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GB 18006-2008
Replaces GB 18006.1-1999

General requirement of disposable plastic tableware

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Foreword

Section 5.8 of this Standard is a mandatory clause.

This Standard replaces GB 18006.1-1999 (General specification for single use and degradable lunch container and drinking set).

Compared to GB 18006.1-1999, the main differences to this Standard are:

- the title of the Standard has been changed from *General specification for single use and degradable lunch container and drinking set* to *General requirement of disposable plastic tableware;*
- the scope of the Standard has been changed from disposable and degradable lunch container and drinking set to disposable plastic tableware This Standard does not apply to any disposable tableware made of non-thermoplastic materials, such as disposable paper tableware, paper cups, wooden chopsticks, bamboo chopsticks, etc.;
- the classification methods have been modified;
- the technical requirements for the material have been modified;
- the contents for sensory indexes such as odour have been added;
- the applicable scope and the test sample quantity for service performance tests have been clarified;
- the applicable scope, test method and technical index for the requirement of degradability have been modified;
- the requirement of starch content for starch-based plastic disposable tableware has been increased;
- the microwave-use performance and the test methods for disposable tableware which is marked microwave-safe have been increased;
- the hygienic, physical and chemical indexes for starch-based plastic disposable tableware and other disposable tableware have been supplemented;
- Appendix A has been added;
- the degradability requirement and test method from GB/T 20197-2006 has been adopted. GB/T 18006.2-1999 is no longer used;
- the inspection rules have been modified.

Appendix A to this Standard is a normative appendix.

This Standard is proposed by the China National Light Industry.

This Standard is under the jurisdiction of the China National Technical Committee of Standardisation for Plastic Products.

The main organisations that participated in the drafting of this Standard:
Institute of Plastics Processing & Application of Light Industry;
National Centre of Testing and Supervision for Quality of Plastic (NTSQP) (Beijing).

The main drafters of this Standard:
Weng Yunxuan, Chen Jiaqi, Chen Qian.

This Standard replaces the following previously issued standards:
- GB 18006.1-1999.

General requirement of disposable plastic tableware

Scope

This Standard specifies the definitions and terms, classifications, technical requirements, test methods, inspection rules and requirements for product symbols, packing, transport and storage of disposable plastic tableware.

This Standard applies to various kinds of disposable thermoplastic tableware.

Normative references

The provisions of the following documents become provisions of this Standard after being referenced. For dated reference documents, all later amendments (excluding corrigenda) and versions do not apply to this Standard; however, the parties to the agreement are encouraged to study whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB/T 462-2003, Paper and board – Determination of moisture content (MOD ISO 287:1985)

GB/T 2828.1-2003, Sampling procedures for inspection by attributes – Part1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection (IDT ISO 2859-1:1999)

GB/T 4789.4, Microbiological examination of food hygiene – Examination of Salmonella

GB/T 4789.5, Microbiological examination of food hygiene – Examination of Shigella

GB/T 4789.10, Microbiological examination of food hygiene – Examination of Staphylococcus Aureus

GB/T 4789.11, Microbiological examination of food hygiene – Examination of Streptococcus Hemolyticus

GB/T 4789.15, Microbiological examination of food hygiene – Enumeration of moulds and yeasts

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

GB/T 5009.67, Method for analysis of hygienic standard of products of polyvinyl chloride for food packaging

GB/T 5009.156, General principle for the determination of migration of packaging materials and their products.

GB 9681, Hygienic standard of product of polyvinyl chloride for food packaging

GB 9685, Hygienic standard for use of additives in food containers and packaging materials

GB 9687, Hygienic standard for polyethylene products used as food containers and tableware

GB 9688, Hygienic standard for polypropylene products used as food containers and tableware

GB 9689, Hygienic standard for polystyrene products used as food containers and tableware

GB 13113, Hygienic standard for polyethylene tetraphthalate products used as food containers and packaging materials

GB 14934, Hygienic standard for disinfection of dinner and drinking set

GB 19305, Hygienic standard for foodstuff vegetable fibre of containers

GB/T 20197-2006, Define, classify, marking and degradability requirement of degradable plastic

QB/T 2957-2008, Determination of starch content of starch based plastic (TG)

Terms and definitions

The definitions and terms listed below apply to this Standard.

Disposable tableware

Apparatus used to contain ready-prepared food or for other similar uses, including disposable tableware such as food boxes, plates, dishes, knives, forks, spoons, chopsticks, bowls, cups, pots, jars and straws etc. Disposable tableware with an outer holder is also included, but food packaging used for non-prepared food purposes or other similar uses such as fresh food trays, yoghurt cups and jelly cups etc., are not included.

Plastic disposable tableware

Disposable tableware made of resins or other thermoplastic materials by the process of thermoplastic moulding.

Degradable disposable tableware

Disposable tableware which, under the natural condition of soil and/or sand soil, and/or a specific condition such as composting condition or anaerobic digestion condition or in an aqueous medium, as a result of the degradation caused by the microbial action existing in nature, finally and completely degraded and changed into carbon dioxide (CO_2) or/and methane (CH_4), water (H_2O) and the mineralised inorganic salt of its constituent elements, as well as new biomass.

Starch-based plastic disposable tableware

Disposable tableware made of starch-based plastics, the starch content of which must not be less than 40%.

Plant fibre moulding disposable tableware

Disposable tableware made of fibre powder from plants such as straw etc., by processing methods such as thermoplastic moulding or mould pressing, etc.

Other disposable tableware covered with plastics

Disposable tableware, the contact food surface of which is covered or composed of plastic film or

plastic sheet.

Classification

On the basis of the materials, plastic disposable tableware can be divided into general plastic disposable tableware, plant fibre moulding disposable tableware, starch-based plastic disposable tableware and other disposable tableware covered with plastics.

On the basis of the degree of heat-resistance, disposable tableware can be divided into heat-resistant disposable tableware and non-heat resistant disposable tableware.

On the basis of degradability, disposable tableware can be divided into degradable disposable tableware and non-degradable disposable tableware.

Disposable tableware can also be divided into microwave-safe disposable tableware and microwave-unsafe disposable tableware.

Technical requirements

5.1 Materials

Materials such as resin shall be food-grade.

5.2 Additives

Additives and their dosage shall meet the provisions set out in GB 9685.

5.3 Sensory

5.3.1 Odour

There must be no odour.

5.3.2 Appearance

The appearance of the tableware shall meet the following requirements:

a) The colour shall be normal.

b) There must be no cracks or packaging defects.

c) There shall be no grease, dirt, dust, mould or other foreign bodies on the surface.

d) The surface shall be smooth and clean with uniform texture, no scratches, no puckering, no peeling, no ruptures and no perforations.

e) There must be no clear discolouration, uneven colours (unless required for decoration purposes) or stains, etc., on the coloured tableware.

f) If there is any painting on the surface of the tableware, the painted surface shall have no sagging, peeling, breaching or blistering, etc.

g) There must be no clear foreign bodies, blistering, model defects, burrs, expansion or other defects.

5.3.3 Structures

a) The edges of the tableware shall be smooth, tidy and neat.

b) For products fitted with a lid, the lid fitting shall be convenient and level, the container and the lid shall match each other.

c) For products fitted with a hinged lid, the lid shall be able to be fastened.

d) For disposable tableware that functions as a vessel, the tableware shall be able to be placed steadily.

5.4 Service performance

5.4.1 Volume deviation

For tableware such as disposable food boxes, bowls, cups, jars and pots etc. which function as a vessel, the volume deviation thereof shall not be greater than 5%.

The volume deviation only applies to disposable tableware which functions as a vessel; it is not a requirement for disposable tableware such as knives, forks, spoons, chopsticks, plates and dishes, etc.

5.4.2 Load-bearing performance

For any disposable tableware such as food boxes, bowls and cups, changes to the height thereof before and after bearing a load shall not exceed 5%.

Load-bearing tests only apply to disposable tableware such as food boxes, bowls and cups which can be held in the hands or may be stacked while containing food; it is not a requirement for disposable tableware such as knives, forks, spoons, chopsticks, dishes, plates or any disposable tableware having an outer holder.

5.4.3 Drop performance

During the drop test of disposable tableware, there must be no cracks or splits to any of the three samples.

5.4.4 Folding lid fitting performance

For disposable tableware where the container part and its lid are hinged together, there must be no cracks or damage after the folding lid fitting test on all three samples.

The folding lid fitting test only applies to disposable tableware where the container part and its lid are hinged together. For disposable tableware where the container and its lid are separated in two parts or disposable tableware with no lid, such as food boxes, bowls, cups, plates, dishes, knives, forks, spoons or chopsticks etc., the lid-body folding test is not a requirement.

5.4.5 Temperature-resistance performance

5.4.5.1 Hot-water resistance

After the hot-water resistance test, there shall be no deformations, peelings or wrinkles to the disposable tableware. For disposable tableware that functions as a vessel, there shall be no deformations, smears or leakages.

There must be no deformations or smears to, or leakages of, either sample.

The hot-water resistance test applies only to disposable tableware such as boxes, cups or bowls which are intended to contain hot dishes, hot food and hot drinks, for disposable tableware such as plates, dishes, knives, forks or chopsticks which do not require heat resistance, the hot-water resistance test is not a requirement, for any disposable tableware which is marked as non-heat resistant, the hot-water resistance is also not a requirement.

5.4.5.2 Hot-oil resistance

After the hot-oil resistance test, disposable tableware shall have no deformations, peelings or wrinkles. For disposable tableware that functions as a vessel, there shall be no smears or leakages after the hot-oil resistance test.

There must be no deformations or smears to, or leakages of, either sample.

The hot-oil resistance test only applies to disposable tableware such as boxes, cups or bowls which are intended to contain hot dishes, hot food and hot drinks, for disposable tableware such as plates, dishes, knives, forks or chopsticks which do not require heat resistance, the hot-oil resistance test is not a requirement, for any disposable water cups or any disposable tableware which is marked as non-heat resistant, the hot-water resistance test is also not a requirement.

5.4.6 Water leakage resistance

For disposable tableware such as boxes, bowls or cups which have the function of containing liquid, after the water leakage test, there must be no water leakage.

For disposable tableware which is marked as not for containing liquid or any other disposable tableware which has no liquid-containing function, water leakage resistance is not a requirement.

5.4.7 Microwave-safe test

5.4.7.1 Microwave high-frequency heat performance

There shall be no electric sparks, no defects, odour or abnormality. There must be no defects, odour or abnormality with either test sample.

5.4.7.2 Microwave temperature-resistant performance

There shall be no deformations, defects, leakages or abnormality. There must be no deformations, defects, leakages or abnormality with all three samples.

5.5 Moisture content

For disposable tableware made of natural materials such as plant fibre moulding disposable tableware etc., the moisture content must not exceed 7%.

The determination of moisture content only applies to disposable tableware made of natural materials. For disposable tableware made of other materials, the determination of moisture content is not required.

5.6 Biodegradability

The biodegradability for degradable disposable tableware shall meet the requirements of biodegradability specified in GB/T 20197-2006.

The biodegradability determination only applies to disposable tableware claimed or indicated or marked to be degradable. For non-degradable disposable tableware, the biodegradability determination is not required.

5.7 Starch content

For starch-based plastic disposable tableware, the starch content must not be less than 40%.

The determination of starch content only applies to disposable tableware claimed or indicated or marked to be starch-based plastic disposable tableware. For any other disposable tableware the determination of starch content is not required.

5.8 Physical, chemical and hygienic indexes

The use of any additive for disposable tableware shall meet the provisions set out in GB 9685.

Disposable tableware made of polyethylene shall meet the provisions set out in GB 9687.

Disposable tableware made of polypropylene shall meet the provisions set out in GB 9688.

Disposable tableware made of polyvinyl chloride shall meet the provisions set out in GB 9681.

Disposable tableware made of polystyrene shall meet the provisions set out in GB 9689.

Disposable tableware made of polyethylene tetraphthalate shall meet the provisions set out in GB 13113.

The plastic layers of disposable tableware made of other composite plastics shall meet the provisions set out in the hygienic standards for plastic products of that corresponding material.

Disposable tableware made of disposable plant fibre materials with processing of thermoplastic moulding shall meet the provisions set out in GB 19305.

Disposable tableware made of other materials shall meet the provisions set out in the hygienic standards for products of the corresponding material. Disposable tableware made of multilayer materials with composite processing shall meet the provisions set out in the hygienic standards of products of food contact layer material.

Starch-based plastic disposable tableware shall meet the specifications prescribed in Table 1. The hygienic index for disposable tableware made of materials with no hygienic standard for material products shall meet the specifications prescribed in Table 2. For the specifications prescribed in Tables 1 and 2, when there is a corresponding national hygienic standard issued and implemented, then the indexes shall adopt the specifications prescribed in the corresponding standard.

Table 1 Hygienic, physical and chemical indexes for starch-based plastic disposable tableware

Item	Index
Evaporation residue, mg/L	
Water, 60 °C, 2 h, •	30
4% Acetic acid, 60 °C, 2 h, •	60
65% Ethanol, 20 °C, 2 h, •	30
N-hexane, 20 °C, 2 h, •	60
Heavy metal, mg/L, 4% Ethanol, 60 °C, 2 h	
By Pb, •	1
By As, •	1
Discolouration test	
Ethanol	Negative
Salad dressing oil or leuco grease	Negative
Immersion liquid	Negative

Table 2 Hygienic, physical and chemical indexes for disposable tableware made of other materials

Item	Index
Evaporation residue, mg/L	
Water, 60 °C, 2 h, •	30
4% Acetic acid, 60 °C, 2 h, •	30
65% Ethanol, 20°C, 2h, •	30
N-hexane, 20°C, 2h, •	30
Potassium permanganate	10

consumption, mg/L, • Water, 60 °C, 2 h	
Heavy metal, mg/L, 4% Ethanol, 60 °C, 2 h	
By Pb, •	1
By As, •	1
Discolouration test	
Ethanol	Negative
Salad dressing oil or leuco grease	Negative
Immersion liquid	Negative

5.9 Microbial index

For conformity of products leaving the factory, the indexes of Escherichia Coli and pathogenic bacteria shall meet the provisions set out in GB 14934. The numeration of moulds must not be more than 50/g. Both samples must meet the requirements.

6 Test methods

6.1 Odour

The test shall be conducted in a laboratory under normal conditions.

6.2 Appearance and structure

The checking shall be conducted in a laboratory under a 45° spotlight.

6.3 Volume deviation

The test shall be conducted in accordance with the method specified in GB/T 17409. Three samples shall be extracted to carry out this test; the average value of the test results from the three samples shall be regarded as the final test result.

6.4 Temperature resistance test

Place two samples onto an enamel plate lined with filter paper, fill completely with hot water at a temperature of 95 °C±5 °C (use hot water at 100 °C for instant noodle cups) or hot cooking oil (drinking sets only require a temperature resistance test with hot water at 100 °C). Move the samples and leave them to stand in a thermostat container at 60 °C for 30 minutes, then check the samples for any deformation or any traces of smeared discolouration or leakage.

6.5 Water leakage test

Place two samples onto an enamel plate lined with filter paper, fill completely with hot water, at a temperature of 23 °C± 2 °C, leave the samples standing for 30 minutes, then check the samples for any deformations thereto or any traces of smears or leakage at the bases thereof.

6.6 Weight load test

Test equipment: two smooth glass plates of size 200 mm x 150 mm x 3 mm, a weight of 3 kg, a steel rule with accuracy of 1 mm.

Test procedure: extract two samples, position the main body of the samples up-side down on one of the glass plates, and put another glass plate onto the base of the samples. Measure the height between the top surface of the first glass plate to the bottom surface of the second glass plate. Place

the 3 kg weight onto the centre of the second glass plate. After one minute, accurately measure the height between the top surface of the first glass plate to the bottom surface of the second glass plate. Determine the variation rate of the weight loading using formula (1). The arithmetic average value of the variation rates from the two samples is regarded as the variation rate of the weight loading.

$$w = \frac{H_0 - H}{H_0} \times 100 \quad \cdots\cdots (1)$$

in which,

W – the variation rate of the weight load of the sample, as a percentage (%);

H_o – the height before weight loaded, in millimetres (mm);

H – the height after weight loaded, in millimetres (mm).

6.7 Folding lid fitting test

Continuously open and shut the lid of a hinged-lid container sample for 15 minutes, then check for any cracking or damage at the hinge. Extract three samples to conduct this test.

Note: This test applies only to disposable tableware in which the lid and the container are hinged together.

6.8 Drop test

At a normal temperature, allow the samples to drop freely, facing bottom-down, from a height of 0.8 m, onto a level cement floor. Check if the samples are intact. Extract three samples to conduct this test.

6.9 Microwave safe test

6.9.1 Microwave high-frequency heat test

6.9.1.1 Equipment

A microwave with a rated frequency modulation output power of less than 2 kW.

6.9.1.2 Procedures

Place a sample in the microwave, select the heating time from Table 3 which corresponds to the rated output power of the microwave to heat the sample.

Table 3 Contrast of output power and heating time

Rated output power, kW	Heating time, min.
2.0	1.0
1.0	2.0
0.6	3.5
0.5	4.0

After the heating is completed, remove the sample from the microwave, cool to room temperature, and also allow the microwave to cool to room temperature.

Test another sample repeating the above procedure.

Note: this test only applies to tableware indicated, claimed or marked to be microwave safe.

6.9.2 Microwave heat-resistance test

6.9.2.1 Reagent

Olive oil, food-grade.

6.9.2.2 Equipment

A microwave with a rated frequency modulation output power of less than 2 kW.

A thermometer, a digital display thermocouple.

6.9.2.3 Procedure

Pour approximately 50% of the sample volume of olive oil into the sample, place the sample into the microwave and start heating. When the safe temperature of the sample for microwave use is marked as under 200°C, then heat the olive oil until the temperature thereof reaches the designated temperature. When the safe temperature of the sample for microwave use is marked as equal to or more than 200°C, then heat the olive oil until the temperature thereof reaches 200°C.

When the required temperature has been reached, stop heating, remove the sample, leave it to cool at room temperature until its temperature falls to room temperature and then check the sample for any deformation, defect, leakage and abnormality thereto.

Test another two samples, repeating the above procedure.

Note: this test only applies to tableware which is intended for containing liquid and is indicated, claimed or marked to be microwave safe.

6.10 Moisture content

The test shall be conducted in accordance with GB/T 462.

Extract three samples to conduct the test, the average value of the test results from the three samples shall be regarded as final test result.

6.11 Biodegradability test

The biodegradability test method shall be according to Section 6.1 of GB/T 20197-2006.

6.12 Starch content

The determination of starch content in starch-based plastic disposable tableware shall be conducted in accordance with QB/T 2957-2008.

Extract two samples to conduct the test, the average value of the test results from the two samples shall be regarded as final test result.

6.13 Hygienic, physical and chemical indexes

The sampling method, the sample preparation and the preparation of the immersion liquid shall meet the requirements specified in GB/T 5009.156.

When the material is polyethylene, polystyrene or polypropylene, the test shall be conducted in accordance with the requirements specified in GB/T 5009.60.

When the material is polyvinyl chloride, the test shall be conducted in accordance with the requirements specified in GB/T 5009.67.

When the material is polyethylene terephthalate, the test shall be conducted in accordance with the requirements specified in GB 13113.

For disposable tableware made of plant fibre materials, the test shall be conducted in accordance with the requirements specified in GB 19305. The method of testing evaporation residue shall be performed in accordance with Appendix A. The evaporation residue not containing plant fibre shall

be regarded as the result.

The method of testing evaporation residue for starch-based plastic disposable tableware shall be performed in accordance with Appendix A. The evaporation residue not containing starch shall be regarded as the result. Others shall be conducted in accordance GB/T 5009.60.

For other disposable tableware covered with plastics, the analysis of their plastic layers shall be conducted in accordance with the analysis method specified in the hygienic standard for products of the corresponding material.

For disposable tableware made of other materials, the determination shall be conducted in accordance with the analysis methods specified in the hygienic standards for products of the corresponding materials. If no such hygienic standard exists, then it shall be conducted in accordance with GB/T 5009.60.

6.14 Microbiological detection

The determination of coliform bacteria shall be conducted in accordance with GB 14934, the determination of pathogenic bacteria shall be conducted in accordance with GB/T 4789.4, GB/T 4789.5, GB/T 4789.10 and GB/T 4789.11 respectively. The enumeration of moulds shall be conducted in accordance with GB/T 4789.15.

Extract two samples respectively to conduct the tests.

7 Inspection rules

7.1 Group lot

The acceptance check for the products shall use the lot as the unit. For products which are made of the same grade material, have the same specifications, the same formula and have been continuously produced, one lot shall not exceed 5 t.

7.2 Inspection classification

7.2.1.1 Factory inspection

Factory inspection items include sensory inspection and service performance.

7.2.1.2 Type inspection

Type inspection items are all the items specified in the requirements.

7.3 Sampling plan

7.3.1 Sensory

Adopt the normal double sampling plan specified in GB 2828.1-2003. The Inspection Level (IL) shall be the general inspection level II, the Acceptance Quality Limit (AQL) shall be 6.5, see Table 4 for detailed samples and decision arrays. Each unit of packing is regarded as one sample unit. The packing unit can be case, bag, item etc. When testing, randomly select one product from each packing unit as the test sample.

Table 4 Sensory sampling plan and decision

Unit: packing unit

Lot size	Sample	Sample size	Cumulative sample size	Acceptance number (Ac)	Rejection number (Re)
26 ~ 50	First sample Second sample	5 5	5 10	0 1	1 2

51 ~ 90	First sample Second sample	8 8	8 16	0 3	3 4
91 ~ 150	First sample Second sample	13 13	13 26	1 4	3 5
151 ~ 280	First sample Second sample	20 20	20 40	2 6	5 7
281 ~ 500	First sample Second sample	32 32	32 64	3 9	6 10
501 ~ 1200	First sample Second sample	50 50	50 100	5 12	9 13
1201 ~ 3200	First sample Second sample	80 80	80 160	7 18	11 19
• 3201	First sample Second sample	125 125	125 250	11 26	16 27

7.3.2 Service performance

Randomly select a sufficient number of samples from the extracted samples to conduct the inspection.

7.4 Determination rules

7.4.1 Determination for conforming item

7.4.1.1 Sensory

The sensory determination for sample units shall be conducted in accordance with Section 5.3.

If the inspection result of the sample unit meets the specifications prescribed in Table 4, then the sensory inspection shall be determined to be a conforming item.

7.4.1.2 Service performance

In the case of any item not conforming to the service performance, a double-sized sample shall be extracted from the original lot to re-inspect each of the non-conforming items. The item cannot be regarded as conforming until the re-inspection results are all qualified, otherwise it shall be determined to be a nonconforming item.

7.4.1.3 Moisture content

If the moisture content does not conform, a double-sized sample shall be extracted from the original lot to conduct re-inspection. The item cannot be regarded as conforming until the re-inspection results are all qualified, otherwise it shall be determined to be a non-conforming item.

7.4.1.4 Starch content

When the starch content of the starch-based plastic disposable tableware is non-conforming, a double-sized sample shall be extracted from the original lot to conduct re-inspection. The item cannot be regarded as conforming until the re-inspection results are all qualified, otherwise it shall be determined to be a nonconforming item.

7.4.1.5 Degradability

If there is any non-conformity of the degradability of the degradable disposable tableware, then the degradability shall be determined to be non-conforming.

7.4.1.6 Hygienic, physical and chemical indexes

If there is any non-conformity in the hygienic, physical or chemical indexes, then the hygienic, physical and chemical indexes shall be determined to be nonconforming.

7.4.1.7 Microbiological index

If there is any non-conformity in the microbiological index, then the microbiological index shall be determined to be non-conforming.

7.4.2 Determination of lot conformity

When all of the inspection results of the inspection items in a lot are in conformity, then this lot can be regarded as a conforming lot.

8 Packaging labels, packaging, transport and storage

8.1 Packaging

The products shall have inner and outer layers of packaging. The packaging shall be neat, clean and of the correct amount and shall meet the following requirements:

a) the inner packaging shall be sealed, the material used for the internal packaging must be clean, non-toxic, with no peculiar odour, and shall be dust-proof and moisture-proof.

b) the outer packaging cases shall have anti-compression, anti-dust and anti-moisture properties.

8.2 Packaging labels

There shall be an instruction label in the packaging box and the packaging label shall be marked with the following information:

a) the executive Standard number;

b) product name, species, material;

c) name and trademark of the manufacturer, lot number and production date;

d) if the product claims to be high-temperature safe or temperature non-resistant, the maximum safe temperature shall be marked;

e) if the product claims to be safe for microwave oven use, it shall be marked as microwave oven safe and the safe temperature shall be indicated;

f) if the product claims to be degradable, the degradation shall be marked;

g) if the product claims to be made of starch-based plastic, the product shall be marked as starch-based plastic tableware etc.

h) for disposable tableware having a volume requirement, the nominal volume shall be marked.

The surface of the outer packaging shall be marked with the following information:

a) the executive Standard number;

b) product name, species, material;

c) name and trademark of the manufacturer, lot number and production date;

d) product quantity or gross weight, net weight and volume of the packing;

e) if the product claims to be high-temperature safe or temperature non-resistant, the maximum safe temperature shall be marked;

f) if the product claims to be safe for microwave oven use, it shall be marked as microwave oven safe and the safe temperature shall be marked; if the product claims to be hot-oil non-resistant, it shall be marked as hot-oil non-resistant;

g) if the product claims to be degradable, the degradation shall be marked;

h) if the product claims to be made of starch-based plastic, the product shall be marked as starch-based plastic tableware, etc.;

i) for disposable tableware having a volume requirement, the nominal volume shall be marked;

j) product storage requirement and storage duration;

k) the words “for food use” and the symbols “anti-pollution, keep dry, avoid compression, handle with care”.

8.3 Transport and storage

The products must not be transported or stored with any poisonous or harmful substances

During the transportation of the products, the product must be handled with care, avoiding severe vibration and compression and avoiding direct sunlight and rain water.

The product must be stored in ventilated, cool and dry warehouses, avoiding direct sunlight and rain water. The product must be kept away from any sources of pollution or heat and from moisture, rats, mice and insects. The reasonable storage duration shall be determined on the basis of the properties of the disposable tableware.

Appendix A

(Normative Appendix)

Method of testing evaporation residue for starch-based plastic disposable tableware and plant fibre disposable tableware

A.1 Sampling

Sampling shall be conducted in accordance with the method specified in Clause 3 of GB/T 5009 156-2003. The sample size shall meet the requirements prescribed in Table A1 (Plastic products, composite packaging and plastic film bags used for food packaging) of Appendix A to GB/T 5009.156-2003.

A.2 Cleaning the samples

The cleaning of the food contact surface of the samples shall be conducted in accordance with the method specified in Clause 5 of GB/T 5009.156-2003.

A.3 Immersion of the samples

The immersion liquid, immersion duration and inspection requirement shall be according to GB/T 5009.60.

Pour a corresponding amount of immersion liquid into a plastic shopping bag, normally 2/3 ~ 4/5 of the sample volume, immersing for the required time length.

A.4 Analysis procedure

A.4.1 Evaporation residue containing plant fibre or starch

After heating a glass evaporation pan or a glass cup to constant weight with a temperature of (105± 5) ^{o}C, put 200 ml of a corresponding immersion liquid into the glass evaporation pan or the glass cup, leave it on a water bath until evaporated to dry, then place it in an electric thermostatic drying oven at a temperature of (105± 5) ^{o}C to heat for two hours. Remove and leave in a desiccator to cool for half an hour and measure the weight. Then heat it again for one hour, leave it in the desiccator to cool for half an hour, measure the weight again.

A.4.2 Evaporation residue containing no plant fibre or starch

Add 50 ml chloroform (GB/T 682, analytical reagent, after redistillation) to the dry, weighed residue (A.4.1), place it on a water bath and heat carefully for 10 minutes (use a glass rod to stir, when taking out the glass rod, rinse it with a small amount of chloroform). Use a glass funnel and quantitative analysis filter paper (heated to constant weight with a temperature of (105± 5) ^{o}C) to filter the liquid, and then use a small amount of chloroform to rinse the residue off the filter paper three times. Place the filter paper and the residue into a ceramic crucible which is heated to constant weight with a temperature of (105± 5) ^{o}C, then heat the ceramic crucible in an electric thermostatic drying oven at a temperature of (105± 5)^{o}C for two hours, cool for half an hour in a dryer and measure the weight. Repeat the heating for one hour, cool for half an hour and measure the weight again.

Place the ceramic crucible, filter paper and residue into a high-temperature electric furnace (550± 5) ^{o}C, ashing until it burns without smoke for two hours. Remove the ceramic crucible and leave it to cool in a dryer for half an hour, then measure the weight. Repeat the burning for one hour, cool for half an hour and measure the weight again, until the weight difference of the two measurements does not exceed 0.002g.

Note: A high temperature (550± 5)^{o}C burning test shall be conducted on a quantitative analysis filter paper, the residue left over from the filter paper burning shall be deducted from the analysis result.

A.5 Calculated result

A.5.1 Evaporation residue containing plant fibre or starch shall be determined by formula B.1:

$$X_1 = \frac{(m_1 - m_2)}{200} \times 1000 \quad \text{(B. 1)}$$

in which,

X_1 ----- the evaporation residue (containing fibre or starch) of the sample immersion liquid (different immersion liquids), unit is milligrams per litre (mg/L);

m_1----- the mass of the evaporation residue of the sample immersion liquid, unit is milligrams (mg);

m_2------the mass of the blank immersion liquid after evaporation, unit is milligrams (mg).

A.5.2 Evaporation residue not containing plant fibre or starch shall be determined by formula B.2:

$$X_2 = X_1 - \frac{(m_3 - m_4) - (m_5 - m_6)}{200} \times 1000 \quad \text{(B. 2)}$$

in which,

X_2 ----- the evaporation residue (not containing fibre or starch) of the sample immersion liquid (different immersion liquids), unit is milligrams per litre (mg/L) L;

m_3-------the mass of the evaporation residue, ceramic crucible and filter paper after chloroform extraction and being heated, unit is milligrams (mg);

m_4 ------ the mass of the ceramic crucible and the filter paper, unit is milligrams (mg);

m_5 ------ the mass of the evaporation residue and the ceramic crucible after burning, unit is milligrams (mg);

m_6------ the mass of the ceramic crucible, unit is milligrams (mg).

When reporting the result, take three significant digits of the average value.

A.6 Permissible difference

The difference between two determined results of the same sample must not exceed 10% of the average value.