

## Eco Mark Product Category No.133

### “Digital Duplicator Version1.11”

### Certification Criteria

—Applicable Scope—

- A. New digital duplicators
- B. Reused digital duplicators

Established: June 1, 2005  
Revised: April 1, 2022  
Expiration date May 31, 2025

Japan Environment Association  
Eco Mark Office

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

**Eco Mark Product Category**  
**No.133 “Digital Duplicator Version1.11” Certification Criteria**  
**A. New digital duplicators**

Japan Environment Association  
Eco Mark Office

**1. Purpose of Establishing Certification Criteria**

Digital duplicators are machines which print by first preparing a master, and then by applying ink to this master. Currently, there are three major manufacturers in Japan who dominate most of the domestic and worldwide digital duplicator market shares. Combined, they shipped about 40,000 units within the country in 2003.

Although energy is consumed to prepare the master used by digital duplicators, this load is distributed to the entire paper printed based on the master. In addition, digital duplicators do not use heat for printing the ink on paper. Since no heater is needed during the process, the power consumption is reduced. For these reasons, less energy is consumed when a greater number of sheets are printed on a digital duplicator; printing cost per sheet is also reduced. These features demonstrate that the digital duplicator is appropriate for mass printing, and are broadly used in educational institutions such as schools, and for such purposes as printing fliers and meeting materials.

In this way, the recommendation of products with outstanding energy consumption efficiency for machines used extensively at schools and offices will lead to the reduction of power consumed and CO<sub>2</sub> emissions. Digital duplicators were designated as a specific procurement item by the 2004 Law on Promoting Green Purchasing (Law Related to Promoting Procurement of Eco Products by the Government, etc.). One of the designation requirements is energy saving during the actual use stage of the product.

In addition, print finish is stable even with low-grade printing paper such as rough paper (straw paper) as photographic fixing by heat is not carried out, enabling the use of various types of paper. Such features will contribute to both user convenience in the procurement of paper and environmental preservation.

Hazardous substances which may be used in the mainframe of the printer are governed by the EU RoHS Directive (Restriction of the Use of Certain Hazardous Substances) in electric and electronic machines, and measures for heavy metals and chemical substances such as lead, cadmium, and specific bromine-based flame-retardants are being promoted. Eco Mark’s recognition of the pioneering efforts of businesses is anticipated to facilitate such movements. In terms of resource circulation, it is important to adopt designs incorporating the “3Rs” (reduce, reuse, and recycling), and actually further promote the reuse and recycling of machine parts.

Regarding the disposal of ink and masters used as expendables, consideration was given to hazardous substances, such as recovery after use and environmental concerns. Extensive reviews were carried out on chemicals such as volatile organic compounds (VOCs), which have drawn increasing attention in recent years for ink, and also on the reduction of impact during disposal for masters, as they are disposed after use.

## 2. Applicable Scope

New digital duplicators.

## 3. Terminology

Ink	Emulsion black ink used for digital duplicators.
Ink container	Container for ink.
VOC (volatile organic compound) constituents	Volatile organic compounds classified as “highly volatile organic compounds” and “volatile organic compounds” in the classification of chemical substances by WHO (World Health Organization).
Collection rate	Percentages of units collected in the products disposed during the past one-year period. The number of products disposed can be regarded as the number of units sold.
Casing	External cover
Casing parts	Parts which protect the fixtures from environmental impact, and the users from contact with moving, radiating, or electrically charged components.
Recycled plastic	Plastic material made from pre-consumer materials or post-consumer materials.
Pre-consumer materials	Materials or rejected products generated from a disposal route in a product manufacturing process, excluding those that are recycled within the same process (plant).
Post-consumer materials	Materials or products disposed of after they have been used as goods.
Recycled plastic part	Plastic part which contains recycled plastics.
Recovery rate	The mass rate of all parts that are reused or recycled, among the ink containers collected.
Reused parts	Parts that have previously been used.
Reuse/material recycling rate	The mass rate of all parts that are reused, recycled, energy recovered, conversion to oil, gasification, or subject to blast furnace reduction or conversion to chemical materials by coke oven, among the ink containers collected.
Sub-assembly	Assembly which consist of at least two components that are joined together in a force- or positive-fit manner.

3R design check list	The checklist to require the design to take the concept of 3R (Reuse, Reduce, Recycle) into consideration. The checklist consists of three requirement groups such as “Structure and joining technique”, “Selection and marking of materials” and “longevity” and the items are grouped by M-requirement and S-requirement.
M requirement	In the 3R design checklist, the requirement which must all be met, as same as the criterion in the criteria document.
S Requirement	In the 3R design checklist, the requirement which should be met, however, do not influence the outcome of the certification even if it is not realized. S requirement is positioned as item, which needs to be discussed at the time of criteria revision, and has the role to convey environmental targets to consumers and applicants.
Chassis	Parts with functions serving as a frame to support the main parts of machines.
Prescribed constituents	Material components added for the intended purpose of giving certain characteristics to the products. Impurities that are technically unavoidable in the manufacturing process are not included.
Digital duplicator	Fully-automatic mimeograph printer with digital binding function
Electrical/electronic sub-assembly	Assembly which include at least one electronic or electric part.
Plastics	Materials composed of a single or multiple polymer, plus additives, fillers, etc. that are added to the polymer(s) to give it (them) specific characteristics.
Aromatic components	Aromatic hydrocarbon compounds detected from ink solvent by applying the “Testing method of Liquid petroleum products -- Testing method of components (JIS K2536)” .
Polymer	High molecular material which is the main constituent of plastic.
Homopolymer	Single polymer. Polymers consisting of one type of monomer.
Copolymer	Polymers consisting of two or more types of monomers.
Polymer alloy (Polymer blend)	General name of multicomponent polymers obtained by the chemical binding of the polymers of more than two components. Polymer blend is the physical blending of different types of polymers.
Maintenance parts	Replacement parts required for maintaining machine performance
Master	Sheet on which images are printed. Generally, composed of Japanese paper (natural or synthetic fiber) and film pasted together.
Material recycling	Recycling of material, excluding the recovery of energy, conversion to oil, gasification, blast furnace reduction, conversion to chemical materials by coke oven.

## 4. Certification Criteria and Certification Procedure

### 4-1. Environmental Criteria and Certification Procedure

#### <General rule>

Analysis and testing bodies shall be run in accordance with ISO/IEC 17025(equivalent JIS Q17025:). Applicants shall bear the expenses for preparing documents and for the analyses.

Special requirements in the event the analysis or tests are performed at the laboratories of the manufacturer: the laboratories of the manufacturer may perform the required analysis and/or tests if either of the following requirements is complied: (a) that competent government authorities supervise the sampling and analysis procedures or have authorized the implementation of the analysis and tests, or (b) that the manufacturer has established quality assurance system covering sampling and analysis and holds ISO 9001 (equivalent standard JISC Q9001) or has ISO9001-compatible internal standards on quality assurance covering sampling and analysis and the measurement is made in conformity with them.

#### <Special requirements, if performed at the laboratories of manufacturers>

The manufacturer should have developed a quality system for sampling and analysis.

#### 4-1-1 3R Design of Equipment

(1) Equipment shall conform to Attachment 1 “3R Design of Equipment”.

##### [Certification Procedure]

Compliance with this item shall be indicated in attached certificates. Requirements shall be included in Attachment 1 “3R Design of Equipment” and submitted.

(2) Plastic casing parts 25g or more shall be made of one homopolymer or copolymer. Polymer blends (polymer alloy) are permitted.

##### [Certification Procedure]

Compliance with this item shall be indicated in attached certificates. The applicant shall submit a document and list (Form A) of plastic materials used.

(3) Plastic casing parts 25g or more shall be made of four or fewer types of mutually separable polymers or polymer blends. If labels, etc. are difficult to separate, they must be made of the same material as the sections to which they are pasted or of such materials that do not obstruct recycling.

##### [Certification Procedure]

Compliance with this item shall be indicated in attached certificates. In the event labels, etc. are attached, in addition, the possibility of easy separation (or not) and

the material identity of the labels, etc. shall be stated in the list of plastic materials used (Form A) and submitted.

#### 4-1-2 Requirements for plastic materials

- (4) Any one of parts weighing at least 25g or more shall be recycled or reused plastic parts at the least.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

- (5) Polymer containing halogen shall not be used for casing plastic parts weighing 25g or more. In addition, organohalogen compounds containing flame retardants shall not be added as prescribed constituents.

However, this criterion shall not apply to the following;

\*Fluoroorganic additives used for improving the physical properties of plastics, provided they are not present in concentrations greater than 0.5 weight percent.

\*Fluorinated plastics such as PTFE.

\*Large reused plastic parts marked in accordance with (8) or ISO11469 (JIS K 6999:) for marking.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. In addition, the list of plastic materials used (Form A) shall be submitted indicating the manufacturer of the raw material, and whether polymers containing halogens and organic halogenides

- (6) For flame retardants used as prescribed constituents in casing plastic parts weighing 25g or more, report their names and CAS numbers. However, instead of reporting their names and CAS numbers, description conforming to the description method of "ISO1043-4 (equivalent JIS standard JIS6899-4:)" code number may be submitted.

Also, report the research status (or CAS No., if used) on the use or no-use of relevant flame retardant classified as SVHC (Substances of Very High Concern) by the REACH regulation.

In addition, this criterion shall not apply to the following;

\* Large reused plastic parts marked in accordance with (8) or ISO11469 (JIS K 6999) for marking.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. In addition, the names and CAS numbers of the flame retardants used in casing plastic parts weighing above 25g shall be submitted. If the names and CAS numbers cannot be submitted, information may be included according to the ISO1043-4(JIS6899-4) code number system. (Form A) In addition, the research status (or CAS No., if used) on the use or no-use of relevant flame retardant classified as SVHC (Substances of Very High Concern) by the REACH regulation shall be entered in

the description example A.

(7) Plastic casing parts weighing 25g or more shall not contain materials in Table 1 below that are classified into CMR category 1A or 1B of Table 3 in Annex VI of Regulation (EC) No. 1272/2008, or substances classified as carcinogenic, mutagenic, or toxic to reproduction in TRGS905 as prescribed constituents. In addition, antimony trioxide shall not be used as a prescribed constituent. However, this criteria item shall not apply to the following:

\*Fluoroorganic additives used for improving the physical properties of plastics, provided they do not exceed 0.5 weight percent.

\*Fluorinated plastics, for example PTFE.

\* Large reused plastic parts marked in accordance with (8) or ISO11469 (JIS K 6999) for marking.

Table 1. List of restricted materials

Hazard class	Category	
	Hazard category	CLP-regulation (EC) No. 1272/2008
Carcinogenicity	Carc. 1A, 1B	H350 May cause cancer
Carcinogenicity	Carc. 1A, 1B	H350i May cause cancer if inhaled
Germ cell mutagenicity	Muta. 1A, 1B	H340 May cause genetic damage
Reproductive toxicity	Repr. 1A, 1B	H360 May damage fertility or the unborn child
Substances of the so-called candidate list according to REACH Article 59. The version of the candidate list at the point of application applies.		

[Certification Procedure]

Compliance with this item and a method to check shall be indicated in attached certificates. In addition, the list of plastic materials used (Form A) shall be submitted indicating whether any of the substance specified above are added. In addition, it is recommended that checking is performed based on JIS Z 7201 "Management of chemical substances in products - Principles and guidelines"

(8) Plastic parts shall be marked according to ISO11469 (equivalent JIS standard JIS K 6999) and in compliance with ISO1043/Parts 1 to 4. (equivalent to JIS standard JISK6899 1-4). However, this need not apply to the parts with weight less than 25g or flat area less than 200mm<sup>2</sup>, or using reused plastics.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. The applicant shall submit the marked parts list for the plastic upon request of the Eco Mark Office. (Example 1)

(9) The content rate of lead, mercury, cadmium, and those compounds, hexavalent chromium compounds, Polybrominated biphenyl (PBB), Polybrominated diphenylether (PBDE) or Phthalate esters in the product shall comply with Annex II (Table 2) of the Commission Delegated Directive (EU)2015/863 amending

Annex II to RoHS(II) Directive. However, this does not apply to those substances specified in Annex III.

In addition, the product shall have no flame retardant of short-chain chlorinated paraffin (the number of chained C is 10 to 13 and contained chloride concentration is 50% or over) added as prescribed constituents.

Table 2. Content rate

Material	Content rate[wt%]
Lead and its compounds	≤ 0.1
Mercury and its compounds	≤ 0.1
Cadmium and its compounds	≤ 0.01
Hexavalent chromium compounds	≤ 0.1
Polybrominated biphenyl (PBB)	≤ 0.1
Polybrominated diphenylether (PBDE)	≤ 0.1
Bis(2-ethylhexyl) phthalate(DEHP)	≤ 0.1
Butyl benzyl phthalate (BBP)	≤ 0.1
Dibutyl phthalate(DBP)	≤ 0.1
Diisobutyl phthalate(DIBP)	≤ 0.1

\* The content rate refers to the content proportion in a homogeneous substance (minimum unit that can be separated by rule with totally uniform composition).

[Certification Procedure]

Compliance with this item and a method to check shall be indicated in the Attached Certificate. In addition, it is recommended that checking is performed based on JIS Z 7201 “Management of chemical substances in products - Principles and guidelines”.

(10) missing

4-1-3 Battery

(11) Batteries used shall not contain cadmium, mercury, lead, and their compounds as prescribed constituents.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

4-1-4 Ink, masters, and ink containers

(12) Use of chemical substances shall be controlled appropriately. Specifically, the SDS (Safety Data Sheet) for inks shall be provided.

[Certification Procedure]

The SDS issued by printing ink manufacturers shall be submitted.

(13) Substances restricted by the Japan Printing Ink Makers' Association's “Self-imposed Controls on Ink for Food Packaging Materials (Negative List Control)” shall not be added as prescribed constituents.



## [Certification Procedure]

Certificates, issued by the ink manufacturer, stating compliance to Negative List regulations shall be submitted (Example 2).

- (14) Halogen containing polymers shall not be added to printing ink as prescribed constituents.

## [Certification Procedure]

Certificates, issued by the ink manufacturer, stating that polymers do not contain concerned substances shall be submitted (Example 2).

- (15) Aromatics detected from petroleum solvents by the JIS K2536 method shall be less than 1.0% of the total volume for ink.

## [Certification Procedure]

Certificates of tests results issued by the petroleum solvent supplier or testing institutions and documents, issued by the ink manufacturer, including calculations based on the results shall be submitted.

The documentation must provide the process of calculation and the followings:

- a. The name of the ink.
- b. The name of petroleum solvents in the ink.
- c. The weight percentage of aromatic components in petroleum solvents (alternative names admitted).

The weight percentage of aromatic components in the ink, calculated according to b. and c.

- (16) The content of petroleum solvents in ink shall not exceed 30%, and that of VOC components shall be less than 5%.

## [Certification Procedure]

The SDS indicating weight percentage of petroleum solvents in the ink (can be the one submitted in (12)) shall be submitted. Test results used for VOC calculation, analysis method, or certificates, issued by the ink manufacturer, stating the weight percentage of VOCs in the ink shall also be submitted.

- (17) Ink containers used shall be labeled in accordance with the Guideline for Labeling Office Machines for Securing Safety (Revised in December 2000 by the former Japan Business Machine Industry Association [currently, the Japan Business Machine and Information System Industries Association]).

## [Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

- (18) Plastic parts of ink containers shall not contain PBB, PBDE and short chain chlorinated paraffin (chain hydrocarbons 10 to 13 with chlorine concentration of 50% or over) as prescribed constituents.

## [Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

- (19) Plastic parts of ink containers shall not contain lead, cadmium, mercury, and other compounds as prescribed constituents.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

- (20) Plastic parts of ink containers shall be marked according to ISO11469 (equivalent JIS K 6999) and in compliance with ISO1043-1 to 4 (equivalent JISK6899-1 to 4). Other marking methods such as SPI are also acceptable. However, this does not apply to containers weighing less than 25g or having a flat area less than 200 mm<sup>2</sup>, or using reused plastic.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates and a plastic material list (Example 3) shall be submitted.

- (21) Ink containers composed of 7g or more of plastic parts per 100 ml ink container shall have a collection mechanism, and the collection rate shall be 55% or more. In addition, the recovery rate of the collected ink containers shall be 95% or more of the total weight of the containers (excluding ink). Of ink containers collected, those that cannot be recovered shall be treated and disposed using eco-friendly methods.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. Certificates describing the collection system for the concerned ink container and stating the collection and recovery rates shall be submitted, as well as documents specifying that eco-friendly treatment and disposal systems are available (processing ability, treatment details, etc.)

If the product under application was released into the market less than one year ago, documents specifically indicating that mechanisms to achieve collection rates of 55% or more are available shall be submitted. Eco Mark Office may require reporting of the collection rate to the applicant after conclusion of the contract on (or may conduct an audit), and in such cases, the applicant must cooperate.

- (22) An easy means of separating and sorting materials of ink containers composed of less than 7g of plastic parts per 100 ml ink container shall be considered.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. In addition, the packaged state of products, packaging materials, raw materials used for these packaging, details for realizing easy separation and sort of materials of ink containers shall be indicated specifically (drawings and photographs can be used).

- (23) Plastic parts of masters shall not use polymers containing halogens. They shall also not contain as prescribed constituents organohalogen compounds including the following:

- PBB

- PBDE
- Short-chain chlorinated paraffin (chain hydrocarbons 10 to 13 with chloride concentration of 50% or more).

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

(24) Information on the handling of ink containers including the following (a. to d.) shall be labelled on the ink container or packaging:

- a. Correct method of handling
- b. Measures should ink be spilled onto hands, or enter the eyes or mouth.
- c. Store in places out of reach of children.
- d. Disposal and/or collection method after use.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. Certificates indicating that relative information is provided for ink containers, or the samples, photographs, and bloc copies of packaging shall be submitted.

#### 4-1-5 Powder dust

(25) Product documentation shall indicate that powder dust may be generated during use of the equipment for certain types of paper, and provide instructions on place of installation and precautions on use such as cleaning, ventilation, etc. The expression may differ from the example given as long as the meaning is the same.

(Description example1)

Powder dust may be generated during use of the equipment for certain types of paper. Ensure thorough cleaning and ventilation.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. In addition, copies of appropriate portions of product documentations including user information shall be submitted.

#### 4-1-6 Paper

(26) If paper to be used falls under a. to c. listed below, based on the provisions on quality control of each company, use of at least one or more type of paper shall be possible:

- a. Applicable scope “PPC paper, business forms and coated paper for color printers (paper for ink jet printing)” of Eco Mark No. 106 “Paper for Communication Version 3”
- b. Applicable scope “Printing paper (Excluding drawing papers included in the “writing and art papers” category designated in the “Paper and Pulp Statistics Annual Report” by the Ministry of Economy, Trade and Industry.) of Eco Mark

## No. 107 “Printing Paper Version 3”

- c. [Information Paper] “Copier paper, forms, coated inkjet color printer paper”, and [Printing Paper] “Non coated printing paper, coated printing paper” of “2. Paper” of the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities

## [Certification Procedure]

Compliance with this item, manufacturer’s name and brand shall be indicated in attached certificates.

## 4-1-7 System for repair, supply of maintenance parts

- (27) Repair subcontract systems shall be available, and repairs shall be carried out as requested by the users (repair system). The system should meet the following:
- a. Information on repair system are available;
  - b. Information on scope of repair (details of services), repair time, costs, how services are provided to users, etc. are available. .

## [Certification Procedure]

Compliance with this item shall be indicated in attached certificates. A copy(s) of appropriate product insert(s) indicating that a system is established (capacity, details of information based on the requirements, etc.).

- (28) Maintenance of equipment shall be operated only by persons who have undergone training and persons with the required technical expertise.

## [Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

- (29) Supply of ink masters and the spare parts shall be continued for seven years after production of the product stops.

## [Certification Procedure]

Compliance with this item shall be indicated in attached certificates. A copy(s) of appropriate product insert(s) indicating this requirement is met.

## 4-1-8 Collection and recycling of machines

- (30) Systems for collecting used products, reusing parts, and recycling materials shall be available. Parts which cannot be recycled shall be processed/disposed by environmentally sound methods.

## [Certification Procedure]

Compliance with this item shall be indicated in attached certificates. Documents indicating that the product enjoys an established treatment/disposal system that is compatible with collection, reuse, material recycling, recovery of products and environment shall be submitted. They include details of collection system, reuse, material recycling, recovery, capacity, and treatment. The documents can be replaced with a product insert if it provides this requirement is met.

4-1-9 Packaging materials

(31) Plastic materials used for packaging products shall not use the specific CFCs (five types), other CFCs, carbon tetrachloride, trichloroethane, and HCFC as shown in Table 3.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

Table 1 Substances prescribed in 4-1-9(31), 4-1-12(36)

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

(32) Plastic materials used for packaging of products shall not be composed of halogen containing polymers and organic halogenides as prescribed constituents.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

(33) The packaging of products shall give consideration to ease of resource conservation, reuse, and recycling.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. Documents including specific information about product packaging, packaging material, and raw materials and those providing specific actions to facilitate resource saving, reuse, and recycling shall also attached. (The documentation must be supplemented by drawing and photos.)

#### 4-1-10 Energy Consumption

(34) Energy consumption shall conform to criteria prescribed in Table 4, "Basic Guidelines for Promoting the Procurement of Eco Products, etc." ,OA Equipment,

Digital Duplicator “Table: Criteria on Energy Consumption Efficiency of Digital Duplicators”.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates. A certificate of compliance with Table 4 (Example 7) shall be submitted with each machine type. If the submission of such a certificate with application documents is impossible, the applicant shall submit a memorandum providing that a certificate of compliance with Table 4 will be submitted by the conclusion of the Eco Mark use agreement and that the agreement will not be signed if such compliance is not established. Attached certificates shall include the name and address of testing laboratory as well as facts that the examination was conducted after the quality assurance system was built or those that ISO/IEC17025 (equivalent JIS Q17025) is met.

Table 4 Criteria on Energy Consumption Efficiency of Digital Duplicators

		A3 printer		B4 printer, A4 printer	
		Printer function		Printer function	
		When operating	When not operating	When operating	When not operating
Model equipped with printer function as standard		≤35.5	≤28	≤22	≤20
Model not equipped with printer function as standard	With printer function	≤35.5	NA	≤22	NA
	Without printer function		≤24		≤19

(Unit:Wh/h)

#### 4-1-11 Product Documentation

(35) Product documentation shall indicate the following information (a to l) for users:

- a) Installation conditions of equipment
- b) Recycling information of products after use
- c) Places accepting used products
- d) Disposal or recovery methods of ink containers after use
- e) Information on collection, reuse, material recycling, recovery, or disposal of secondary batteries after use
- f) Energy consumed during binding or printing when adjustable functions are set to their maximum energy consumption settings
- g) Contact address or number or where to reference for information on obtaining detailed product information
- h) Proper handling method of ink containers
- i) What to do should ink be spilled on hands or accidentally enter into eyes/mouth
- j) Ink containers should be kept out of reach of children

k) Thorough cleaning and ventilation should be ensured

l) Ink supplied as product expendables satisfy criteria 4-1-4 (12) to (16) on ink

[Certification Procedure]

A copy of appropriate product insert including user information shall be submitted.

#### 4-1-12 Manufacturing criteria

(36) Specific chlorofluorocarbons (5 CFCs), other CFCs, carbon tetrachloride, trichloroethane, and HCFCs indicated in Table 1 shall not be used in the final manufacturing stage, final supply stage of products and circuit boards, and during cleaning of parts for reuse.

[Certification Procedure]

Compliance with this item shall be indicated in attached certificates.

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

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

Relevant environmental regulations and agreements on preventing air pollution, water contamination, noise, odor and emission of hazardous materials shall not be violated for the past five years in manufacturing.

[Certification Procedure]

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

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

a. With respect to the fact of violation, guidance documents from administrative agencies (including order of correction and warning) and copies of written answers (including those reporting causes and results of correction) to such documents (clearly indicating a series of communication);

b. Following materials (copies of recording documents, etc.) concerning the management system for compliance with the Environmental Laws, etc. in 1)-5):



- 1) List of the Environmental Laws, etc. related to the area where the plant is located;
- 2) Implementation system (organizational chart with roles, etc.);
- 3) Bylaws stipulating retention of recording documents;
- 4) Recurrence prevention measures (future preventive measures);
- 5) State of implementation based on recurrence prevention measures (result of checking of the state of compliance, including the result of onsite inspection).

#### 4-2. Quality Criteria

None.

### 5. Considerations

In manufacturing products, it is desirable to consider the following, although they are not requirements for certification. The conformance to the individual criteria item shall be indicated in Attached Certificates.

- (1) Instruction manuals (user manuals) provided to users shall conform to the following “a.” to “c.” and d
  - a. The binding method shall not impede waste paper recycling. However, use of hot melt adhesive is approved.
  - b. Chlorine gas shall not be used in the bleaching process of waste paper pulp.
  - c. The percentage of waste paper in the pulp mixture shall be over 70%.  
However, for the documentation printed overseas, “a” and either “b” or “d” below shall be considered.
  - d. The percentage of waste paper in the pulp mixture shall be over 30%

### 6. Product Classification, Indication and Others

- (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) In principle, Eco Mark shown as below shall be indicated on the product, etc. The licensees of Eco Mark Utilization Contract who own the Eco Mark products shall also be allowed to use the indication and the certification number as before.



(Note for the indication)

\*For indicating the logo, Eco Mark certification number (eight-digit number) or the name of the licensee using the Eco Mark shall be appeared.

\* Such expression as “Eco Mark product” can be used following the 2.(2) of the Guide to Eco Mark Usage.

“Eco Mark product”, “#Eco Mark”, “www.ecomark.jp”, “Eco Mark Certificate”

\* If a licensee makes an environmental claim of the Eco Mark certified products associating with the Eco Mark logo, please comply with the “Environmental Labeling Guidelines” of the Ministry of the Environment of Japan.

(<https://www.env.go.jp/policy/hozen/green/ecolabel/guideline/>)

\* The Guide to Eco Mark Usage shall be followed for any cases not listed above. (<https://www.ecomark.jp/office/guideline/guide/>)

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June 1, 2005	Established
August 1, 2005	Revised: Addition of “reused parts” (Addition to “3. Terminology” and to 4-1-14”) Ver1.1
August 2, 2007	Revised: 4-1-2 (5) Ver1.2
February. 14, 2008	Revised: Ver1.3
June 9, 2008	Revised: General Rule,4-1-1(3),4-1-8(28),(29), 4-1-12(36) Ver1.4
August 21, 2008	Revised: 4-1-11(37) Ver1.5
January 1, 2010	Revised: (4-1-2(6) Version 1.6)
March 1, 2011	Revised: Ver1.7
October 1, 2011	Revised: (4-1-6(26) Version 1.8)
January 1, 2012	Revised: (B4-1-4(15),(16), 4-1-10(34) Version1.9)
October 1, 2012	Revised: (6(3),(4) deleted, Version1.10)
February. 1, 2014	Extension of Expiration date
January 7, 2019	Extension of Expiration date
April 1, 2022	Revised (4-1-2(7)-(10), etc. Version1.11)
May 31, 2025	Expiration date

The Certification Criteria for the Product Category will be revised when necessary.

**Attachment 1** "4-1-1(1) 3R Design of Equipment"**Checklist for 3R design of Equipment****Items**

The checklist consists of the following three requirement groups:

- Structure and joining technique
- Selection and marking of materials
- Longevity

**Scope**

The requirements apply to certain sub-assemblies of basic unit:

Subassemblies	consist of at least two components that are joined together in a forced- or positive-fit manner.
Casing parts	protect the fixtures from environmental impact; also protect the user from contact with moving, radiating, or high voltage electrically charged components.
Electric/electronic subassemblies	include at least one electric or electronic component
Mechanical parts	are not included in electric/electronic subassemblies, and perform mechanical or optical functions (except case/casing and chassis)

**Category classification**

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

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

**Compliance with 3R design**

It is determined that equipment comply with the 3R design requirements if it meets the items listed in the Checklist.

**Annex 1**

Materials, preparations and components that are to be handled selectively

At least the following materials, preparations and components must be removed from separately collected used electronic equipment.

(Annex VII of Revised WEEE Directive (2012/19/EU Directive))

- PCB containing (PCB: polychlorinated biphenyls) capacitors according to Directive 96/59/EC on the removal of polychlorinated biphenyl and polychlorinated terphenyl compounds (PCB/PCT)
- Mercury-containing components like lamps for background lighting;
- Batteries;
- Printed circuit boards if the surface of the printed circuit board is larger than 10 square centimetres;
- Toner modules, powdery, paste-like and liquid toners including colour toners;
- Plastic parts that contain brominated flame retardants;
- Liquid crystal displays ( with the casing, there applicable) with a surface of more than 100 square centimeters;
- External electric power lines;
- Electrolyte capacitors that contain critical materials (height; >25mm; diameter: >25mm or similar proportionate volumes):

These materials, preparations and components are to be disposed of or recycled in accordance with Directive 2008/98/EC on waste and repealing certain Directives.

## Checklist for 3R design of equipment/consumables

"M"-requirements, which must be met

Requirement group	No.	Requirement	Applies to	Compliance?	Remarks	Purpose
Structure and joining technique	1	Are subassemblies made of mutually incompatible materials separable, or connected by separation aids? This requirement does not apply to parts that are proved to be reused parts.	Casing parts, chassis, electric/electronic subassemblies	Yes / No		Promote reuse and recycling
	2	Are electric/electronic subassemblies and components easy to find and separate?	Entire unit	Yes / No		Facilitate parts search
	3	Can dismantling for recycling purposes be done exclusively with universal tools? This requirement does not apply to parts that are proved to be reused parts.	Entire unit	Yes / No	"Universal tools" refers to widely used, commercially available tools. This requirement does not apply to connections where legal regulations have influenced the choice of joining technique.	Facilitate disconnection
	4	Have the points of engagement and the work space required for dismantling tools been considered?	All subassemblies	Yes / No	The "point of engagement" is defined as the point of connection element to which the force is applied by the tool.	Facilitate disconnection
	5	Can screw connections for fastening subassemblies be tightened with no more than three tools?	Casing parts, chassis, electric/electronic subassemblies	Yes / No		Facilitate disconnection
	6	Can the dismantling be performed by one person?	Entire unit	Yes / No		Facilitate dismantling
	7	Are casing parts free of electronic subassemblies? Control panels attached to the casing and casing parts serving as a chassis, are not considered here as a casing part.	Casing parts	Yes / No		Promote reuse and recycling
	8	Has the manufacturer carried out a trial disassembly in accordance with 1-8?	Entire unit	Yes / No		
Selection and marking of materials	9	Is the variety of materials used for plastic components of similar functions limited to one material? However, this requirement does not apply to parts that are proved to be reused parts.	Casing parts, chassis $\geq 25g$	Yes / No	For instance, "similar functions" refer to impact resistance and abrasion resistance.	Promote reuse and recycling
	10	(a) Has the coating of plastic components been limited to a minimum (for example, manufacturer identification)? However, laser marking is not included in this requirement as coating. And also parts that are proved to be reused parts are not affected by this requirement.	Casing parts	Yes / No	"Coating" includes layers of paint, vacuum-deposited layers and print.	Promote reuse and recycling
		(b) The paints which shall not prevent recycling has been used. Coating works have been conducted with considerations for occupational safety and health and reducing environmental burden.	Casing parts	Yes / No	"Paints not to prevent recycling" refers to the paints that have the following characteristics: it possesses compatibility with materials of coated parts, and does not prevent high-level material recycling (horizontal recycling for in-house products). "Considerations for occupational safety and health" includes ventilation/air emission and worker' wearing protective equipment. "Considerations for reducing environmental burden" includes the measures to control VOC emission into the air, such as the removal equipment, the devices in coating process, or replacement by low-VOC paint.	
		If "Yes" in (a) or (b), it is considered to conform this requirement.				
	11	Are materials that are recyclable as materials or material assemblies used?	Casing parts, chassis	Yes / No	"Recyclable as materials" means that recycled material identical to the starting material can be manufactured. (It can be used as if it were the original material.) This item asks the intention and purpose upon designing and does not ask whether recycling is actually conducted.	Promote reuse and recycling
	12	Is the partial use of recycled plastic material permitted?	Casing, chassis	Yes / No	"Permitted" means the use of recyclable material is permitted as long as such material meets the requirements provided in the specifications and is available. "Partial" means some available plastic components are appropriate. (This does not require all available components.)	Promote reuse and recycling

	13	Can components and materials under Annex 1 be easily removed?	Entire unit	Yes / No		Promote reuse and recycling
	14	Are plastic parts marked at least in accordance with ISO11469 (corresponding standard JIS K6999:2004) or ISO11469 (corresponding standard JIS K699919904)? However, this need not apply to the parts with weight less than 25g or flat area less than 200mm <sup>2</sup> .	Entire unit	Yes / No		Promote reuse and recycling
	15	Have materials been selected in accordance with 9-14 and has this been documented in writing?	Casing, chassis (*several items applicable to an entire unit)	Yes / No		
Longevity	16	Do specifications include recycled subassemblies or spare parts, which can serve for spare parts or products, for repair and recycling after use of the device? Is the use of reprocessed modules or components possible and permitted?	Entire unit	Yes / No	Referring to that spare/ETN(Equivalent to new) parts must be prepared for reuse under manufacturer's responsibility	Promote reuse and recycling

"S"-requirements, which should be met -GroupA Ink jet, dot impact and thermo sensitive equipment-

Requirement group	No.	Requirement	Applies to	Compliance?	Remarks	Purpose
Structure and joining technique	1	Are detachable connections easy to find?	Casing parts, chassis	Yes / No		Facilitate parts search
	2	Are all screw connection elements that have to be dismantled for recycling axially accessible?	Casing parts, chassis, electric/electronic subassemblies	Yes / No		Facilitate disconnection and taking out of parts
	3	The supporting surface can be maintained during the entire disassembly work	Unit to be handled	Yes / No	The supporting surface refers to the product surface for wrecking company to work on. This requirement enables to indirectly check whether or not there is hierarchical structure. Unit to be handled refers to the unit which exceeds 5 kg, or can be turned over in case of less than 5kg.	Facilitating disconnection and dismantling
Selection and marking of materials	4	Are components that are made of the same plastic dyed uniformly or compatibly? However, control elements on the equipment are exempt from this requirement.	Casing parts	Yes / No	"Compatible dyeing" stands for different shades of one colour(e.g. grey and anthracite).The colours for dyeing of toner modules are limited due to shade purpose and the integrity with case parts of entire unit is not required.	Promote reuse and recycling
	5	Have at least 5% recycled plastics been used?	Casing, chassis	Yes / No	Total plastic weight means the total weight of all applicable plastic parts." Recycled material" means recycled plastic pellets, not plastic parts that include recycled plastics. The source of recycled pellets does not matter. In other words, the recycled plastic does not have to be from recycled pellets obtained from parts used in printers or copiers; it can be from other products on the market.	Actualize environmental load reduction