

## Eco Mark Product Category No. 125

### “Garbage Disposer Version1.5”

#### Certification Criteria

- Applicable Scope-

- A. Compost containers
- B. Home garbage disposers

Containers designed to decompose organic wastes with biological treatment at home and those which do not use energy such as electricity are classified into A. Compost containers, and garbage disposers of biological type or dry type designed for the above purpose which use energy such as electricity are classified into B. Home garbage disposers.

Established:	December 18, 2002	Japan Environment Association
Last revised:	July 13, 2012	Eco Mark Office
Expiration date	March 31, 2016	

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.125

### **“Garbage Disposer Version1.5” Certification Criteria A. Compost containers**

Japan Environment Association  
Eco Mark Office

#### **1. Purpose of Establishing Criteria**

The Certification Criteria of Eco Mark Product Category “Composting Containers,” established in 1989, was intended to disseminate the use of systems to compost organic wastes, mainly with the functions of microorganisms. In 1994, electric systems were added to this product category to further spread these systems.

In the certification criteria of this product category, composting systems are defined, "(1) The product shall be a device for composting garbage mainly through the action of microorganism," and therefore have eliminating systems intended for drying or reducing organic wastes from the scope of applicable products. However, due to an increasing need for the reduction of household wastes in recent years, it was decided in the Eco Mark Committee for Product Certification meeting held in May 2000 that the scope of applicable products and certification criteria would be reviewed, and submitted to the Eco Mark Committee for Establishing Category and Criteria.

Organic wastes are referred to as food waste in documents released by the Ministry of Agriculture, Forestry and Fisheries, disposed by food manufacturers, food distributors, restaurant industry, and households. According to estimates by the Ministry of Agriculture, Forestry and Fisheries in documents released by the former Ministry of Health and Welfare in 1996, of the 19,400,000 tons of food waste that were disposed of, 91% or 17,720,000 tons were incinerated and buried. Because it is important to control the generation of a massive volume of food waste and to reuse it, the Law Concerning Promoting to Recover and Utilize Food Resources was enforced. In this product category, the environmental load resulting from organic wastes against this background was reviewed. The results confirmed that organic wastes disposed of by general composting systems are able to serve as the raw

material of composting, etc. instead of fertilizers and compost. To reuse as compost, it needs to be processed an additional time. Consequently, in order to reduce the volume of organic wastes, it is important to reduce wastes as well as perform interim process for effective reuse. In addition, since the composting system may reduce energy consumption during garbage incineration, it was decided that the scope of application of composting systems would be reset, the reduction and reuse of organic wastes promoted, and the supply of information on organic waste volume reduction enhanced. To evaluate the product life cycle, the environment load resulting in the manufacture and usage of the composting system was reviewed and the appropriate certification criteria were established

## 2. Applicable Scope

Container designed to decompose organic wastes at home with biological treatment and those which do not use energy such as electricity. Collective compost containers used in housing complexes are excluded.

## 3. Terminology

Biological type	Method of decomposing organic wastes using microorganisms in aerobic conditions to reduce volume.
Dry type	Method of drying organic wastes using energy such as electricity to reduce volume.
Composting container:	Container designed to decompose organic wastes at home using microorganisms. These do not use energy such as electricity and exclude collective compost containers found in housing complexes
Base material	Made of multi-porous wood, pulp, or other similar materials. Used for the purpose of maintaining aerobic decomposition conditions.

## 4. Certification Criteria and Certification Procedure

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

(1) Halogen resin and halogen plastic additives shall not be used for compost containers.

[Certification Procedure]

The applicant shall submit the Attached Certificates clearly stating whether polymers containing halogen and organic halogen composites are contained.

(2) The content and elution of heavy metals in plastic color agents shall conform to the "Color Material Criteria" of the Hygiene Council of Polyolefin, etc.

[Certification Procedure]

Whether the plastic and color agents are used is stated in the Attached Certificates. If the plastic color agents are used, the respective Attached Certificates shall be submitted to show conformance to the this item,

(3) Preservatives used in wooden containers shall have been certified by the Japan Wood Preserving Association. However, chemicals containing chromium, arsenic, and pyrethroid agents shall not be used.

[Certification Procedure]

The reasons for conformity to this criteria item shall be described specifically in the Attached Certificates. If antiseptic agents are used, a copy of certificate issued by the Japan Wood Preserving Association shall be submitted.

(4) Compost containers shall be designed with consideration to facilitating the recycling of containers.

[Certification Procedure]

Explanatory documents for the recycle design shall be submitted.

(5) Compost containers should be collected by the manufacturer after use, upon request by the user.

[Certification Procedure]

Explanatory documents for the collection of containers shall be submitted.

(6) The User's Manual shall provide information pertaining to the above that used compost containers will be picked up by the manufacturer upon request by the user.

[Certification Procedure]

The corresponding sections of the User's Manual shall be submitted.

(7) The User's Manual shall provide the information listed in table 1.

## [Certification Procedure]

The corresponding sections of the User's Manual shall be submitted.

(8) In manufacturing the applied product, related environmental laws and regulations and pollution control agreement (hereinafter referred to as the "Environmental Laws, etc.") must be followed with respect to air pollution, water contamination, noise, offensive odor, and emission of hazardous materials 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 last five years from the date of application (whether there is any violation) must be reported. If there is any violation, it is necessary that proper remedies and preventive measures have been already taken, and the related Environmental Laws, etc. must thereafter be followed appropriately.

## [Certification Procedure]

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

In addition, it is necessary to report whether there is any violation during the last 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 (making a series of progress clear);
- b. Following materials (copies of recording documents, and so on) 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 entry of roles, etc.);
  - 3) Document 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).

(9) Base materials shall be carefully kept from containing hazardous chemicals.

[Certification Procedure]

Raw materials of the base material shall be specified in the Attached Certificates.

#### 4-2. Quality Criteria and Certification Procedure

(10) Product quality shall conform to any criteria prescribed per purpose. Quality control should also be implemented adequately at the manufacturing stage.

[Certification Procedure]

a certificate indicating conformity to the corresponding quality criteria shall be submitted. At the same time, a certificate issued by the manager of the plant manufacturing the product, stating that quality control is being implemented adequately and no laws have been violated in the manufacturing stage, shall be submitted.

#### 5. Product Classification, Indication and Others

Omitted.

December 18, 2002	Established
Dec. 26, 2003	Revised (Eco Mark Usage)
February 12, 2004	Revised (addition of criteria regarding to flame retardants)
July 1, 2004	Revised (indication below Eco Mark Version1.1 )
November 1, 2004	Revised
August 3, 2006	Revised
October 19, 2006	Revised Version1.2
October 5, 2007	Revised
August 21, 2008	Revised Version1.3

March 1, 2011	Revised Version 1.4
July 13, 2012	Revised Version 1.5
March 31, 2016	Expiration date

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

## Attachment 1 Particulars Required in User's Manual on Compost Containers

- The following shall be taken into consideration when writing descriptions in the User's Manual.
- Disposed wastes that have been reduced in volume (hereafter referred to as disposed wastes) can serve as the raw material of compost, instead of compost itself.
  - Each user should be individually responsible for the disposal of wastes.
- The User's Manual shall provide the following information for the compost container to achieve sufficient performance.
- 1. Assembly**  
Drawings shall be used to describe how containers are assembled.
- 2. Purpose of use**  
The type of container (for example, outdoor or indoor.), volume of treatment (designed for how many families and days) shall be specified.
- 3. What can be put in, what cannot be put in.**  
Samples of organic waste are listed on the container
- 4. Reduction process**  
The reduction process shall be indicated in the User's Manual. The following information shall be included.
- Description of regulations, ordinances, and laws on the volume reduction of organic wastes
  - General principles on volume reduction
  - Site suitable for installing containers or systems in terms of hygiene
  - Start of volume reduction
  - Addition of organic wastes and base material
  - Stirring
  - Temperature range and humidity suitable for volume reduction (decomposing speeds in summer and winter)
  - Average number of days for normal volume reduction
  - Appraisal on whether volume reduction is achieved or not
  - Total weight of container
  - Height when container cover is moved (include this item only for containers with removable covers)
  - What actions should be taken when volume reduction activity drops?



- General troubleshooting
  - Prevention of sanitary insects (flies, horseflies (*Pteticus tenebrifer*), *drosophilae*, etc.), rats
  - Odor of disposed wastes
  - Overflow of contents

#### **5. List of Spare Parts**

A list of consumables shall be provided.

#### **6. Other Precautions**

The following shall be specified.

- Precautions taken when filling container (recommended)
  - Remove moisture (roll in newspaper, dry in windy place, dry in the sun)
  - Better to cut up large wastes into smaller parts
- Be cautious about what to include (avoid including liquids (water), oil (do not include oil), fish/meat (protein), etc. in large amounts, because these cause odor)
- Handling microorganisms
  - Aim not at rotting but volume reduction.
  - For biological composting, precautions on possibility of contamination by microorganisms and population fluctuations in indoor use (sealed off space) shall be added.

## Home Garbage Disposer Performance Evaluation Criteria and Performance Guidelines

### **1. Product definition**

#### **(1) System**

A system that reduces the volume of organic waste efficiently using electric energy.

A secondary advantage of the system is that it can convert the disposed waste into reusable resources such as raw materials for composts. There are biological and dry systems.

#### **(2) Processing object**

Organic wastes disposed from households.

The approximate volume of wastes disposed per day is 300-3,000 grams.

#### **(3) Rated voltage**

The commercial AC power is 100 V or 200 V.

#### **(4) Site**

For installation in general households (apartments and houses). Indoor and outdoor types are available.

### **2. Test conditions**

The test conditions are as follows (the same for all items):

Temperature:  $20 \pm 2$

Humidity:  $60 \pm 10\%$

Voltage: 100V or 200V (based on rated voltage)

Frequency: 50 H z , 60 H z

Applicable wastes: Standard test organic wastes of the standard quantity are filled into the system. In addition, 700 grams (average weight of organic wastes per day for a family of four.) can be measured separately for reference. Note that "standard quantity" is the rated weight (g or kg) of organic wastes that can be treated smoothly every day in the standard operating conditions of the system for the designated nominal term.

For the biological system using aerobic fermentation, "can be treated smoothly" requires the condition that the moisture content of the base material should be below 75% to control the anaerobic fermentation state that occurs in high moisture levels. When the

high moisture level continues, the aerobic fermentation state usually shifts to anaerobic fermentation state, and the emission from the base material changes from the normal ammonia gas to malodorous acetic gas. For the dry type, the rated quantity of organic wastes shall be filled in the system to ensure sufficient dryness.

Replacement of base material: Criteria for replacement of base materials of the biological type depend on the manufacturers' decision.

### **3. Power load and power consumption**

#### **3-1. Power load**

The maximum power load is the watt measured in operating conditions with maximum load imposed. (Operating condition with the maximum load imposed is the condition in which the system can demonstrate maximum performance within the operating temperature range. In other words, it is the operating mode in which the system is filled with the maximum possible quantity of organic wastes, and where it can demonstrate other added functions the most <deodorize function, etc.>.)

#### **3-2. Power consumption**

- (1) The power consumption is the electric energy consumed from start to end of treatment of the standard test organic wastes (standard quantity) filled into the system in the standard operation conditions of the system.
- (2) The power consumption of the biological type is affected by the treatment state of the base material and atmospheric temperature. Therefore, the standard test organic materials of the standard quantity are filled into the system every day based on "2. Test conditions" above to stabilize the treatment state. A watt-hour meter is used to measure the integral power for one week in the stable processing state. Electric energy used daily, or power consumption, is calculated using the measurement.

The "stable processing state" for the biological system is nearly equivalent to the state two weeks after continuous supply of organic wastes.

### **4. Reduced mass rate**

- (1) The percentage that indicates how much the organic wastes filled into the system (g or kg) has been reduced after treating standard test organic wastes of

standard quantity.

- (2) The reduced mass rate is measured for the nominal time with the dry type and for 2 months with the biological type.
- (3) With the biological type, measurement is done at two months when the reduced mass rate stabilizes.
- (4) Calculation equation  

$$\text{Reduced mass rate (\%)} = \frac{[\text{total quantity of organic waste (kg)} - \{\text{total mass at end of test (kg)} - \text{total mass before test (kg)}\}]}{\text{total quantity of organic wastes (kg)}} \times 100$$
- (5) As the performance of the biological system varies according to the measuring conditions such as region, season, and temperature and humidity of the operating environment, the note "performance varies according to measuring conditions such as region, season, and temperature and humidity of the operating environment" shall be added.
- (6) The reduced mass rate should be at least 70% in the above tests.

## 5. Treatment time

This is the index on the treatment speed of organic wastes. It is the time from the start of processing after standard test organic wastes are filled into the system to the end of the process.

With the dry type, it is the time until the designed dry rate is achieved or the operating time that can be preset using a timer.

With the biological type, it is the operating time until the "state in which the form of the standard test organic waste is no longer identifiable" is achieved.

However, the treatment time of the biological composting varies diversely according to the type of organic waste, composition, size, and freshness. In actual use, as the organic waste can be filled into the system over a long period of time until the time of replacement of the base material, the length of the treatment time is insignificant. Consequently, the treatment time for standard test organic wastes is merely a reference for processing speed and should be treated carefully.

If the length of the treatment time is at issue in the biological system, the type, composition, size, and freshness of the organic waste shall be clearly indicated: for instance, "Treatment time of boiled cabbage center measuring 3 cm in size is three days."

From these reasons, it is appropriate to indicate the processing speed per time for the dry type and the standard processing quantity per day for the biological type.

## 6. Noise

- (1) Noise generated during the operation of the composting system.
- (2) Measuring conditions are based on characteristics A of JIS Z 8731 noise level measuring method.
- (3) Supposing the system is operated in the standard state, noise levels are measured 1 m away from the system at the front, right, and left sides, and the average value is calculated. The height is the center of the system.
- (4) Noise is measured for every operation when it changes due to operating states such as stirring and ventilation. It is measured for every frequency when it changes due to power frequency, and the maximum value is indicated.

## 7. Measures taken for odor

The product shall be deodorized and left open to the extent that it does not affect the peripheral environment and residents. To deal with the issue of odor, the following methods can be used; catalytic deodorizing system, aerobic microorganism treatment, microorganism deodorizing method using specified bacteria, dilution, duct emission, adsorption, electric discharge deodorization.

## 8. Safety

The system shall be designed with a safety structure conforming to the electric equipment safety law, and appropriate warning notes and precautions shall be labeled on the system or provided in the User's Manual to ensure safe use of the product. (Equivalent to JEMA Anzen Hyoji Jissi Yoryosho (guidelines on safety signs and indications))

### Types, Contents, and Processing methods of Foods Used for Standard Test Organic Wastes

Waste Composition		Actual organic waste ratio (weight ratio)	Method of cutting
Vegetable	Vegetable skin/scrap/ center (leftover)	Cabbage 25	Cut into pieces of less than 10 mm in width (including center)
		Potato 5	Cut into quarters and then into small pieces of 5 mm (with skin)
		Onion 5	Cut into halves and then into small pieces of 5 mm (including skin)
		Radish 5	Cut into quarters and then into small pieces of 5 mm

	Fruit skin/center	Apple	15	Cut into eight pieces vertically (including center)
		Orange or tangerine	15	Cut into eight pieces vertically (with skin)
	Sub Total		70	
Meat	Meat	Raw meat	3	Chopped into irregular pieces around 3 cm
	Fish	Raw fish (sardine, etc.)	8	Cut into quarters
	Egg shell	Chicken egg shell	2	
	Sub Total		13	
Vegetable and meat total			83	
Other	Leftover food	Rice or <i>udon</i> noodle	11	
	Tea dregs	Tea dregs	6	Used tea leaves
	Sub Total		17	
Total			100	

\*The composition of the organic wastes above is based on the following survey results, but may be revised with lifestyle changes.

<References>

1. Survey Report of Sewerage and Sewage Purification Department, Ministry of Land, Infrastructure and Transport
2. Survey Report of Bureau of Sewerage, Tokyo Metropolitan Government
3. Kyoto City Household Waste Disposal Survey Report
4. Nara Women's University Household Waste Survey
5. Survey by Composting System Monitors