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

GB/T 30693-2014

Measurement of water-contact angle of plastic films

塑料薄膜与水接触角的测量

(English Translation)

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard uses redrafted Law Amendment uses ISO 15989:2004 "water contact angle of plastic film and sheet film corona treatment Measurement".

This standard and ISO 15989:2004 compared to changes in the structure of the text is as follows.

--- To avoid ISO 15989:2004 is inconsistent with the 5.2 GB/T 1.1-2009 provisions "Suspending paragraph" 5.2.8 to 5.2.1 ~ Articles of column items to represent.

This standard and ISO 15989:2004 technical differences and their reasons are as follows.

--- Name modifications made to the standard, so that the standard approach applies not only to the film after the corona treatment, also apply to non-corona at Li film, consistent with the scope of application of this standard in Chapter 1 of the process;

--- The ISO 15989:2004 5.1 of a pinhead to "nominal diameter of 0.21mm ~ 0.52mm", in order to adapt to China's Technical conditions;

--- The ISO 15989:2004 in 5.2.8 pinhead to "nominal diameter of 0.52mm", in order to adapt our technical conditions;

--- The ISO 15989:2004 7.3 removed because its content is not suitable for China's national conditions and the number of trials have been made in 10.5 Regulations;

--- The ISO 15989:2004 is 10.3b) deleted because the algorithm involves US patent application in China and not the instrument;

--- The ISO 15989:2004 Chapter 12 precision data deletion.

This standard made the following editorial changes.

--- The ISO 15989:2004 Technical Corrigendum ISO 15989:2004/Cor.1.2007 standard clause included in the upcoming ISO 15989:2004 in 10.3c) Formula "-" to "x", and in the blank spot on the altered terms with the outer margin Vertical wire (|) representation;

--- Remove the ISO 15989:2004 Annex C (informative).

This standard by the National Quality Supervision key product testing method Standardization Technical Committee (SAC/TC374) centralized.

This standard was drafted. Guangzhou Quality Supervision and Testing Institute, Foshan Buddha Plastic Technology Group Co., Ltd., South China University of Technology, Beijing East Instrument Co., Ltd. Delphi.

1 Scope

This standard specifies the method for measuring the surface of the polymer film of the water droplet contact angle.

This standard is applicable to other polymer films in addition to a water-chemical affinity to film outside.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

ASTMD724 paper surface wettability Standard Test Method (contact angle method)
[Standardtestmethodforsurfacewet-tabilityofpaper (angle-of-contactmethod)] Corona treatment of the polymer film Standard Test Method (Standardtest ASTMD5946 water contact angle was measured
methodforcorona-treatedpolymerfilmsusingwatercontactanglemeasurements)

3 Terms and Definitions

The following terms and definitions apply to this document.

Surface energy Energy and the contact interface between the two intermolecular forces related to the free energy per unit area of \u200b\u200brepresentation.

Note: The unit surface energy is mN per meter (mN/m) or coke per square meter (J/m²).

Wetting Tension γ_{c} Liquid contact with the surface of the polymer film, the contact angle is zero when the surface tension of the liquid.

Note: wetting surface tension can be evaluated for the film, in units of mN per meter (mN/m), but also because the industry per centimeter (dyn/cm) of surface energy and is represented by Wetting Tension (1dyn/cm = 1mN/m).

Polar polarity

Quantify the value of a polymer film surface concentration of polar functional groups.

NOTE: indicates the proportion of the whole of the surface energy polar portion.

Static contact angle when the liquid on the solid surface to form droplets and balance, as the tangent gas-liquid interface in the gas, liquid and solid at the intersection of the tangent line and the solid-liquid the angle between the boundary line.