



Eco Mark product category No.134
Watches and Clocks Version 1.1

Japan Environment Association
Eco Mark Office

1. Environmental Background

Timepieces are classified into watches and clocks. According to the Japan Clock & Watch Association, the production of watches and clocks worldwide is estimated at about 1.3 billion watches and about 300 to 400 million clocks. Major producer countries of timepieces are Japan and China in Asia, and Switzerland in Europe.

Regarding watches, it is considered that each consumer possesses several watches. This means that many watches are not often used but are kept rather than being thrown away. Therefore, the development of power sources including self-generation by natural energy sources has been a challenge. With such power generation, watches which have been possessed for a long time but not used can be immediately available without changing batteries.

Eco Mark Product Category No. 71 “Solar-powered Watch” was enacted in 1996 and applied to timepieces running with solar cells. Solar cells are a clean energy source because they can contribute to a reduction in the disposal of used batteries and toxic materials. In reviewing the product category, it was decided that the category would be applied to watches and clocks which are environment-friendly throughout the product life cycle from the gathering of resources to recycling. However, most of the environmental burden from raw materials derives from manufacturing of movements and is difficult to differentiate. Consequently, this product category focuses mainly on the energy sources of running systems. Specifically, natural energy sources other than solar cells are added to the category to promote clean power sources. Moreover, as there have been some timepieces with primary batteries seen in recent years that have improved energy-saving capability, it was decided that the revised product category would also apply to them because such batteries are considered to lead to a reduction of environmental burden.

2. Applicable Products

This product category covers “Watch completes” and “Clock completes” of the category “Watches and clocks” based on the Japan Standard Commodity Classification issued by the Ministry of Internal Affairs and Communications.

3. Terminology

Watch:

Timepiece which works in any position and is designed to be portable

Clock:

Timepiece (bracket clock or wall clock) which is used in a certain position

Natural energy:

Energy which is not gained from primary batteries or AC power but from solar light, body temperature or wrist movements. Natural energy includes solar generation, thermal generation, auto- and hand-wound generation and auto- and hand-wound spring running.

Running system:

Generation system in a generation type, and power source part in a spring-running type

Prescription constituent:

Components intentionally added with the purpose of providing specific characteristics to the product. Impurities which are inevitable mixed during the manufacturing process are excluded.

Capacitor:

Part for power source, which uses a physical phenomenon allowing repetitious charge and discharge

4. Certification Criteria

4-1. Environmental criteria

An applicable product shall satisfy all items in 4-1-1 and items A or B in 4-1-2 according to energy sources used. Furthermore, if it is a product that includes a package regulated in 4-1-3, it shall satisfy all items concerned.

4-1-1 Common criteria

- (1) In the manufacturing of products, local environmental laws and regulations as well as agreements on preventing air pollution, water contamination, noise, odor and emission of hazardous materials shall be observed.
- (2) In the final assembly phase, an applicable product shall not use solutions which are specific chlorofluorocarbons (5 CFCs), other CFCs, carbon tetrachloride, or trichloroethane indicated in Attachment 1 and shall not emit CFC substitutes (here HCFC).
- (3) Applicable products, batteries and capacitors shall not have the following additives as formula constituents: mercury, cadmium, lead, hexad chrom or compounds comprising these substances, polybrominated biphenyl (PBB), polybrominated diphenyl (PBDE) or chlorinated paraffin (with 10-13 chain carbons and containing chloride concentration of 50% or more). However, applicable products, batteries and capacitors shall follow the “Applications of lead, mercury, cadmium and hexavalent chromium, which are exempted from the requirements of Article 4(1) in the “Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment” and the “Council Directive 91/157/EEC of 18 March 1991 on batteries and accumulators containing certain dangerous substances,” the containment of the substances concerned shall be approved.
- (4) Plastic materials of 25g or more shall not use polymers that contains halogen

elements. In addition, organic halogen compound shall not be added as a formula constituent. However, this item shall not apply to printed board.

- (5) Response systems including repairing shall be available even after manufacturing of an applicable product has been discontinued.
- (6) Outsourcing systems for check-ups and repairs shall be established such that they can be conducted according to customers' requests.

4-1-2 Criteria regarding energy sources

Energy sources of an applicable product shall be natural energy or primary battery. An applicable product with both natural energy and primary battery as energy sources shall satisfy the criteria A and B respectively.

A. Product with natural energy as an energy source

- (7) Major parts of a running system shall have an assured service life of seven years in ordinary use.

B. Product with primary battery as an energy source

- (8) Battery life shall be seven years for watches and more than five years for clocks.

4-1-3 Criteria regarding packaging materials

- (9) Specific chlorofluorocarbons (5 CFCs), other CFCs, carbon tetrachloride, trichloroethane and CFC substitutes (here HCFC) indicated in Attachment 1 shall not be used for packaging materials.
- (10) Polymer including halogen and organic halogen compound shall not be added as formula constituents to plastic materials that are used for packaging.

4-2 Criteria regarding quality

- (11) Watches shall apply to JIS B7021
- (12) An applicable product using a secondary battery or a capacitor shall have a function to prevent overcharging and shall have a structure in which the product does not work if a primary battery is put in. A product with a winding structure running with a spring shall have a function to prevent overwinding.
- (13) An applicable product with a natural energy source shall have assured normal running even if it is left in a place where a running system does not work for one week (in a state of full charge if the product uses a charge system). If using a spring running system, an applicable product shall have assured normal running even if it is left in a place where a winding system does not work for 36 hours.

- (14) The precision of an applicable product shall be within plus or minus 45 seconds per month for quartz watches and within plus or minus 60 seconds per day for spring clocks.

5. Certification procedure

- (1) For certification criterion 4-1(1), a self-certificate issued by a manager of an applicable product manufacturer (hereinafter referred to as “manager”) shall be issued, certifying that the manufacturer has complied with environment-related regulations effective in the factory region and has had no violation for five years starting from the time of application. In addition, if the PRTR law is applied to a factory where applicable products are produced and the factory uses a greater volume of the applicable substances (first-class chemical substances) than regulated by the law (which stipulates an obligation to report the volume used), the manager of the manufacturer shall issue and submit a certificate which indicates the released and transferred volume of every substance concerned.
- (2) For certification criterion 4-1(2), a certificate issued by the manager shall be submitted.
- (3) For certification criteria 4-1(3) and (4), a certificate showing that whether or not the substances concerned are added to an applicable product shall be submitted.
- (4) For certification criterion 4-1(5), a certificate showing compliance with standard items shall be submitted.
- (5) For certification criterion 4-1(6), a certificate for an applicable product shall be issued to guarantee that check-ups and repairs will be conducted according to users’ requests.
- (6) For certification criterion 4-1(7), a certificate issued by the manager shall be submitted.
- (7) For certification criterion 4-1(8), a certificate of service life issued by the manager shall be submitted.
- (8) For certification criterion 4-1(9), a certificate issued by the manager shall be submitted.
- (9) For certification criterion 4-1(10), the packaging condition of the product and materials used for packaging shall be described concretely in the application for certification and the use of Eco Mark (figures and photographs can be attached for the application). In addition, whether or not polymers including halogens and organic halogenides are added shall be described in the application for certification and the use of Eco Mark.
- (10) For certification criterion 4-2 (11), a certificate which declares adaptation to JIS B7021 shall be submitted.

- (11) For certification criterion 4-2 (12), documents shall be submitted which explain that a charge system has a function to prevent overcharging and an applicable product has a structure not to work even if a primary battery is put in.

If the product has a winding structure with a spring running system, documents which explain that it has a function to prevent overwinding shall be submitted.

- (12) For certification criterion 4-2 (13), a certificate shall be submitted certifying that an applicable product has normal running even if it is left in a place where a running system does not work for one week (in a state of full charge if the product uses a charge system). A certificate shall be submitted, also declaring that an applicable product has normal running even if it is left in a place where a winding system does not work for 36 hours if using a spring running system.
- (13) For certification criterion 4-2 (14), a certificate which declares adaptation to the standard values based on JIS B7025 for quartz watches and JIS B7001 for spring watches shall be submitted.

6. Other requirements

- (1) Products shall be classified by every watch, clock, and energy source, and every model or every series model.
- (2) The following environmental information shall be indicated below the mark. The location and details of the Eco Mark to be indicated shall be submitted when applying for Eco Mark product certification and use. The environmental information indicated shall be consist of aligned to the left and enclosed in a rectangular box and the line shall indicate “natural energy” for products with natural energy and “longevity of battery” for products with primary batteries as energy source.

For Eco Mark Product Category No. 71 “Solar-powered Watch”, the stocks of certified products produced during the licensing period are exceptional and allowed to use the former statements below the mark and its certification numbers for a year from the date on which the contract is renewed as a basic rule.

Indication examples are as follows:

[A product with natural energy
as an energy source]

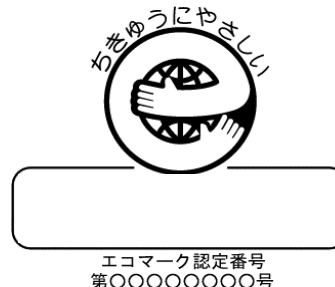


Natural energy

Eco Mark Certification No.
No. xxxxxxxx

xxxx Co., Ltd.
(Name of contractor using an Eco Mark)

[A product with a primary battery
as an energy source]



Longevity of battery

Eco Mark Certification No.
No. xxxxxxxx

xxxx Co., Ltd.
(Name of contractor using an Eco Mark)

- (3) The Eco Mark shall be used according to Article 7 of the Eco Mark Usage Regulations separately prescribed based on the Guidelines for Eco Mark Program Implementation.
- (4) In principle, products to be submitted for application shall be free of “flame retardant” and “antibacterial agent” materials, and shall not be labeled “biodegradable plastic”. When using these materials under special circumstances, however, the products shall satisfy the provisions contained in the “Guidelines for Eco Mark Program Implementation” concerning the indication of “flame retardant”, “antibacterial agent” and “biodegradable plastic”. Specifically, the use of these materials shall be described in the Application Form for Eco Mark Certification and Usage with documents stipulated in the form to be attached.

Established: June 1, 2005

Revised: Version1.1, Deletion of 6. Other requirements

Validity Period: May 31, 2010

These certification criteria for the product category will be revised or abolished when necessary.

Substances regulated in 4-1-1(2) and 4-1-3(10)

Specific chlorofluoro-carbon (Five CFCs)	Trichlorofluoromethane	Hydrochloro-fluorocarbon (HCFC)	Pentachlorofluoropropane
	Dichlorodifluoromethane		Tetrachlorodifluoropropane
	Trichlorotrifluoroethane		Trichlorotrifluoropropane
	Dichlorotetrafluoroethane		Dichlorotetrafluoropropane
	Chloropentafluoroethane		Chloropentafluoropropane
Other CFCs	Chlorotrifluoromethane		Tetrachlorofluoropropane
	Pentachlorofluoroethane		Trichlorodifluoropropane
	Tetrachlorodifluoroethane		Dichlorotrifluoropropane
	Heptachlorofluoropropane		Chlorotetrafluoropropane
	Hexachlorodifluoropropane		Trichlorofluoropropane
	Pentachlorotrifluoropropane		Dichlorodifluoropropane
	Tetrachlorotetrafluoropropane		Chlorotrifluoropropane
	Trichloropentafluoropropane		Dichlorofluoropropane
	Dichlohexafluoropropane		Chlorodifluoropropane
	Chloroheptafluoropropane		Chlorofluoropropane
	Carbon tetrachloride		
	1,1,1-trichloroethane		
Hydrochloro-fluorocarbon (HCFC)	Dichlorofluoromethane		
	Chlorodifluoromethane		
	Chlorofluoromethane		
	Tetrachlorofluoroethane		
	Trichlorodifluoroethane		
	Dichlorotrifluoroethane		
	Chlorotetrafluoroethane		
	Trichlorofluoroethane		
	Dichlorodifluoroethane		
	Chlorotrifluoroethane		
	Dichlorofluoroethane		
	Chlorodifluoroethane		
	Chlorofluoroethane		
	Hexachlorofluoropropane		
	Pentachlorodifluoropropane		
	Tetrachlorotrifluoropropane		
	Trichlorotetrafluoropropane		
Dichloropentafluoropropane			
Chlorohexafluoropropane			