

**Technical Requirement for Environmental Products**  
**The Certificable Technical Requirement for Environmental Labelling Products**  
**HBC 1—2001**  
**Disposable Food and Drink Container**      **Replace HJBZ 35—1999**

---

## 1 Scope

This technical requirement specifies the basic requirements, technical contents and test methods for environmental labelling products of disposable food and drink containers.

This technical requirement shall apply to the environmental labelling product certification for disposable food and drink containers made from biodegradable materials, photo-bio-degradable materials and materials liable to be recycled.

## 2 Standards cited

Provisions in the following standards are cited in this technical requirement, and therefore form the provisions of the standard. They have the same effectiveness as the technical requirement itself.

GB/T 5009.60—1996 Method for analysis of hygienic standard of products of polyethylene, polystyrene and polypropylene for food packaging

GB 14934—1994 Hygienic standard for disinfection of dinner and drinking set

GB/T 15596—1995 Plastics—Determination of changes in colour and variations in properties after exposure to daylight under glass, natural weathering or artificial light

GB/T 16288—1996 Marking for plastic packing products recycling

GB/T 16422.1—1996 Plastics—Methods of exposure to laboratory light sources—Part 2: xenon arc lamp

GB 18006.1—1999 General-purpose technology condition of disposable tableware

GB/T 18006.2—1999 Test method of degradability of disposable tableware

In case of the criteria above are revised, the latest version should be applied.

## 3 Product category

In this technical requirement, disposable food and drink containers are classified into 3 categories according to source of raw material, production process, degradation type and recycling level:

a. Biodegradable Material: such as paper product (including paper pulp moulding type, pasteboard film type), food powder moulding type, plant fiber moulding type, etc.

b. Photo-biodegradable material: photo-biodegradable plastics (non-foaming).

c. Material liable to recycling: such as polypropylene (PP), high-impact polystyrene (HIPS), biaxial oriented polystyrene sheet material, acrylic composite product filled with high loading natural inorganic mineral, etc.

## 4 Definition

4.1 "Disposable food and drink containers" refer to disposable boxes, bowls, cups, dishes, chopsticks used in food and drink industry or food packaging industry for packing vegetable, fruit, instant noodle.

4.2 "Degradation" refers to obvious chemical and physical changes in a certain environmental condition, and consequently lead to reduce of molecular weight, descending of physical and mechanical properties or decompose into carbon dioxide and water.

---

Approved by SEPA on 01/27/2000

Entered into force on 01/27/2000

4.3 "Biodegradation" means that materials decompose into water and carbon dioxide due to mould, decomposition action of natural microbe such as bacteria, fungi, algal.

4.4 "Photo-biodegradation" means that chemical structure of materials with biodegradability changes in the action of sunlight; its strength reduces and it occurs splitting and pulverizing.

4.5 "Liable to recycling" means that products are not easy to be degraded, while there is available recycling technique to setup recovery system to a certain scale.

4.6 "Recycling rate" refers to ratio of net weight of recycled waste food and drink containers to sales weight on the market.

## 5 Basic requirements

5.1 Disposable food and drink containers should conform with the requirements of "5 Basic technical requirement; 6 appearance and usability of finished product; 11 packing, labelling, transporting and storing" in GB 18006.1-1999.

5.2 Pollutant emission of the company should be obliged to conform with pollutant emission standards nationally or locally.

## 6 Technical contents

### 6.1 Hygienic indexes

6.1.1 Physics and chemistry hygienic indexes of disposable food and drink containers should conform with requirements listed in table 1.

Table 1 Physics and chemistry hygienic requirement for disposable food and drink containers

Serial number	Items		Product type and requirement indexes			
			Pasteboard film	Paper pulp moulding	Plant fiber moulding	Food powder moulding
1	Evaporation residue mg/L	Water, 60°C, 2h	≤30			
		N-hexane, 20°C, 2h	≤30			
		4%Acetic acid, 60°C, 2h	≤30			
		65%Ethanol, 20°C, 2h	≤30			
2	Potassium permanganate consumption (Distilled water, 60°C, 2h), mg/L		≤10	—		
3	Heavy metal (4%Acetic acid, 60°C 2h)	By Pb, mg/L	≤1			
		By As, mg/L	≤1			
		By Cd, mg/L	—	≤0.2	—	
4	Fluorescence substance (254nm and 365nm)		Fluorescence area of any 100cm <sup>2</sup> sample should not be greater than 5cm <sup>2</sup> .			
5	Toluylene diamine (4% acetic acid), mg/L		≤0.004	—		
6	Fluorine (Distilled water, 60°C, 2h), mg/L		—	0.2	—	
7	Phosphate pesticide residue level, mg		—	—	Conform to annex A	—
8	AflatoxinB1, ug/kg		—	≤5		
9	B[a]P, ug/kg		—	≤5		
10	Decoloration test	Cold soy or leuko-grease	Negative			
		Ethanol	Negative			
		Soak solution	Negative			

6.1.2 Hygienic indexes of disposable food and drink containers made from primary raw materials of plastic (polypropylene, high-impact polystyrene, etc.) should accord with relevant current national hygiene standards for plastic formed piece.

6.1.3 Bacteria index of acceptable end-product of disposable food and drink containers

## HBC 1—2001

should meet the requirement in GB 14934, and mold counting is not allowed to be greater than 50 per gram.

### 6.2 Environmental degradation performance

6.2.1 Biodegradable materials should keep its biodegradability after treatment of waterproof, greaseproof. Environmental degradation performance should conform to requirement in table 2.

6.2.2 Photodegradability of photo-biodegradable material products should conform with requirements in table 3. And environmental degradation performance should conform with requirements in table 2.

6.3 Disposable food and drink containers made from materials liable to recycle should have obvious marks for raw materials, and be indicated the recycle label according to GB/T 16288.

6.4 Waste of disposable food and drink containers made from materials liable to recycle should be recycled; and there should be perfect recycling system. Recycling rate should not be less than 75%.

Table 2 Requirement of degradation performance of biodegradable materials

Items	Requirement for indexes				
	Plastic product (partially degradable)	Paper product	Plant fiber product	Food powder product	Other complete biodegradable product
Secured biodegradation rate in aerobic composting test (%)	≥30	≥30	≥50	≥50	≥60

Table 3 Requirement for degradation performance of food and drink containers made from photo-biodegradable materials

Items	Accumulated radiant quantity	Requirement for indexes					
		Split level	Wight-average molecular weight decline rate	Low molecular (<10000) percentage composition	Index of carbony	Mold erosion level	Carbon dioxide production
Method of laboratory light source exposure test for plastic	16800 KJ/m <sup>2</sup>	≥Level II	≥70%	≥15%	≥2	≥Level II	Positive

Note: test for mold erosion applies to fragment with >2cm x 2cm area; test for carbon dioxide production applies to fragment with ≤ 2cm x 2 cm area.

## 7 Test

7.1 Hygienic Index of physics and chemistry of products should conform with "9.8 test for physics and chemistry indexes; 9.9 Test for microbe" in GB18006.1-1999.

### 7.2 Environmental degradation performance of products

7.2.1 Degradation performance of biodegradable products should be determined according to the method described in GB/T 18006.2-1999.

7.2.1 Degradation performance of photo-biodegradable products should be determined according to the method specified in GB/T 18006.2-1999.

7.3 Provisions specified in 6.3 of technical contents should be verified by field inspection.

7.4 Provisions specified in 6.4 of technical contents should be determined by the way of checking documents of recycle system, contracts between manufacture and recycle party and relevant recycling records in field inspection.

## Annotations:

This technical requirement has been prepared by Department of science and technology, standards of State Environment Protection Administration.

The State Environment Protection Administration keeps the right of interpretation for this technical requirement.