

EL405. Kimchi Refrigerators

[EL405-2001/4/2009-72]



1. Scope

The criteria shall apply to Kimchi refrigerators generally used in homes. It shall include products having function of aging Kimchi and of storing vegetables, meat, etc.

2. Definitions

2.1

“Storage volume” refers to the volume declared by producers that is a space to store food using the supplied container.

2.2

“Ozone Depletion Potential (ODP)” refers to the value representing the relative impact of ozone depleting substances when the impact of CFC11 to ozone depletion is set to be 1.

3. Certification Criteria

3.1 Environmental Criteria

3.1.1

With respect to use of chemical substances in manufacturing process and recyclability of the parts of the product at disposal stage, the product shall comply with the following requirements.

Note) This Criteria shall not applied on materials which are exempted from Hazardous Substances Restriction lists on EU Directive 2002/95/EC and lead in solder of printed circuit board (PCB). However, in case of revision of EU Directive 2002/95/EC, this shall follow revised EU Directive which is applicable at the time the application for eco-label certification.

3.1.1.1

Lead, cadmium, mercury and their compounds, and hexavalent chromium compounds

shall not be used in the product.

3.1.1.2

Content of lead, cadmium, mercury and hexavalent chromium(Cr⁺⁶) in the parts of the product shall comply with one of the following requirements.

a) The applicant shall have an appropriate system to control the content of hazardous substances as following requirements.

Substance	Pb	Cd	Hg	Hexavalent Chromium(Cr ⁺⁶)
Content [mg/kg]	≤1000	≤100	≤1000	≤1000

b) Provided that the applicant does not have an appropriate system for the control of hazardous substances, the content of hazardous substances in the parts of the product shall comply with the following requirements.

Substance	Pb	Cd	Hg	Cr+6 (note)
Content [mg/kg]	≤1000	≤100	≤1000	≤1000

Note) In case the content of total chromium (Cr) is 1000 mg/kg or less, it is regarded as equivalent

3.1.1.3

PBBs (polybrominated biphenyls), PBDEs (polybromodiphenyl ethers) and short-chain chlorinated paraffins (C= 10~13) whose chlorine concentration is 50% or more shall not be used in the product.

3.1.1.4

Refrigerants and forming agent used for the production shall have a corresponding factor of the ozone depletion potential (ODP) equal to zero.

3.1.1.5

Halogenated compounds such as PVC shall not be used for producing plastic parts weighing 25g or more that compose of the case and package. However, the organic fluorine additives of 0.5 weight % or less (ex. Anti-dripping agent) are allowed.

3.1.2

With respect to noise emission and energy consumption during the use stage, the product shall comply with the following requirements.

3.1.2.1

The sound pressure level of the products shall be 32dB(A) or lower.

3.1.2.2

The product should satisfy the requirements for the first class Energy Efficiency Rating, according to the efficiency management equipment operation regulations in the Energy Use Rationalization Act.

3.1.2.3

The products having more than two separate compartments shall have the structure that can selectively shut off the power of either of them. Exempted from this requirement are the products with forced-air circulating cooling system which smell of a compartment is likely to penetrate into the other one.

3.1.3

With respect to recycling in the manufacturing process or recyclability of the product in disposal, the following requirements shall be satisfied.

3.1.3.1

Separable plastic parts (weighing 25g or more and covering a flat surface of 200mm² or more) shall be visibly marked with material identification to facilitate separation and collection in disposal.

3.1.3.2

Halogenated plastics such as PVC shall not be used for packaging materials.

3.1.3.3

Shock-absorbing materials in packaging shall be made of recycled pulp or paper such as pulp mold. However, following materials are regarded as equivalent.

a) Shock-absorbing materials certified according to 'EL 606. Packaging Materials'

b) Shock-absorbing materials manufactured by using more than 50wt% of recycled plastics

c) EPS (expanded polystyrene), EPE (expanded polyethylene) and EPP (expanded polypropylene) whose foaming agent has zero ODP

d) Air cell packing bubble wrap that injects air into synthetic resin.

3.1.4

The recycle rate of the products in accordance with “Act on the resource circulation of electrical and electronic equipment” must be 70 weight percent or more.

3.2 Quality Criteria

3.2.1

The quality of the product shall satisfy the safety standards in accordance with the Korean Safety and Control Act for Electric Appliances.

3.2.2

The average temperature in the compartment under the normal condition shall be adjustable within $0\pm 1^{\circ}\text{C}$.

3.3 Information for Consumers

3.3.1

Indication of matters contributing to reasons (energy-saving, low level of noise emission, ozone layer protection, environment-friendly product design) for the certification of the concerned product at the stage of consumption

3.3.2

Appropriate disposal of waste products and contact numbers of collectors

4. Test Methods

Certification Criteria			Test and Verification Methods
Environmental	3.1.1	3.1.1.1	Verification of submitted documents

Criteria	3.1.1.2	Verification of submitted documents in accordance with the test method specified in and 4.2	
		3.1.1.3 ~3.1.1.5	Verification of submitted documents
	3.1.2	3.1.2.1	Test report of an accredited testing laboratory in accordance with the KS C 9321 (Kimchi refrigerators) or verification of submitted document
		3.1.2.2	Test report of an accredited testing laboratory in accordance with the Energy Efficiency Standards & Labeling Program under the “Rational Energy Utilization Act” or Verification of submitted documents
		3.1.2.3	Verification of submitted documents
	3.1.3	Verification of submitted documents	
Quality Criteria	3.2.1	Test report by an accredited testing laboratory in accordance with the safety standards for electric appliances or certificate of equivalent	
	3.2.2	Test report of an accredited testing laboratory in accordance with the test method specified in 4.1 and 4.2	
Consumer Information		Verification of submitted documents	

4.1 General Matters

4.1.1

Two test samples shall be required for each applied product.

4.1.2

Test samples shall be collected at random by a certification institute from products in market or those in storage at the production site.

4.1.3

The final evaluation on the test result of both samples shall meet the certification criteria respectively.

4.1.4

All test measurements shall be, in principle, made at the normal use condition of samples.

4.1.5

The result of test shall be numerically set according to KS Q 5002 (Statistical interpretation method of the data – Part 1: Statistical description of the data).

4.2 Test method for measuring compartment temperature under standard condition

4.2.1

The ambient temperature shall be adjusted to $15\pm 1^{\circ}\text{C}$.

4.2.2

Fill the each storage container with water of 70% of the storage capacity. Use some salt to prevent the water to get frozen.

4.2.3

Place a thermocouple at the center of the each storage container and determine the temperature of the water in each container.

4.2.4

Storage compartment temperature shall be the average value of the temperatures measured in each container. If capacity of compartments is different from one another, apply weighted value to make them equal and measure the average.

5. Reasons for Certification

“Power-saving, protecting ozone layer, design for environment”

Common Criteria, Notice No. 2012-36, the Ministry of Environment

1. Eco-label products must follow the following provisions with regard to the proper treatment of environmental pollution substances, such as air and water wastes and noxious chemical substances emitted in the process of manufacturing or service operation.

A. When first applying for certification, the product manufacturer should observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located for a period of one year prior to the date of application. Any case of violation of the penalty clause will be verified by confirming documents involved during a period of one year to the date of application. Regarding any violation not related to the penalty clause, confirmation will be made on the completion of appropriate measures.

B. A person who has received a certification of eco-labeling shall observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located during the period of certification. However, regarding any violation besides a penalty, confirmation will be made on the completion of appropriate measures.

2. As a general rule, information for consumers shall be indicated on the surface of the product in such a way not to be easily erased. However, in case that indication on the surface of the product is impossible or undesirable, it can be indicated on the appropriate part such as product packaging, product guidebook and user's manual that consumers can recognize. However, the service information should be indicated inside and outside of the place of service operation. In case that indication inside and outside of the place of service operation is impossible or undesirable, it can be indicated on the appropriate part such as an agreement, letter of delivery, letter of guarantee, and PR materials that consumers can recognize.

3. In order to establish fair trade and to protect consumer, the applicant for eco-label and the holder of eco-label license shall observe the Act on the Fairness of

Indication and Advertisement with respect to the environmental aspects of the product.

4. For Various standards referred in the certification criteria by target product, the latest revised edition applies at the date of application, if not specified otherwise.

5. In applying the quality related criteria for each target product, if no standard is available that can be applied as the quality criteria, the president of Korea Environmental Industry & Technology Institute (KEITI) (hereafter referred to as "president of KEITI") may establish and operate the quality criteria for the product involved after review by a competent committee.