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**INDUSTRY STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

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**Paper - based laminated materials for retortable food packaging  
stored under ambient conditions**

蒸煮食品常温储存包装用纸基 复合材料

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### Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted.

Please note that some content of this document may be patented. The issuing agency of

this document assumes no responsibility for identifying patents.

## 1 Scope

This document specifies the technical requirements, test methods, inspection rules, packaging, labeling and logging, transportation and storage.

This document is applicable to the base paper as the base material, which is compounded with plastic, aluminum foil or other barrier materials.

Cooking treatment. Or food packaging composite materials after hot filling and sealing, pasteurization treatment, and then storage at room temperature.

**Note:** This packaging composite material is only suitable for packaging containers not larger than 500mL.

## 2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 2828.1 Counting Sampling Inspection Procedure Part 1: Lot-by-Lot Inspection Sampling Plan Retrieved by Acceptance Quality Limit (AQL) GB/T 4857.5 Drop test method for packaging and transporting packages GB/T 6673 Determination of length and width of plastic films and sheets GB/T 8808-1988 Soft composite plastic material peeling test method GB/T 19789 Packaging Materials Plastic Film and Sheet Oxygen Permeability Test Coulometric Test Method GB/T 22364-2018 Determination of flexural stiffness of paper and cardboard

## 3 Terms and Definitions

The following terms and definitions apply to this document.

cooking retorting

After the food is filled into the packaging bag, the packaging is sealed, and then heat-treated in an autoclave at a temperature of up to 130 ° C for a certain period of time.

cool down.

After the food is hot-filled (hot-filling temperature of 90°C~95°C), the package is sealed, and then pasteurized under standard atmospheric pressure.

Cool after bacteria.

vertical machinedirection the direction parallel to the main orientation of the long fibers of

the paper.

horizontal crossdirection the direction perpendicular to the main orientation of the long fibers of the paper.

**NOTE:** The longitudinal stiffness is usually higher than the transverse stiffness due to the orientation of the fibers.

#### 4.1 Basic requirements

Paper-based composite materials for storage and packaging of cooked food at room temperature shall comply with the relevant national food safety standards.

#### 4.2 Appearance quality

##### 4.2.1

There should be no pollution and no foreign matter.

##### 4.2.2

The printed pattern should be complete and clear, without obvious deformation, defects and misprints.

##### 4.2.3

The inner and outer surfaces should be flat, without holes, cracks and bubbles.

#### 4.3 Dimensional deviation

The allowable deviation of the length and width of the material in the form of a single product should be  $\pm 1\text{mm}$  respectively.

The allowable deviation of the width dimension of the material in roll form shall be  $\pm 1\text{mm}$ .

#### 4.4 Quantification of inner plastic film

The quantification of the plastic film within the barrier layer should not be less than  $19\text{g/m}^2$ .

#### 4.5 Physical and mechanical properties

Physical and mechanical properties should meet the requirements of Table 1.

Table 1 Physical and mechanical properties

Project requirements drop performance (The container capacity is not more than 500mL, and the drop height is 1m) no rupture, no leakage Peel strength of inner plastic film  $\text{N}/15\text{mm} \geq 4.0$  oxygen transmission rate  $\text{cm}^3/(\text{m}^2 \cdot 24\text{h})$  Aluminum foil  $\leq 1.0$  Other barrier materials  $\leq 10.0$  stiffness mN the container capacity is not more than 250mL Vertical  $\geq 160$  Horizontal  $\geq 80$  the container capacity is greater than 250mL, and not more than 500mL

Vertical  $\geq 200$  Horizontal  $\geq 120$  heat resistance no obvious deformation, interlayer peeling, of heat-sealed parts, etc.

common phenomenon. The printing pattern is complete and clear without obvious deformation

### **5.1 Appearance quality**

Appearance quality is checked visually under natural light.

### **5.2 Dimensional deviation**

Test according to GB/T 6673.

### **5.3 Quantification of inner plastic film**

The quantification of the inner plastic film shall be tested according to the corresponding provisions of Appendix A or Appendix B according to the barrier material of the sample.

#### **5.4.1 Drop performance**

The drop performance shall be tested according to the provisions of GB/T 4857.5. Filled and autoclaved molded products should be packaged (for food raw materials) the molded packaged product after the manufacturer has filled the actual food, or the sample package filled with water by the packaging material manufacturer, if the results are inconsistent, the actual product shall be the result of the canned food shall prevail), fall freely at a height of 1m, and keep the bottom vertically downward when falling. The drop performance test shall be Smooth, hardened, level surface without sharp objects (such as calendered cement floor or terrazzo floor, etc.). The drop test should be carried out under the high pressure of the product 48h after sterilization. Five filled individually packaged samples shall be taken for testing, and each sample shall be dropped once. After the drop test on the package Pack the sample for visual inspection, and the 5 packages used for testing shall be free of leakage or rupture.

#### **5.4.2 Peel strength of inner plastic film**

The peel strength of the inner plastic film shall be tested according to the provisions of method A in GB/T 8808-1988.

#### **5.4.3 Oxygen transmission rate**

The oxygen transmission rate shall be tested according to the provisions of GB/T 19789.