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

GB/T 30316-2013

**Imaging materials -- Film and paper -- Determination of
dimensional change**

影像材料 胶片和相纸 尺寸变化的测定

(English Translation)

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Foreword

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

This standard uses the translation method identical with ISO 18903:2002 "Determination of image material film and paper size changes." the standard proposed by China Petroleum and Chemical Industry Association.

The photosensitive material standard by the National Standardization Technical Committee (SAC/TC102) centralized.

This standard was drafted. China Lucky Film Group Corporation, Lucky Film Co., Ltd.

Introduction

Performance of photographic film and paper or transient reversible dimensional change also show permanent dimensional change. This standard is intended to provide a sample processing and unified approach due to the atmospheric conditions change and wash size change processing and aging process of representation.

Temporary or reversible dimensional change is due to the equilibrium moisture content (determined by the relative humidity of the ambient atmosphere) changes or temperature changes caused by of. Permanent dimensional change occurs flush processing and aging results. Film permanent contraction speed is generally increased with increase in temperature Plus, but decreases over time. Speed of contraction at high or low relative humidity can be maximum, depending on the type of film. Some materials, especially which is a polyester base after photographic film may be exposed to high humidity at high expansion.

In recent years, growth in the photographic film in the high dimensional stability of the field used to emphasize the importance of accurate dimensions of performance measurement. E.g, as small as 0.01% dimensional change photomechanical reproductions may have practical significance. In the case of aerial mapping, uniform shrinkage and is not serious, because it can be easily corrected by enlarging magnification changes, but the difference in the two main directions are any shrinkage Source of error. Any local or non-uniform size and practical changes is important.

Any change in the size of film and paper performance depends not only on their composition and production methods, but also on their thermal and moisture content Experience. This requires accurate evaluation of the performance of some of the history of the sample control, while regulating and measuring procedures are very precise control. Film and paper size also has lag effect. This is like a polyester base film which is more stable photographic materials that may be relatively More important.

For additional information about the size of photographic film and paper and performance measurement methods available in the literature.

Determination of image material film and paper size changes

1 Scope

This standard specifies the method for determination of the photographic film by the following causes and change paper size.

- Change of equilibrium moisture content of the air relative humidity (RH) caused by the change (moisture expansion coefficient);
- Changes in temperature (thermal expansion coefficient);
- Washing process;
- Ageing.

This standard relates to the moisture content of the sample measured before and heat experiences, atmospheric conditions and data processing of measurement. It does not describe the measurement Various test techniques to use.

This standard applies to photographic film and paper Determination of dimensional change does not apply to the instant photo film dimensional change was measured.

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.

ISO/T R18931.2001 Imaging materials on humidity measurement and control of the recommended method
(Imagingmaterials-Recom-mendationsforhumiditymeasurementandcontrol)

3 Terms and Definitions

The following terms and definitions apply to this document.

Adjustment conditioning Sample was exposed to air at a given temperature and relative humidity until equilibrium is reached.

Uneven dimensional change differentialdimensionalchange the main difference between the two material directions (length and width) between the dimensional change.

NOTE: polyester base film often has the maximum and minimum dimensional change in the longitudinal and transverse directions beyond. This can be screwed in between a pair of orthogonal polarizers Turn and observe the uncoated film base is determined. When the change is consistent with the size of the optical axis direction corresponding to the maximum or minimum and a polarizing plate through the film base Light least.

Dimensional changes caused by processing a dimensionalchangeduetoprocessing
Changes caused by the permanent photographic processing size.

Note: It may be a conventional wet chemical washing process, steaming or thermal processing. At the same relative humidity and temperature measurement with the original conditions of use After adjusting the measurement, expressed as a percentage.

Dimensional changes due to aging caused by processing a plus
dimensionalchangeduetoprocessingplusageing Permanent dimensional change by the flushing process and processed materials caused by aging.

Note: Under the same conditions of temperature and relative humidity when measured using the original regulation was measured after washing and processing of film or photographic paper aging, expressed as a percentage.