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HG

Chemical Industry Standard
of the People's Republic of China

HG/T 3009-1999

eqv ISO4593:1993

Replacing HG/T 3009-1986

Photographic film and film base - determination of thickness by mechanical scanning

胶片及片基机械扫描法

厚度的测定

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Table of Contents

Foreword.....	3
ISO Foreword.....	4
1 Scope.....	5
2 Instruments	5
3 Test samples	6
4 Procedure	6
5 Precision	7
6 Test report.....	7

Foreword

This standard is equivalent to international standards ISO4593:1993 "Plastics - Film and sheeting - Determination of thickness by mechanical scanning". It is revised based on the chemical industry standard HG/T 3009-1986 "Film base thickness determination method".

Compared with HG/T 3009, the main technical differences are as follows:

The format and technical content are written based on ISO4593. Delete the 2 chapters - Definition and Principles. Amend the content to chapter Application Scope; Add the sampling requirements of the photosensitive material.

Since the date of implementation, this standard shall replace HG/T 3009-1986.

This standard was proposed by the Technical Supervision Division of former Ministry of Chemical Industry.

This standard shall be under the jurisdiction of the Standardization Technical Focal Division of Photosensitive Material of Ministry of Chemical Industry.

The drafting organizations of this standard: China Lucky Film Corporation, and Wuxi Aermei Film & Chemicals Corporation.

The main drafters of this standard: Wu Xiankai, and Xie Qingyao.

This standard was first-time released in September 1986 as a national standard. In 1997, it was adjusted to be the recommended chemical industry standard; and the serial number was re-numbered.

Photographic film and film base - determination of thickness by mechanical scanning

1 Scope

This standard specifies the determination of photographic film, and film base thickness by using mechanical scanning method.

This standard does not apply to the determination of the thickness of the embossed film base¹.

2 Instruments

2.1 Thickness measuring device

It shall meet the following accuracy:

Measuring range is below 100 μm , including 100 μm . The accuracy shall meet 1 μm ;

Measuring range is between 100 μm and 250 μm , including 250 μm . The accuracy shall meet 2 μm ;

Measuring range is above 250 μm . The accuracy shall meet 3 μm .

NOTE: If above accuracy is not sufficient, and a higher accuracy is required, the suitable measuring instrument or method may be selected. ISO4591:1992 "Plastics - Film and sheeting - Determination of sample's average thickness, roll's average thickness and surface area of unit-weight (gravimetric-method thickness) by using gravimetric-method" describes the determination of gravimetric thickness.

The measuring surface of the device shall be consisted of a lower plane AND another plane or a radiused upper plane. All surfaces shall be polished.

2.1.1 For the plane / surface, the diameter of each surface shall be between 2.5 – 10 mm. The parallelism shall be within 5 μm . The lower surface shall be adjustable. The force applied to the measuring face shall be between 0.5 N – 1.0 N.

¹ The scope of this standard has been amended so as to apply to photosensitive material.

- e) The number of samples measured;
- f) The arithmetic mean of the individual measurements (accurate to 1 μm or 0.001 μm) shall be the average mechanically measured thickness of the test samples. If necessary, it shall also report the individual measured values;
- g) Report the number and frequency of measurement. If necessary, it shall also report the standard deviation.

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