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Paper cup

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Paper cup

1 Scope

This document specifies the terms and definitions, grading and classification, requirements, test methods, inspection rules, marking, packaging, transportation, and storage of paper cups.

This document applies to all kinds of paper cups except pulp molded paper cups.

2 Normative references

The following documents contain the provisions which, through normative reference in this document, constitute the essential provisions of this document. For the dated referenced documents, only the versions with the indicated dates are applicable to this document; for the undated referenced documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 2828.1 Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

GB/T 10739 Paper, board and pulps - Standard atmosphere for conditioning and testing

GB/T 36392 PE (PP, PET) coated paper and board for food packaging

GB/T 39951 Evaluation method for degradability of disposable paper products

QB/T 4032 Carton base paper (board)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 paper cup

A cup-shaped paper container that is made of carton base paper processed by coating (waxing) or laminating (coating) film or compounding with other materials, printing, die-cutting, molding, etc. after laminating (coating) film.

NOTE: Printing is not a necessary process, if printing is not required, this process can be omitted.

3.2 paper cup for direct drinking liquid

The paper cup that is used for containing liquid and directly drinking the contained liquid without other auxiliary tools.

3.3 paper cup for packaging container

As a packaging container for liquid and solid food, the paper cup that needs to be equipped with other auxiliary tools (such as spoons and straws) for drinking (eating) the food when it contains liquid food.

4 Grading and classification

4.1 Paper cups are divided into superior products, first-class products, and qualified products according to their quality.

4.2 Paper cups are divided into paper cups for direct drinking liquid and paper cups for packaging containers according to their functions.

4.3 Paper cups are divided into cold drink cups, hot drink cups, ice cream cups, yogurt (milk) cups, and solid food cups according to their uses.

5 Requirements

5.1 Sensory indexes

5.1.1 The mouth and bottom of the paper cup shall not be sunken or wrinkled; the laminated (coated) film layer and coated (waxed) layer shall be uniform, and the cup body shall be clean and free of foreign matter.

5.1.2 The printed pattern on paper cups shall have a clear outline, uniform color, and no obvious color spots; patterns shall not be printed within 15 mm (excluding 15 mm) from the mouth of the cup to the body of the cup. The capacity marking with a total length of no more than 10 mm can be printed within 15 mm (excluding 15 mm) from the mouth of the cup to the body of the cup.

NOTE: The requirement that “patterns shall not be printed within 15 mm (excluding 15 mm) from the mouth of the cup to the body of the cup” is only applicable to paper cups for direct drinking liquid, and not applicable to paper cups for packaging containers.

5.2 Capacity deviation

The capacity deviation of paper cups shall meet the requirements in Table 1.

NOTE: The biodegradability is only assessed for paper cups that are explicitly biodegradable (degradable).

5.5 Compostability

5.5.1 Biodegradation rate

It shall be the same as 5.4.

5.5.2 Degree of disintegration

The degree of disintegration shall be greater than or equal to 90%.

5.5.3 Ecotoxicity

The percentages of germination numbers of compost samples and blank compost shall be greater than or equal to 90%.

NOTE: The compostability performance is only assessed for paper cups that are explicitly compostable.

5.6 Raw materials

Carton base paper for paper cups shall comply with the regulations of QB/T 4032; PE, PP, PET coated paper, and cardboard for paper cups shall comply with the provisions of GB/T 36392; PLA, PBS coated paper, and cardboard shall comply with the provisions of relevant standards.

6 Test method

6.1 Sample collection and processing

Take a sufficient number of representative samples for testing.

When measuring physical properties, the sample shall be subjected to temperature and humidity treatment for at least 4 h under the conditions specified in GB/T 10739, and the measurement shall be carried out under these conditions.

6.2 Sensory indexes

The appearance, printing, coated or laminated layer of the paper cup shall be visually inspected; the length of the non-printed part of the paper cup shall be measured with a ruler with a graduation value of 1 mm.

6.3 Capacity deviation

6.3.1 Capacity determination

6.4.4 Compostability

The biodegradation rate, disintegration degree, and ecotoxicity shall be determined according to GB/T 39951.

7 Inspection rules

7.1 Inspection classification

7.1.1 Factory inspection

Before leaving the factory, the products shall be inspected batch by batch according to the requirements of this document, and they can only leave the factory if they meet the requirements.

7.1.2 Type inspection

The same type of products with the same raw materials and the same process shall be subject to type inspection at least once a year. In one of the following situations, type inspection shall generally be carried out:

- a) Appraisal of trial production of new products or the production of old products transferred to a new factory;
- b) During normal production, the production process is changed or new raw materials are used for production, which may affect the product performance;
- c) During normal production, type inspection shall be carried out at least once a year;
- d) When production is resumed after suspending production for more than three months;
- e) When the factory inspection result is quite different from the last type inspection.

7.2 Inspection items

The factory inspection items and type inspection items are all inspection items except biodegradability and compostability.

Biodegradability and compostability shall be inspected at least once every five years, and the enterprise shall provide an inspection report to prove it. If inspection is required, the enterprise shall decide on its own, or it shall be agreed upon by both the supplier and the purchaser.

requirements of 5.1, then the item is judged to be qualified.

7.4.1.2 Capacity deviation

If the capacity deviation meets the requirements of 5.2, the item is judged to be qualified. The gravimetric method is the arbitration method.

7.4.1.3 Physical properties

7.4.1.3.1 Leakage performance

Measure 5 paper cups for each sample, and if all 5 paper cups meet the requirements in 5.3.1, the item is judged to be qualified.

7.4.1.3.2 Cup body stiffness

If the average stiffness of 5 paper cups meets the requirements in Table 2, the item is judged to be qualified.

7.4.1.4 Biodegradability

If the biodegradability meets the requirements of 5.4, the item is judged to be qualified.

7.4.1.5 Compostability

If the compostability meets the requirements of 5.5, then the item is judged to be qualified.

7.4.2 Judgment of qualified batches

If the test results of all inspection items are all qualified, the batch of products is judged to be qualified, otherwise, the batch of products is judged to be unqualified.

8 Marking, packaging, transportation, and storage

8.1 The sales packaging marks and transport packaging marks of paper cups include the following:

- a) The basic content of the product sales packaging mark includes:
 - Product name, executive standard number, product type, nominal capacity (mL), quality grade, product quantity, main raw materials, production date and shelf life (when applicable), product qualification mark, use method, use precautions, purpose, the name/address and contact information of the producer and (or) distributor, as well as other matters that need to be marked;
 - For degradable paper cups, the word “biodegradable (degradable)” or

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