "B: Products that become industrial waste which can be possibly recycled as the same material when recovered."

Regarding Group "A", products using polymers which contain halogen-group elements are excluded to avoid increase in environmental impact when they are incinerated or used as recycled fuel. Also excluded are such products that are apt to be left in nature and such products that are used for excessive packaging and other environmentally undesirable purposes. In this case, judgment about whether packaging is excessive or not should be made by Eco Mark Expert Committee because the criteria about excessive packaging may change from time to time.

3. Definitions of Terms

The definition of "recycled material" is based on ISO's "Environmental labels and declarations-self-declared environmental claims (Type environmental labelling)" (ISO/DIS 14021.2) which is now being settled on. Such materials that are recycled not only within the same process, but also within the same plant are not recognized as pre-consumer materials, and therefore such materials are not considered as recycled materials. This is because recycling of waste materials occurring within a plant should be made as a matter of course by the manufacturer, and therefore such recycling is not worth while being considered for the Eco Mark. As a conclusion, recycling of defective products as well as forming pieces such as runners and gates which are generated in manufacturing processes is not considered to be "use of recycled materials" under this product category.

4. Detail of Establishing the Environmental Criteria

For establishing the environmental criteria, environmental impact over the whole life cycle of a commodity was considered, using a table of "Environmental impact at each stage of the product life cycle". As a result, impact items which are considered to be important for establishing environmental criteria for the Eco Mark certification were selected in view of environmental impacts over the whole life cycle of the product. For these items, qualitative or quantitative criteria are to be considered.

Environment impact items considered for the product category of "Plastics Products Using Recycled Materials" are as shown in the table of Environmental impact at each stage of the product life cycle (in the table). Out of these items were finally selected as the environmental criteria: A-1, B-5, B-6, B-9, D-1, D-4, D-8, E-4, E-5, E-7, E-8, E-9, and also F-1 and F-7 (in the table). The columns with ■ in the table show items which were out of the scope of review or which were reviewed in combination with other items. Following is the details of establishing the environmental criteria.

Table Environmental impacts at each stage of the product life-cycle

Environmental impact	Stage of product life cycle					
	A. Resource extraction	B. Manufacturing	C. Distribution	D. Use/consumption	E. Disposal	F. Recycling
1. Resource consumption						
2. Emission of substaces affecting global warming						
3. Emission of ozone-layer-depleting substances						
4. Deterioration of the ecosystem						
5. Emission of air pollutants						
6. Emission of water pollutants						
7. Waste and its disposal						
8. Use and emission of hazardous substances						
9. Other environmental impacts						

A. Resource extraction stage

A-1 Resource consumption

The following points were investigated under this item:

(1) Recycled materials are used as much as possible.

Regarding the above, the content of recycled materials used should be as much as possible. In the course of our discussions, it was asserted that products that use plastics recovered from domestic waste should be recognized even if the plastic content might be low because the recovery rate of plastics has been very low (less than 1%). It was pointed out, however, that no social systems to recover post-consumer materials from domestic waste have established and that examining the content of materials recovered from domestic waste is difficult. As a result, we have concluded that incentive should be given to utilization of post-consumer materials in a whole in order to accelerate recycling.

However, there are also such areas where recycled materials are difficult to use. For example, film products to be used for food products are technically required to be processed for inside lamination for sanitation, and therefore these products are not recycled at a high rate. As a matter of fact, many proposals have been submitted for the use of these recycled plastic materials as functional products to be Eco Marked. Many people suggested that Eco Mark should be opened to these products in order to expand the possibility of recycling. From these points of view and considering the acceptability to consumers, we have concluded to set up product groups and determine a rate of recycled materials required for Eco Mark certification for each product group. It has been also decided to set lower rates for some groups which use post-consumer materials as raw material polymer. These considerations are employed as environmental criteria.

A-9 Other environmental impacts

The following points were investigated under this item:

(1) Articles 1~58 of the Law on Industrial Safety and Hygiene shall be followed.

Discussions on labour environment were made on whether items corresponding to the ISO's Environment Management are necessary or not at each life stage. Since sampling places and methods of resource extraction are not identified for this life stage, the suggested criteria were considered to be difficult to establish. As a result, no criteria were established.

B. Manufacturing stage

B-1 Resources consumption

The following points were investigated under this item:

(1) Consumption of sub-materials should be minimum during production.
(2) Single kind of plastic should be used if possible.

Regarding (1), it is difficult to consider that the use of sub-materials increases more than necessary, so we determined it is not necessary to set up criteria for suppressing the use of sub-materials.

Regarding (2), it was proposed that a flow of recycling single kind of plastics in the same manner as recycling paper; if more than two kinds of plastics are mixed, the recycling flow stops at that point. On the other hand, some people proposed that mixing of plastics should be recognized in order to increase the use of waste plastics, which is as low as 11% at present, as much as possible. As a matter of fact, mixed plastics are often used where post-consumer materials are fully used. For example, mixed recycled plastics are used to produce stakes.

As a result of discussions, we have concluded that use of mixed plastics should be recognized, and therefore this item was not adopted as criteria.

B-3 Emission of ozone-layer depleting substances

The following point was investigated under this item:

(1) Specified CFCs shall not be used.

Based on the "Montreal Protocol about Ozone Depleting Substances" it is mandatory requirement not to use specified CFCs and this shall be followed. The observance of environmental laws and regulations at the production stage was discussed along with items B-5, B-6, and B-9, and this item has been employed as criteria in terms of the observance of applicable laws and regulations.

B-5 Emission of air pollutants

The following point was investigated under this item:

(1) Emission of air pollutants during production shall be minimum.

Emission of air pollutant shall be well controlled during production, even if recycled material are used. From this viewpoint, it has been adopted as criteria that applicable laws and regulations shall be followed in the same manner as item B-3.

B-6 Emission of water pollutants

The following point was investigated under this item:

(1) Emission of water pollutants during production shall be minimum.

Effluent of water-polluting substances shall be controlled carefully particularly in such a plant where waste is used as recycled materials. From this viewpoint, it has been adopted as criteria that applicable laws and regulations shall be followed in the same manner as item B-3.

B-9 Other environmental impacts

The following points were investigated under this item:

(1) No electromagnetic waves harmful for environment shall be generated.
(2) Articles 1~58 of the Law on Industrial Safety and Hygiene shall be followed.

Regarding (1) and (2), it was pointed out that electromagnetic waves generated from raw-material melting furnaces and other places during production may negatively affect labourenvironment, and therefore careful control is required in line with the Law on Industrial Safety and Hygiene. From these viewpoints, it has been adopted as criteria that applicable laws and regulations shall be followed in the same manner as item B-3.

C. Distribution stage

C-9 Other environmental impacts

The following point was investigated under this item:

(1) Articles 1~58 of the Law on Industrial Safety and Hygiene shall be followed.

For this item, it has been concluded that particular criteria are not necessary at the distribution stage, and therefore particular criteria have not been established.

D. Use/consumption stage

D-1 Resource consumption, and

D-7 Waste and its disposal

The following point was investigated under this item:

(1) Products shall be superior in safety and durability.

Requirements on the safety and durability characteristics regarding the quality of products according to the Food Sanitation Law have been settled as criteria for quality under Item 4-2. Under this item, durability was discussed along with Item D-7 and has been employed as criteria.

D-4 Deterioration of the ecosystem

The following point was investigated under this item:

(1) The product shall not cause deterioration of the ecosystem (in using stage).

It is reported that extrinsic endocrine disruptors (so-called environmental hormones) are often detected in animals that live in oceans and polar regions. As a possible route of environmental hormones entering animals' bodies are doubted chemicals which occur or leach out of plastics disposed of without proper treatment. Out of such chemicals, the United Nations Environment Programme focused residual organic chemicals (POPs) which may be accumulated in animals' bodies in the course of food chain. As a result, 12 substances listed in Attachment 3 shall be required to be controlled.

The POPs will be formulated as a treaty and added some chemicals, so we have specified that such additional chemicals also shall not be contained or generated at use or disposal. This item has been employed as criteria.

D-7 Waste and its disposal

The following point was investigated under this item:

(1) The product shall not be of disposable (or throwaway)

Even in recycling a recycled material, it should not be used for an unnecessary purpose, such as excessive packaging, other than its original function. (For instance, use as plastic trays in beer-can packaging should be avoided because it is excessive packaging.)

When recycled plastics is used for a disposable product whereas the original product is durable and repeatable (for instance, disposable plastic spoon or fork), this does not reduce the environmental impact. However, if plastics is used for boxes or pipes which as durable as wooden boxes or steel pipes, recycling of plastics should be deemed to be effective, because it is difficult to quantitatively determine the difference in environmental impact between plastics and wood or steel.

It was concluded that even disposable products should be handled as the Eco Mark products provided that a system for recovering and recycling after use has been established. This

item has been selected as an item for which criteria should be established.

D-8 Use and emission of hazardous substances

The following point was investigated under this item:

(1) The product shall not contain toxic chemicals and other harmful materials.

As a matter of course the product should not contain such substances that are forbidden by laws and regulations or industry's own standards.

The safety of additives to plastics was discussed as an issue regarding at using products. We have decided to follow the positive list issued by the Polyolefin Sanitary Association and the PVC Food Sanitary Association, for all plastic products applicable to this category. We have employed this positive list which provides the world's most severe standard for plastic additives used for food containers, from the viewpoint of minimizing environmental impact.

We have excluded some flame-retardant agents, plasticizers, and stabilizers out of plastic additives whose use should not be permitted for is not desirable from the Eco Mark point of view. For flame-retardant agents, already existing Eco Mark rules are to be followed. We have decided to exclude phthalic ester which is used as plasticizer, out of chemicals listed in "The Survey Item List for Approaching Conservation of Water Environment". The use of phosphate ester was permitted because its substitution is difficult at this moment. Use of stabilizers and slip additives containing Pb, Cd, Sn, and other heavy metals was not permitted.

Regarding plastic coloring materials, we have decided to meet the criteria for "domestic textiles using recycled PET resins", i.e. to comply with "Law for the Control of Household Goods Containing Harmful Substances" as well as requirements for "dyes" and "fluorescent whitening agents." Regarding heavy metals in coloring materials, we should follow the standards of the Polyolefin Sanitary Association. We did not exclude such organic coloring materials that contain chlorine because only a small quantity of these materials is added to plastics, and also effective substitutions are not available at present. We should investigate this matter at the next opportunity of reviewing the criteria.

This item has been selected as an item for which criteria should be set up.

E. Disposal stage

E-4 Deterioration of the ecosystem

The following point was investigated under this item:

(1) Deterioration of the ecosystem shall not be caused at disposal.

Discussions about this item are described under D-4.

E-5 Emission of air pollutants

The following point was investigated under this item:

- | |
|---|
| (1) Harmful materials in an amount over the standard should not be emitted when they are burnt. |
|---|

Since air pollutants such as NO_x, and SO_x, are beyond manufacturers' control, we have concluded that setting up criteria is not necessary.

E-7 Waste and its disposal

The following points were investigated:

- | |
|---|
| (1) Easy throwing away shall not be allowed.
(2) There shall not be difficulty in burning or bulkiness after disposal. |
|---|

Item (1) was discussed together with D-7. It has been concluded that criteria should be set up for this item. Item (2) was not selected because it is difficult to verify the conformance with criteria.

E-8 Use and emission of hazardous substances

The following points were investigated:

- | |
|---|
| (1) Hazardous substances shall not be released at disposal.
(2) Use of polyvinyl chloride, polyvinylidene chloride, etc. should not be used as much as possible. |
|---|

Ragarding (1) and (2), the relations between the existence of polyvinyl chloride, polyvinylidene chloride, etc. at burning and generation of dioxin were mainly discussed. It was also discussed that products should be grouped into those which are to be treated as industrial waste when disposed of and those which are to be used by consumers, and how eliminating plastics which contains halogen group elements from household waste will contribute to solving the dioxin problem.

It was specially discussed how to avoid the generation of dioxin where household waste is burnt in poor incinerating facilities and industrial waste is burnt in an illegal way (open burning), as the discussions, and conclusions, are summarized in "1. Understanding to Environmental Background" in this booklet. It is important that household waste should be sorted before it becomes waste. Since providing product group "A" will allow to exclude polymer products containing halogen-group elements which can be the generation of dioxin, we have not provide criteria for Group "A".

For industrial waste, we have set up criteria to make sure that illegal burning and illegally left waste in nature will be eliminated and proper treatment and disposal of industrial waste will be made.

E-9 Other environmental impacts

The following point was investigated:

(1) Articles 1~58 of the Law on Industrial Safety and Hygiene shall be followed.

This is necessary in the disposal stage as we discussed under B-3. However, since it is impossible for product manufacturers and sellers to control disposal operations, this item has not been selected.

F. Recycling stage

F-1 Resource consumption

The following point was investigated under this item:

(1) Resources consumption should be minimum at recycling.

Since the consumption of raw materials cannot substantially increase in the stage of recycling waste plastics, we have concluded that criteria for limiting the resources consumption are not needed. Consequently, this item was not selected as an item for which criteria should be set up.

F-7 Waste and its disposal

The following points were investigated:

- (1) Marking shall be made to facilitate recycling.
- (2) Recycled products should be easy to recycle after they are disposed of.
- (3) Recovered products should have a lot of portions that can be reused.

Regarding (1), the effectiveness of material marking was discussed in connection with recycling and burning. Expressed were such opinions that numerical marking on products in accordance with the SPI material marking system will be meaningless in terms of recycling unless there are collecting systems corresponding to the marking, the PET obliges marking according to the Plastic Industry Association but this covers only virgin material. Therefore, marking of recycled materials is difficult because they are often mixed, complicated marking is impossible for products which are caved on a mold, etc.

Also expressed were such opinions that material marking of a recycled product can be made with "R-" prefixed to R-PE or to R-PP, plural materials can be marked on mixed materials, not only material names but also percentage of recycled materials should be indicated as consumers' awareness becomes higher, auxiliary marking can be considered for mold, etc.

As a result of these discussions, we have concluded to establish criteria for this item, plastic material marking shall be promoted on Eco Mark products in the viewpoint of increasing of recycling rate.

Regarding (2), use in combination with other materials or use with other plastics or other materials combined was discussed. We have concluded that for plastic products with

other materials combined, separation shall be easy. Although mixing virgin plastics with recycled plastics has not been permitted in the Eco Mark certification until now, many applications for such products are submitted and we do not see any particular reasons for rejecting such products.

Regarding plastics combined or mixed with other materials, we have concluded to recommend this in order to improve the present low recycling rate, as in the case of A-1 and B-1. As a result, we have decided to recognize this application in this fields where materials as combined can be reused after they are disposed of, where the service life is long, or where recycling of virgin materials is difficult, unless such application may cause negative effects. Consequently, Item (2) has been employed as part of criteria.

Regarding (3), we have concluded that this requirement should be handled in a product category for reuse of containers.

F-9 Other environmental impacts

The following points were investigated:

- (1) Harmful radio waves for environment shall not be emitted.
- (2) Articles 1~58 of the Law on Industrial Safety and Hygiene shall be followed.
- (3) There should be efforts for creating recycling systems.

Regarding (1) and (2), although these requirements are essential in the product recycling stage as in the case of E-9, it is impossible for manufacturers and distributors to control recycling work. Consequently we have decided not to adopt these items as criteria.

Regarding (3), this requirement is difficult to incorporate in criteria, we have not employed this item.

4. Quality criterion

It is difficult to list all quality standards on plastics products which are in a variety of product areas. Therefore we have concluded that quality requirements per JIS, if applicable, and quality requirements per industry's own standards, if JIS is not applicable shall be followed.

Laws and regulations such as Food Sanitation Law, if quality requirements are applicable, shall be met.

Annexed certification

Applicant

Table 1 4-1 (1) Material percentage in product

No.	Name of product or part and total weight (g)	Polymer name of recycled plastics and weight (g), and weight percentage (%)	Polymer name of pre-consumer material in recycled plastics and weight percentage (%)	Name of material (polymer name) other than recycled plastics and weight (g)	Certificate No.
1					Material certificate 1
2					Material certificate 2
3					Material certificate 3
•					
n					Material certificate n
Total					

Note: Please indicate in a table below enterprises including material suppliers who participate in the manufacturing process.

Table 2 4-1 (2) Observance of environmental laws and regulation applicable to the plant site

No.	Item	Conformance	Certificate No.
1	Observance of environmental laws and regulations applicable to the plant site	Conform / non-conform	Conformance certificate 2-1

Table 3 4-1 (3) Toxic chemicals

No.	Item	Conformance	Certificate No.
1	Observance of laws and regulations	Conform / non-conform	Conformance certificate 3-1
2	Conformance with industry's own criteria	Conform / non-conform	Conformance certificate 3-2
3	Conformance with the additives positive list of Polyolefin Sanitary Association	Conform / non-conform	Conformance certificate 3-3
4	Conformance with the additives positive list of PVC Food Sanitary Association	Conform / non-conform	Conformance certificate 3-4
5	Use of flame-retardant agent	Used / not used Conform / non-conform	Conformance certificate 3-5

Table 3 4-1 (3) Toxic chemicals (continued)

No.	Item	Conformance	Certificate No.
6	Use of phthalate-ester	Conform / non-conform	Conformance certificate 3-6
7	Content of Zn, Cd, and Pb	Conform / non-conform	Conformance certificate 3-7
8	Law on control of household goods containing toxic chemicals	Conform / non-conform	Conformance certificate 3-8
9	Dyes	Conform / non-conform	Conformance certificate 3-9
10	Fluorescent whitening agent	Conform / non-conform	Conformance certificate 3-10
11	Coloring material standard criteria of Polyolefin Sanitary Association	Conform / non-conform	Conformance certificate 3-11

Table 4 4-1 (4) Residual organic chemicals

No.	Item	Conformance	Certificate No.
1	Contained	Yes / No	Conformance certificate 4-1
2	Generated at use or disposal	Yes / No	Conformance certificate 4-2

Table 5 4-1 (5) Durability of products

No.	Item	Conformance	Certificate No.
1	Durability	Yes / No	Conformance certificate 5-1
2	Disposable product	Yes / No	Conformance certificate 5-2
3	Recovering and recycling system (for disposable products only)	Yes / No	Conformance certificate 5-3

Table 6 4-1 (6) Proper treatment or disposal

No.	Item	Conformance	Certificate No.
1	Product group Proper treatment/disposal (for Group B only)	A / B Conform / non-conform	Conformance certificate 6-1

Table 7 4-1 (7) Combination/mixing with other materials

No.	Item	Conformance	Certificate No.
1	Combination with other materials Device for separation/sorting	Yes / No Conform / non-conform	Conformance certificate 7-1
2	Compounding with other materials Recycle, recovery, treatment (if "yes")	Yes / No Conform / non-conform	Conformance certificate 7-2

Table 8 4-1 (8) Marking on products

No.	Item	Conformance	Certificate No.
1	Marking of plastic material on products	Marking made / Not made	Conformance certificate 8-1 (photo or marking design)

Table 9 4-2 (1) Quality criteria

No.	Item	Conformance	Certificate No.
1	Existence of applicable quality	Yes / No	Name of the standard
2	Conformance with the	Conform / non-conform	Conformance certificate 9-1

Note: If there are no applicable standards, please describe below the conformance with similar standards.

Proposal for Eco Mark Product Category

“Copier” (draft)

Japan Environment Association
The Eco Mark Office

1. Environmental Background

Presently, the copier is one of the most extensively used office product in Japan, and more than 2.5 million of them were produced in 1997. The annual power consumption of this number of copiers amounts to 58 million KWh. If this power consumption will be reduced, not only the power required but also the carbon dioxide emission will be reduced. Copiers are mainly installed in the offices and private houses, therefore, it is necessary to consider the safety against harmful materials in usage stage and the treatment of used copiers.

On the other hand, the copier is made from various materials such as iron, plastics, copper, and aluminum, and seems to be difficult to recycle. However, the copier used in the office is usually taken back by sales companies when it is replaced and its recycle ratio is relatively high among the office appliances. This is due to the rental system and maintenance contract with users, commonly applied for this appliance by manufacturers, sales companies and sales offices. Also, it is partly due to the business custom of trade-in in which suppliers will take back the used copier voluntarily.¹⁾ However, personal users of the copier are increasing recently, and it will be a problem to be solved how the used copier could be collected efficiently. In any case, it is becoming increasingly necessary to design a copier which could be recycled as much as possible. Based on these considerations, it will be quite worthwhile to certify an Eco Mark for the copier, a quite popular office appliance, which will be a guideline for users in selecting one among various products, and thus bring about widespread use of the certified products. This product category will describe a copier designed with considerations for the environment throughout the entire product life cycle from the material resource extraction stage to the recycling.

2. Scope of applicable products

Electrostatic process copying machine

3. Terms and definitions

Constituent parts	:Material component incorporated with apparently intended purposes and not contained as impurities which are technically unavoidable.
Plastic	:Material composed of single or multiple polymer materials added with additives to give particular characteristics, fillers, etc.
Polymer	:High molecular material consisting a major component of the plastics.
Recycled plastic	:Plastic material made from pre-consumer materials or post-consumer materials.
Pre-consumer material	:Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and of being reclaimed within same process that generated it.
Post-consumer material	:Material generated by commercial, industrial and institutional facilities, or households, which can no longer be used for its intended purpose. This included returns of material from the distribution chain.

Recycled plastic part	:Plastic part of which more than 20% is made of recycled plastics.
Recycled plastic ratio	:Weight percentage of recycled plastics contained in the entire (recycled + virgin) plastics.
Reused part	:Part reused in a product, which was previously used in other product.
Reuse-scheduled part	:Part scheduled for reuse, which was previously used in other product.
Reusable part	:Part reusable after disassemble or washing process of the main appliance.
Recycled part	:Part for which forms or characteristics are changed by application of some kind of energy.

4. Certification Criteria

4-1 Environmental Criteria

- (1) The product shall use more than 100g of recycled plastic parts.
- (2) The product shall incorporate reused parts or reuse-scheduled parts.
- (3) Supply of the spare parts shall be continued for seven years after production stops.
- (4) CFCs (Chlorofluorocarbons) shall not be used in the production process.
- (5) The emission of air or water polluting and hazardous substances in the production process shall be taken into account.
- (6) HCFCs(Hydro-chlorofluorocarbons) shall not be used in the packaging materials.
- (7) Polymers containing halogens shall not be used in plastics used for packaging.
- (8) At least one or more of the papers usable in the product shall be the recycled paper with 100% recycled pulp.
- (9) There shall be a recovery system for the used toner container.
- (10) Copying on both sides shall comply with the standard at the time when the product is registered in the International Energy Star Program²⁾ (hereafter referred as “Energy Star”).
- (11) The energy consumption of the product shall comply with the standard applicable at the time when it is registered in the Energy Star.
- (12) Dust emissions discharged from the product shall not exceed a concentration of 0.075mg/m³ in indoor air. The dust concentration shall be measured in accordance with the test method established by the Japan Business Machine Makers Association or under the test conditions described in Annex 3 of the Blue Angel³⁾.
- (13) Ozone emissions discharged from the product shall not exceed a concentration of 0.02mg/m³ in indoor air. The ozone emission shall be measured in accordance with the test method established by the Japan Business Machine Makers Association or under the test conditions described in Annex 4 of the Blue Angel.
- (14) Styrene emissions discharged from the product shall not exceed a concentration of 0.07mg/m³ in indoor air. The styrene emission shall be measured in accordance with the test method established by the Japan Business Machine Makers Association or under the test conditions described in Annex 5 of the Blue Angel.
- (15) With regard to heavy metal contained in the toner, mercury compounds, lead compounds, cadmium compounds, and Chromium(VI) compounds shall not be included intentionally as prescribed ingredients.
- (16) With regard to azo coloring agents in the toner, those (dye or pigment) containing substances rated in the MAK-value-list⁴⁾ as carcinogenic or carcinogenic-suspicious (MAK III A1, MAK III A2, or MAK III B) shall not be used.
- (17) With regard to the other hazardous substances concerning the toner, those substances listed in (a) to (d) below shall not be included as prescribed ingredients.
 - (a) Substances classified in § 4a of the EU’s Directive of Hazardous Substances⁵⁾ (Ordinance about the list on Hazardous Substances and Preparations), and obligated to be marked with the

following R numbers according to Annex 1 of the said Ordinance.

- R26 (very toxic when inhaled)
- R27 (very toxic upon contact with the skin)
- R40 (Possible irreversible damage)
- R42 (Possible sensitization by inhalation)
- R45 (may cause cancer)
- R46 (may cause genetic damage)
- R49 (may cause cancer if inhaled)
- R60 (may impair the reproductiveness)
- R61 (may be harmful to the embryo)
- R62 (may possibly impair the reproductiveness)
- R63 (may possibly be harmful to the embryo)
- R64 (may be harmful to the infant via the mother's milk)

- (b) Substances classified as carcinogenic (Level 1, 2A and 2B) in the "Recommendation on Allowable Concentration" issued by IARC⁶⁾ (International Agency for Research on Cancer). However, carbon black shall be excluded.
 - (c) Substances required to be marked by a hazard symbol on the whole product pursuant to Annex I, No. 2 in the EU's Ordinance on Hazardous Substances.
 - (d) Substances required to be marked by R43 (Possible irritability when in skin contact) number pursuant to Annex I in the EU's Ordinance on Hazardous Substances.
- (18) The noise shall be in accordance with ISO 7779 or the Blue Angel.
 - (19) The safety of product shall conform to the requirements of IEC (International Electrotechnical Commission) 950. Otherwise, the product shall comply with Ordinance Clause 1 or Clause 2 of the Electrical Appliances Law. In the case the product shall comply with IEC 950, the shape of power socket plugs shall comply with the JIS Standards when it will be established.
 - (20) The electromagnetic adaptability of the product shall conform to the requirements of VCCI (Voluntary Control Council for Interference by Date processing Equipment and Electronic Office Machines).
 - (21) The user's manual shall contain explicit information on any special requirements for the location of the product.
 - (22) Batteries used in the product shall not contain cadmium compounds, lead compounds, or mercury compounds.
 - (23) Photoreceptor used in the product shall not contain cadmium compounds, lead compounds, and mercury compounds.
 - (24) The toner cartridge shall be labeled in accordance with the Guideline for Labeling Office Machines for Securing Safety⁷⁾.
 - (25) Flame retardant agents used in plastics for the case material shall not contain PBB (Poly-Bromide Biphenyl), PBDE (Poly-Bromide Diphenyl Ether), and chlorinated paraffin.
 - (26) Plastic parts shall have a marking in accordance with ISO 11469. However, this need not apply to the parts with weight less than 25g or flat area less than 200mm², or using reused plastics. Reused plastics may be used without marking.
 - (27) The product shall be easy to disassemble.
 - (28) When the same type of products are recovered, the weight of reused or recycled parts shall be more than 50% of the recovered product. This need not apply when the product is not recovered.

4-2 Quality Criteria

- (1) The product shall comply with the Japanese Industrial Standards (JIS Standards) as applicable. If there is no applicable standards in JIS, it shall have a quality equivalent to satisfy similar JIS Standard.

5. Certifying Conformity to Criteria

The applicant (if subject to a raw material, the supplier) shall submit certificates listed in Table 1 in the form of a document affixed with a official seal. Certificates may be copies of the original.

- (1) Regarding environmental criterion 4-1-(1), the applicant shall submit a list of the weight of reused plastics used and a raw material certificate. (Corresponding to Example Certificate 1.)
- (2) Regarding environmental criterion 4-1-(2), the applicant shall submit a list of the reused parts when those are incorporated in an individual copier. When reuse-scheduled parts are incorporated, the applicant shall submit a proof of guaranteed reuse (a scheme of recovery) and a list of reuse-scheduled parts. (Corresponding to Example Certificate 2.)
- (3) Regarding environmental criterion 4-1-(3), the applicant shall submit a list of the duration of parts supply for each maintenance part or a list of the duration of parts supply indicated in the user manual. (Corresponding to Example Certificate 3.)
- (4) Regarding environmental criterion 4-1-(4), the applicant shall submit a self-prepared certificate issued by the manager of works, where the product is assembled, declaring that CFCs are not used. (Corresponding to Example Certificate 4.)
- (5) Regarding environmental criterion 4-1-(5), the product shall be assembled in a works that is certified in accordance with ISO 14001. The applicant shall submit a copy of registered certificate. (Corresponding to Example Certificate 5.)
- (6) Regarding environmental criterion 4-1-(6), the applicant shall submit a self-prepared certificate issued by the manager of works, where the product is assembled, declaring that the HCFCs are not used in the packaging material. (Corresponding to Example Certificate 6.)
- (7) Regarding environmental criterion 4-1-(7), the applicant shall submit a self-prepared certificate issued by the manager of works, where the product is assembled, declaring that polymers containing halogens are not used in the plastics used for packaging. (Corresponding to Example Certificate 7.)
- (8) Regarding environmental criterion 4-1-(8), the applicant shall submit a certificate to show a manufacturer name, paper brand name, and declare that the recycled-paper content is 100%. (Corresponding to Example Certificate 8.)
- (9) Regarding environmental criterion 4-1-(9), the applicant shall submit a scheme of recovery system. (Corresponding to Example Certificate 9.)
- (10) Regarding environmental criterion 4-1-(10), the applicant shall submit a certificate to show conformance to the Energy Star. (Corresponding to Example Certificate 10.)
- (11) Regarding environmental criterion 4-1-(11), the applicant shall submit a certificate to show conformance to the Energy Star. (Corresponding to Example Certificate 11.)
- (12) Regarding environmental criterion 4-1-(12) to (14), the applicant shall submit a certificate to show conformance to the measuring method defined by the Japan Business Machine Makers Association or the Blue Angel and the actual result of the measurement. (Corresponding to Example Certificate 12.)
- (13) Regarding environmental criterion 4-1-(15) to (17), the applicant shall submit a list showing whether the hazardous substances are contained or not. (Corresponding to Example Certificate 13.)
- (14) Regarding environmental criterion 4-1-(18), the applicant shall submit test data showing that the values are within the range defined in ISO 7779 or the Blue Angel. However, the values

for 71<cpm (numbers of copy sheets per minute) at copying and 31<cpm at waiting may be submitted just for information. (Corresponding to Example Certificate 14.)

- (15) Regarding environmental criterion 4-1-(19), the applicant shall submit a certificate to show conformance to IEC 950. Otherwise, the applicant shall submit a certificate for acquisition of S-mark (Corresponding to Example Certificate 15.)
- (16) Regarding environmental criterion 4-1-(20), the applicant shall submit a certificate to show conformance to VCCI. (Corresponding to Example Certificate 16.)
- (17) Regarding environmental criterion 4-1-(21), if there are any special conditions required for installation, the applicant shall submit a copy of the portion of manual describing those. (Corresponding to Example Certificate 17.)
- (18) Regarding environmental criterion criterion 4-1-(22), the applicant shall submit a list showing whether the hazardous substances are contained or not. (Corresponding to Example Certificate 18.)
- (19) Regarding environmental criterion 4-1-(23), the applicant shall submit a list showing whether the hazardous substances are contained or not. (Corresponding to Example Certificate 19.)
- (20) Regarding environmental criterion 4-1-(24), the applicant shall submit a certificate that the product is clearly identified in conformance to the Guideline for Labeling Office Machines for Securing Safety. (Corresponding to Example Certificate 20.)
- (21) Regarding environmental criterion 4-1-(25), the applicant shall submit a self declaration issued by the manufacturer of plastic materials to assure that the PBB, PBDE, or chlorinated paraffin is not contained in the plastic case of the product. (Corresponding to Example Certificate 21.)
- (22) Regarding environmental criterion 4-1-(26), the applicant shall submit a certificate that the marking of the product conforms to the marked parts list for the plastic or ISO 11469. (Corresponding to Example Certificate 22.)
- (23) Regarding environmental criterion 4-1-(27), the applicant shall submit a description of the scheme, manual, or checklist for disassemble. (Corresponding to Example Certificate 23.)
- (24) Regarding environmental criterion 4-1-(28), in the case when the same type of products are recovered, the applicant shall submit a list which shows that the weight of reused or recycled parts is more than 50% of the total weight of the recovered product. (Corresponding to Example Certificate 24.)

6. Other Requirements

- (1) The product classification shall be identified for each model or each series of models. When it is identified for each series of models, the application may be made only once on condition that each model of the product in a series satisfies the criteria.
- (2) The notice in the lower column of the Eco Mark shall be “Resource Saving, Energy Saving, Less-Wastes”. Furthermore, an environmental marking may be used to show the contents of this notice in the lower column of marking more clearly. In this case, it shall be a three-column description of center justified text in a rectangular box as shown below.



Kiki• shiyouji no enerugi ga sukunai,
(Less-energy in stand-by and use,)
Buhin wo sairiyou• saisenka suru,
(With reused and recycled parts,)
Haikibutu ga sukunai hukusyaki.
(Less-waste copier.)

7. Application Documents

- 1) Application for the Eco Mark certification (Form 2)
- 2) Application for Use of the Eco Mark (Form 3)
- 3) Table 1 (Circle numbers in Table 1 when any materials are attached.)
- 4) Required materials and additional information for Certificates 1 through 24 as attachments

Scheduled Establishment Date: September 1, 1999

This product category shall remain in effect for five years at maximum from the above date of establishment, and is subject to review for change or abolishment if necessary.

1. Understanding the Environmental Background

In the Industrial Environment Vision edited by the Environmental Protection and Industrial Location Bureau, the Ministry of International Trade and Industry, the number of copier units produced in Japan in 1997 and the amount of carbon dioxide discharged from those copiers are calculated. Also, according to the above “Vision”, the copier is composed of about 60% iron, 20% plastics, 10% copper, 7% aluminum, and the rest paper by weight.

2. Applicable Product

There was a discussion in the Working Group (WG) that the applicable products should be limited to those for business use only. However, as there is no way to strictly distinguish between business use and home use, and also no needs to restrict the scope, all electrostatic copiers are included in the applicable product. The term “Electrostatic process copying machine” is used in accordance with the terminology defined by JIS B0137 (Terminology for Copier).

3. Terms and Definitions

4. Certification Criteria

4-1 Details of establishing the environmental criteria

In the process of establishing criteria, the “Table of Environmental impacts at each stage of the product life cycle” is used. Considering the environmental impact for the whole life cycle of the product in view of the environment, impact items expected to be important for determining the environmental criteria are selected and the qualitative and quantitative criteria for those items were established.

The environmental impact items considered in the product category “Copier” are shown in the Table of Environmental impacts at each stage of product life cycle (items identified by ○ or □). Among those items, those selected as the final entry for the environmental criteria are A-1, B-1, B-3, B-5, B-6, B-8, C-2, C-7, D-1, D-2, D-8, D-9, E-5, E-8, E-9, F-1, F-7, and F-8 (items identified by ○).

The items in the table shown by □ column indicate those that were not subject to consideration or considered together with other items. The details of establishing the environmental criteria will be described in the following.

Table “Environmental impacts at each stage of the product life cycle”

Environmental impact	Stage of product life cycle					
	A. Resource extraction	B. Manufac- turing	C. Distribution	D. Use/ Consump- tion	E. Disposal	F. Recycling
1. Resource consumption						
2. Emission of substances affecting global warming	■	■				
3. Emission of ozone-layer-depleting substances	■		■	■	■	■
4. Deterioration of the ecosystem	■	■	■	■	■	■
5. Emission of air pollutants	■		■	■		
6. Emission of water pollutants	■		■	■		■
7. Waste and its disposal	■	■		■		
8. Use and emission of hazardous substances	■		■			
9. Other environmental impacts	■	■	■			■

A Resource extraction Stage

A-1 (Resources consumption)

For this item, the following subject was investigated:

(1) Usage of recycled materials; use of recycled plastics, and use of reused parts.

It is difficult to determine whether recycled iron or aluminum is used in the product. Therefore, the recycling of materials here is limited to plastics.

Also, the conditions of and above are independent with each other, and the requirement is set to meet both conditions.

As for recycled parts of category , more than 80% of virgin plastic ratio is insisted a requisite for the parts at the present technology level. (The recycled plastic ratio less than 20%.) However, in order to promote the recycling of plastics, the recycled plastics are defined as those containing more than 20% of recycled plastics, making the lower limit as 20%.

As for the usage of recycled plastics in , the weight of plastics used, instead of number of parts used or weight ratio of the total product, is adopted as a measure in order that each manufacturer could respond to the requirement as much as possible. The standard of weight is set at 100g which corresponds to about a half of the main cover.

As for the application of reused parts as defined in category , the requirement is set as an actually operable system be established, because the usage ratio is not known for each manufacturer. That is, when reused parts are incorporated, the applicant will submit a list of those reused parts. Also, when reuse-scheduled parts are incorporated, the applicant will submit a declaration to assure their reuse (e. g. a scheme of recovery system) and a list of reuse-scheduled parts.

B Manufacturing Stage

B-1 (Resources consumption)

For this item, the following subjects were investigated:

(1) To make a cycle as long as possible.
(2) Long product life.

As for the subjects (1) and (2), the length of life of the spare parts is a problem, and the supply duration of spare parts is set at more than seven (7) years after production is ceased, in accordance with the standard of the Japan Business Machine Makers Association.

B-3 (Emission of ozone layer depleting substances)

For this item, the following subject was investigated:

(1) The usage and emission of CFCs shall be well considered.

As the conformance to the above is necessary in the production stage, this item was selected to be included in the criteria.

B-5 (Emission of air pollutants)

For this item, the following subject was investigated:

(1) The emission of air pollutants shall be well considered in the production process.

It is a matter of course to follow the Air Pollution Control Law in the production, and it is a kind of self-certification. Therefore, the requirement is set as the product will be produced in an ISO 14001

certified works. Also, the discussion was made on how far this clause should be applied to the production process. As it will be difficult to apply this clause to each individual part, the range of application was limited to the assembly works.

B-6 (Emission of water pollutants)

For this item, the following subject was investigated:

(1) The emission of water pollutants shall be well considered in the production process.

Same as B-5.

B-8 (Use and emission of hazardous substances)

For this item, the following subject was investigated:

(1) The usage of hazardous substances should be less, or their emission should be well considered.

Same as B-5.

C Distribution Stage

C-1 (Resources consumption)

For this item, the following subjects were investigated:

(1) The product should be made light and the resources consumption in the transportation should be minimized.
(2) The packaging materials used in transportation should be used repeatedly.
(3) The packaging shall be simple and reusable.

As for the subject (1), the volume reduction is more effective than the weight reduction. Further, the subjects (2) and (3) are always considered by manufacturers and, although required from the qualitative aspects, those are also difficult to prove. Therefore, these subjects were not selected as items to be included in the criteria.

C-2 (Emission of substances affecting global warming)

For this item, the following subject was investigated:

(1) Relative to the packaging materials, the usage and emission of HCFCs should be well considered .

HCFCs are used as a washing agent in the manufacturing process of semi-conductors and liquid crystals. There is no alternative technology at the moment, and therefore the application is limited to packaging materials.

C-7 (Waste and its disposal)

For this item, the following subject was investigated:

(1) Any hazardous substances shall not be used in the packaging materials.
In the same way as the Blue Angel, the requirement is determined as “the polymers containing halogens shall not be used in the plastics used for packaging”.

D Use/Consumption Stage

D-1 (waste and its disposal)

For this item, the following subjects were investigated:

- (1) The recycled paper could be used.
- (2) The toner container shall be reusable.
- (3) Copying on both sides shall be possible.

As for the subject (1), it was considered a required condition in view of the “Applicable Paper”, and the requirement was set as “at least one or more of the papers usable in the product shall be the recycled paper with recycled-pulp of 100%”, in accordance with the Blue Angel.

As for the subject (2), the recovery of toner is considered meaningful, and therefore the preparation of a “recovery system” was set to be required.

As for the subject (3), the requirement was set to be the compliance to the Energy Star.

D-2 (Emission of substances affecting global warming)

For this item, the following subjects were investigated:

- (1) Energy saving design shall be applied.
- (2) Electric power consumption should be low (complying with the Energy Star).

As for the subjects (1) and (2), the energy saving design and low-power consumption were considered the requirement in regard to the emission of global warming substances, and the criteria was set to be described as “to comply with the Energy Star.”

D-8 (Use and emission of hazardous substances)

For this item, the following subjects were investigated:

- (1) The discharge of ozone, dust, and styrene should be low.
- (2) Prohibition of usage of hazardous substances in the toner; carcinogenic- suspect substances listed by IARC, EU’s Directive on Hazardous Substances, ACGIH, Japan Industrial Hygiene Association, excluding those of which safety in use is established such as carbon black; Azo dyestuffs which could possibly generate specific amines; Mercury, lead and cadmium.

As for the amount of emission in the subject (1), when the test method will be already established by the Japan Business Machine Makers Association, conformance to that method will be required, and if not established yet, then the method by the Blue Angel should be followed.

The hazardous substances contained in the toner in the subject (2) shall follow the rule by the Blue Angel. Although carcinogenic substances are listed in TRGS 905 and MAK List⁴⁾, the former is included in the IARC and the latter can be considered in . Considering the international acceptability, the IARC was adopted. However, the carbon black was set out of scope.

As for , the MAK List was adopted in accordance with the Blue Angel.

As for , the requirement was set as “mercury compounds, lead compounds, cadmium compounds, and Chromium(VI) compounds shall not be included as prescribed ingredients”, in accordance with the Blue Angel.

The level defined by IARC is in accord with that defined in the “Study for Constructing the Summary of Chemical Substances”, consigned by the Environment Agency of Japan in 1997. ⁹⁾

D-9 (Other environmental impacts)

For this item, the following subjects were investigated:

- (1) Lower noise generation and electromagnetic field effects
- (2) Not to deteriorate work environment with noise
- (3) Low noise
- (4) Consideration for equipment safety and electromagnetic adaptability
- (5) Clear description of installation condition

The electromagnetic field effects in the subject (1) were discussed in relation to the subject (4). ISO 7779 and ISO 9296 are the standard for noise which correspond to the subjects (1) to (3). ISO 7779 is more common while ISO 9296 includes statistical processing (considering the risk, etc.) Also, ISO 9296 deals solely with mass production products and has some restrictions such as to require sampling tests. Accordingly, the requirements were set to follow ISO 7779. For the label, the values defined in the Blue Angel were also adopted.

As for the safety of products, the requirements were set to follow IEC 950, which is the most common international standard, and the Electric Appliances Law. However, the shape of power socket plugs was set to comply with the JIS Standard when it will be established.

As for the electromagnetic adaptability, the requirements were set to comply with VCCI.

As for the subject (5), any special requirements relative to the amenity were asked to be explicitly described in the instruction manual when applicable. (e.g. Necessity of forced ventilation when installing more than a certain number of equipment in the same area, etc.)

E Disposal Stage

E-1 (Resource consumption)

For this item, the following subjects were investigated:

- (1) Low resource consumption in the disposal process
- (2) Ease of disposal

The amount of waste originated from copiers is less compared to that for automobiles or household electric appliances. (Copier's ratio of recycle is high.) Even if the product eventually becomes to shredder dusts, the required electric power is small. Furthermore, the subject (2) is in conflict with the promotion of "Recycling" dealt with in F. Therefore, those were not included in the item of criteria.

E-2 (Emission substances affecting global warming)

For this item, the following subject was investigated:

- (1) Low fossil fuel consumption in the disposal process

Similar to the case explained in E-1, expended products except for reuse parts become to shredder dusts and are buried or reclaimed eventually. As the amount of waste is relatively small compared to automobiles and home electric appliances, and also the amount incinerated is small, this subject was not included in the criteria items.

E-5 (Emission of air pollutants)

For this item, the following subjects were investigated:

- (1) The emission of pollutants shall be below a certain level when the product is disposed.
- (2) The emission of air pollutants shall not occur when disposed.
- (3) Technical requirements for plastics used in the case and case parts
- (4) Prohibition of hazardous substances in the plastic (Prohibit use of bromide containing flame deterrent in the case material, excluding when recycled materials are incorporated.)

As for the subjects (1) to (4), the discussion at the moment was focused on the flame deterrent for plastics relative to dioxin and it was set to follow the rules of Japan Environment Association. ¹⁰⁾

E-6 (Emission of water pollutants)

For this item, the following subjects were investigated:

- (1) Soil and water shall not be polluted in the disposal process.
- (2) Effects of elution to surrounding water environment shall not occur in the burial process at disposal.

These subjects were determined to be investigated in E-8.

E-7 (Waste and its disposal)

For this item, the following subject was investigated:

- (1) The amount of waste to be disposed should be small or the disposal should be easy.

This was set to be the same as E-1.

E-8 (Use and emission of hazardous substances)

For this item, the following subjects were investigated:

- (1) Prohibition of usage of hazardous substances in the battery (lead, cadmium, mercury)
- (2) Prohibition of usage of hazardous substances in the photosensitive material
- (3) No danger of biological menace when disposing the product
- (4) No danger against fauna and flora

As for the subjects (1) and (2), the requirements were set to follow the Blue Angel, and it was determined as “not to contain cadmium compounds, lead compounds, or mercury compounds in batteries and light – sensitive substances”.

As for the subjects (3) and (4), the lead in electronic circuit boards and solder was discussed as one of the hazardous substance. However, the subject was not incorporated in the criteria as there are no alternative technology at the moment.

E-9 (Other environmental impacts)

For this item, the following subject was investigated:

- (1) No scattering of dust in the disposal process

This subject was decided to be investigated in D-1, and the toner cartridge labeled in accordance with

the “Guideline for Labeling Office Machines for Securing Safety⁷⁾” was prescribed to be used.

F Recycling Stage

F Recycling Stage

F-1 (Resource Consumption)

For this item, the following subjects were investigated:

- (1) Consumption of resources required in the recycling process should be small.
- (2) Marking of plastics
- (3) Easy to disassemble (Preparation of checklist similar to the Blue Angel)
- (4) Reuse and recycling (More than 50% in weight of the recovered product shall be reused or recycled.)

As for the subject (1), it was not included in the criteria because the resource consumption is generally less in the recycling than in the new production.

For the subject (2), the requirement was to follow ISO 11469 as in the case of the Blue Angel. This Working Group has discussed about the meaning of the marking itself, and there were opinions that the ISO Standard is not appropriate for the level of sizes less than the weight of 25g or flat area of 200mm². Therefore, the requirement was included in the criteria for the reason of the international consistency, not for environmental aspects. Also, plastic parts presently used (or distributed) are not necessarily marked. Therefore, the plastics that are not marked are set to be usable in the reuse parts to make the non marked plastics reusable.

As for the subject (3), the standard or checklist was set to be submitted if such a scheme is present.

As for the subject (4), the weight of reused/recycled parts required was set to be more than 50% considering the actual status of manufacturers.

F-2 (Emission of substances affecting global warming)

For this item, the following subject was discussed:

- (1) Low fossil fuel consumption in the manufacturing process of recycled product

Considering the LCA of the copier, it is confirmed that CO₂ will be less when recycled parts are used in the main frame compared with using virgin parts.¹¹⁾ However, its quantitative measurement and standardization were judged to be difficult. Therefore, this subject was not included in the criteria.

F-5 (Emission of air pollutants)

For this item, the following subject was investigated:

- (1) Air pollutants shall not be discharged in the manufacturing process of recycled product.

This was set to be the same as F-2.

F-7 (Waste and its disposal)

For this item, the following subjects were investigated:

- (1) Shall be easy to recycle.
- (2) Recovered product should have many parts that will be reused.
- (3) The container of consumables shall be recovered. (The toner container could be collected if the user asks so.)

As the subjects (1) and (2) were considered to be included in F-1, those were not selected for the criteria.

As for the subject (3), the recovery of toner is considered meaningful, and the requirement was set as “there shall be a recovery system”.

F-8 (Use and emission of hazardous substances)

For this item, the following subject was investigated:

(1) Hazardous substances shall not be discharged in the recycling process.
--

This was set to be the same as B-8.

4-2 Quality criteria

(1) In order to secure the minimum level of product quality in accordance with ISO 14024, the domestic standards (e.g. JIS Standards) were to be followed if available. When they are not available, the product is required to have a quality defined by similar standards in order to promote the diffusion of the Eco Mark products.

5. Others

(1) Indications in the bottom of the Eco Mark

As there are too many criteria items, the indication was set to be just “Resource Saving, Energy Saving, Less-wastes”.

6. References

- 1) “Study Report on the Recovery/Recycle of Used Office Equipment (in Japanese)”, March 1998, Japan Business Machine Makers Association.
- 2) “International Energy Star Program”, The Energy Conservation Center, Japan, <http://www.eccj.or.jp>
- 3) “Kopiergerate RAL-UZ 62 neu”, December 1998.
- 4) “List of MAK and BAT Values 1997”, WILEY-VCH.
- 5) “EU’s List of Hazardous Substances/ ANNEX I”, April 1997.
- 6) “IARC”, <http://www.k-erc.pref.kanagawa.jp/kis-plus/search.asp?>.
- 7) “Guideline for Labeling Office Machines for Securing Safety (in Japanese)”, May 1998, Japan Business Machine Makers Association.
- 8) “Environmental Protection and Industrial Location Bureau, the Ministry of International Trade and Industry ed./Industrial Environment Vision (in Japanese)”, Report of the Global Environment WG, Industrial Structure Review Committee – Integration of environmental concerns into the corporate activities based on the new development of environmental problems.
- 9) “FY1997 Environment Agency of Japan Consignment, Study for Constructing the Summary of Chemical Substances (in Japanese)”, March 1998, Japan Environment Association.
- 10) “Eco Mark News, No. 10 (in Japanese)”, September 8, 1998, Use of Flame Deterrent in the Eco Mark Certified Products.
- 11) “Case Report of the Application of Life Cycle Assessment to Copier (in Japanese)”, March 1998, Environment Technology Specialists Group, Environment Committee, Japan Business Machine Makers Association.

Table 1 List of Certificates

No	Criteria	Item	Required Certificate, etc.	Example Format	Required	Check by Secretariat
1	4-1-(1)	Usage of recycled plastic parts	List of recycled plastics weight and materials certificate	Certificate 1	(compulsory)	
2	4-1-(2)	Usage of reuse/reuse-scheduled parts	List of Reuse/Reuse-scheduled Parts and Certificate	Certificate 2		
3	4-1-(3)	Supply duration of spare parts	List of spare parts supply duration or supply duration of each spare part described in the instruction manual	Certificate 3		
4	4-1-(4)	Non usage of CFCs	Self certificate issued by the representative or manager of the works where the product is assembled	Certificate 4		
5	4-1-(5)	Consideration on discharge of air/water pollutants and toxic substances	Registered certificate of the assembly works for ISO 14001	Certificate 5		
6	4-1-(6)	Non usage of HCFCs in packaging materials	Self-prepared certificate issued by the representative or manager of the works where the product is assembled	Certificate 6		
7	4-1-(7)	Non containment of halogen containing polymers in plastics used for the packaging material	Self-prepared certificate issued by the representative or manager of the works where the product is assembled	Certificate 7		
8	4-1-(8)	Usage of recycled paper	List of papers with 100% recycled paper content and material certificate	Certificate 8		
9	4-1-(9)	Recovery of toner container	Scheme of recovery system	Certificate 9		
10	4-1-(10)	Copying on both sides	Certificate that shows compliance with the Energy Star	Certificate 10		
11	4-1-(11)	Low power consumption	Certificate that shows compliance with to the Energy Star	Certificate 10		
12	4-1-(12)	Discharge of dust	Certificate that shows compliance with the measuring method of the Japan Business Machine Makers Association or the Blue Angel, and its measurement results	Certificate 11		
13	4-1-(13)	Emission of ozone	Certificate that shows compliance with the measuring method of the Japan Business Machine Makers Association or the Blue Angel, and its measurement results	Certificate 11		
14	4-1-(14)	Emission of styrene	Certificate that shows compliance with the measuring method of the Japan Business Machine Makers Association or the Blue Angel, and its measurement results	Certificate 1		
15	4-1-(15)	Non containment of heavy metals in toner	List that describes whether subject substance is contained or not	Certificate 13		
16	4-1-(16)	Non containment of azo cororing agents in toner	List that describes whether subject substance is contained or not	Certificate 13		
17	4-1-(17)(a)	Non containment of other hazardous substances in toner (EU Hazardous Materials Directive)	List that describes whether subject substance is contained or not	Certificate 13		
18	4-1-(17)(b)	Non containment of other hazardous substances in toner (IARC)	List that describes whether subject substance is contained or not	Certificate 13		
19	4-1-(17)(c)	Non containment of other hazardous substances in toner (Danger symbol for total product)	List that describes whether subject substance is contained or not	Certificate 13		
20	4-1-(17)(d)	Non containment of other hazardous substances in toner (R43 as a danger symbol for total product)	List that describes whether subject substance is contained or not	Certificate 13		
21	4-1-(18)	Noise	Certificate that shows compliance with ISO 3339 or the Blue Angel	Certificate 14		
22	4-1-(19)	Safety of equipment	Certificate of compliance with IEC 50 or authorization for S-mark	Certificate 15		
23	4-1-(20)	Electromagnetic adaptability	Certificate that shows compliance with VCCI	Certificate 16		
24	4-1-(21)	Installation conditions	Part of description in the instruction manual for the special matters for installation condition	Certificate 17	(optional)	
25	4-1-(22)	Non containment of heavy metal in battery	List that describes whether subject substance is contained or not	Certificate 18		
26	4-1-(23)	Non containment of heavy metal in photosensitive material	List that describes whether subject substance is contained or not	Certificate 19		
27	4-1-(24)	Hndling of toner cartridge	Certificate of using product identified in accordance with "the Guideline for Labeling Office machines for Securing Safety"	Certificate 20		
28	4-1-(25)	Non containment of flame deterrent in plastic case	List that describes whether subject substance is contained or not, and self-declaration by plastic manufacturer	Certificate 21		
29	4-1-(26)	Marking of plastics	List of marked plastic part and certificate of compliance with ISO 11469	Certificate 22		
30	4-1-(27)	Ease of disassemble	Scheme or manual or checklist	Certificate 23		
31	4-1-(28)	Reuse or recycling of recovered product	List of reuse/recycle parts and their weight fraction	Certificate 24		

Example Format

Certificate 1 List of Recycled Plastics Weight & Raw Materials Certificate

NO	Point Using Recycled Plastic Part	Weight of Recycled Plastic Part (g)	Ratio of Recycled Plastic (%)	Materials Certificate
1	Front Cover	80	20	Material Certificate 1
2	Rear Cover	20	20	Material Certificate 2
:				
Total		100 g	20 %	

Material Certificate 1 (Document with official seal by the material supplier)

Material Certificate 2 (Document with official seal by the material supplier)

Certificate 2 List of Reuse Parts or List of Reuse-scheduled Parts & Certificate

NO	Point of Use	NO	Point of Use(Scheduled)	Explanation of the Recovery system
1	Copy Drum	1	Drive	
2		2		
:		:		
n		n		

Certificate 3 List of Spare Parts Supply Duration

NO	Name of Spare Part	Supply Duration
1	Toner Cartridge	7 Years
2		
:		
n		

More than 7 years

Alternatively, the supply duration of each spare part described in the instruction manual

Certificate 4 Non Usage of CFCs

No CFCs are used in the manufacturing process. Manager of the Works Seal

Certificate 5 Consideration on the Discharge of Air and Water Pollutants and Hazardous Substances.

This works is certified for ISO 14001.
--

Certificate 6 Non Usage of HCFCs in the Packaging Materials

CFCs are not used in the packaging materials. Manager of the Works Seal
--

Certificate 7 Non Usage of Halogen-containing Polymers in the Plastics for Packaging

Halogen-containing polymers are not used in the plastics for packaging. Manager of the Works Seal
--

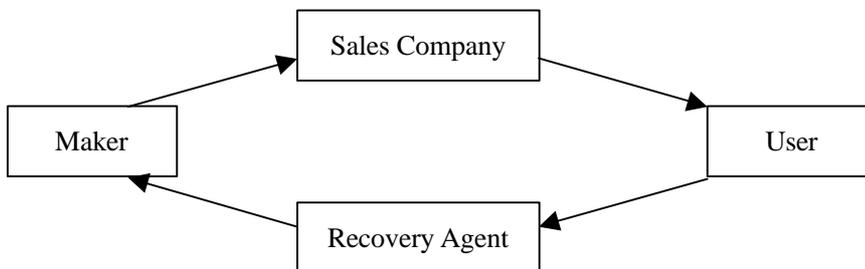
Certificate 8 List of Papers with 100% Recycled Paper Content & Material Certificate

NO	Maker	Brand Name	Certificate
1	N Papermill	White	Certificate 1
2			
:			
n			

n should be more than 1.

Material Certificate 1 (Document with official seal by the material supplier)

Certificate 9 Scheme of Recovery System



Certificate 10 Copying on Both Sides

Copy Speed: 30 sheets/min

		Applicable
Both Sides Copy Function	20 sheets/min not required	
	44 sheets/min optional	
	> 44 sheets/min default	

Certificate that shows compliance with the Energy Star

Certificate 11 Low Power Consumption

Copy Speed: 30 sheets/min

		Measured	Compliance
Time to switch over to low-power mode (min)	15 min	15 min	
Power consumption at low-power mode (Wlow)	20 sheets/min not required		
	44 sheets/min < 3.85 × Copy Speed+5W	90 W	
	> 44 sheets/min < 3.85 × Copy Speed+5W		
Recovery time from low-power mode T3 (min)	20 sheets/min not required		
	44 sheets/min 30 sec	20 sec	
	> 44 sheets/min 30 sec recommended		
Power consumption at off-mode (Wom)	20 sheets/min 5 W		
	44 sheets/min 15 W	10 W	
	> 44 sheets/min 20 W		
Time to switch over to off-mode T2 (min)	20 sheets/min 30 min		
	44 sheets/min 60 min	50 min	
	> 44 sheets/min 90 min		

Certificate that shows compliance with the Energy Star

Certificate 12 Emission of Hazardous Substances (Dust, Ozone, Styrene)

	Criteria	Measured	Compliance
Dust Emission	< 0.075 mg/m ³	0.03 mg/m ³	
Ozone Emission	< 0.02 mg/m ³	0.01 mg/m ³	
Styrene Emission	< 0.07 mg/m ³	0.03 mg/m ³	

Certificate that shows compliance with the Japan Business Machine Makers Association or the Blue Angel

Certificate 13 Toxic Substances in the Toner

Category	Sub-category	NO	Substance	Contained	
Heavy Metal		1	Mercury compounds	Yes / <input type="radio"/> No	
		2	Lead compounds	Yes / <input type="radio"/> No	
		3	Cadmium compounds	Yes / <input type="radio"/> No	
		4	Cr (VI) compounds	Yes / <input type="radio"/> No	
Azo Coloring Agent		1	MAK III A1	Yes / <input type="radio"/> No	
		2	MAK III A2	Yes / <input type="radio"/> No	
		3	MAK III B	Yes / <input type="radio"/> No	
Other	EU Hazardous Material Directive	1	Annex I R26	Yes / <input type="radio"/> No	
		2	Annex I R27	Yes / <input type="radio"/> No	
		3	Annex I R40	Yes / <input type="radio"/> No	
		4	Annex I R42	Yes / <input type="radio"/> No	
		5	Annex I R45	Yes / <input type="radio"/> No	
		6	Annex I R46	Yes / <input type="radio"/> No	
		7	Annex I R49	Yes / <input type="radio"/> No	
		8	Annex I R60	Yes / <input type="radio"/> No	
		9	Annex I R61	Yes / <input type="radio"/> No	
		10	Annex I R62	Yes / <input type="radio"/> No	
		11	Annex I R63	Yes / <input type="radio"/> No	
		12	Annex I R64	Yes / <input type="radio"/> No	
		IARC	1	Carcinogenic	Yes / <input type="radio"/> No
		Danger symbol indication for total product	1	Annex I No.2	Yes / <input type="radio"/> No
			2	Annex I R43	Yes / <input type="radio"/> No

Certificate 14 Noise

Copy Speed: 30 sheets/min

() denotes the value defined in the Blue Angel			Measured	Compliance
When copying	30 sheets/min	63 (66) dB(A)	60	
	50 sheets/min	68 (71) dB(A)		
	70 sheets/min	75 (78) dB(A)		
Stand-by	30 sheets/min	40 (40) dB(A)	40	
	50 sheets/min	Measurement not required (Measurement not required)		
	70 sheets/min	Measurement not required (Measurement not required)		

Certificate that shows conformance to ISO 7779 or the Blue Angel

Certificate 15 Certificate of Product Safety

This product is in compliance with IEC 950.

or

This product is certified with S-mark.

Certificate 16 Certificate of Electromagnetic Adaptability.

This product is based on VCCI standards.

Certificate 17 Description of Special Matters on the Installation Conditions.

Forced ventilation should be applied when more than five (5) of this equipment will be installed concentrically.

Certificate 18 Non Containment of Heavy Metals in the Battery

NO	Heavy Metal	Contained
1	Mercury compounds	Yes / <input checked="" type="radio"/> No
2	Lead compounds	Yes / <input checked="" type="radio"/> No
3	Cadmium compounds	Yes / <input checked="" type="radio"/> No

Certificate 19 Non Containment of Heavy Metals in the Photosensitive Material

NO	Heavy Metal	Contained
1	Mercury compounds	Yes / <input checked="" type="radio"/> No
2	Lead compounds	Yes / <input checked="" type="radio"/> No
3	Cadmium compounds	Yes / <input checked="" type="radio"/> No

Certificate 20 Handling of the Toner Cartridge

This product is identified in conformance to “ the Guideline for Labeling Office Machines for Securing Safety”.

Certificate 21 Non Containment of Flame Deterrent in the Case Plastics

NO	Flame Deterrent	Contained
1	PBB	Yes / <input checked="" type="radio"/> No
2	PBDE	Yes / <input checked="" type="radio"/> No
3	Chlorinated paraffin	Yes / <input checked="" type="radio"/> No

Self-declaration by plastic manufacturers (Document under seal by the material supplier)

Certificate 22 List of Marked Plastic Parts

NO	Usage Point	Part Weight (g)	Flat Area of Part (mm ²)
1	Sorter part	100	1000
:			
n			

More than 25 g or 200 mm²

Alternatively, a certificate to identify conformance to ISO 11469.

Certificate 23 Ease of Disassemble

This equipment is based on the ... standard regarding to ease of disassemble.

Certificate 24 List of Reuse/Recycle Parts and their Weight Fraction in the Recovered Product

NO	Reuse/Recycle Part	Part Weight (g or kg)	Weight Fraction (%)
1	Case Frame (Iron)	50 kg	50
2	Reinforcement (Aluminum)	10 kg	10
:	:		
	Total	Total weight 100 kg	60

More than 50%