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PEOPLE'S REPUBLIC OF CHINA**

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**Imaging materials - Reflection colour photographic prints -
Method for testing stability under low humidity conditions
(English Translation)**

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Foreword

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

Drafting.

This document is equivalent to ISO 18949:2019 "Image materials - Tests for the stability of color reflective photographic prints under low humidity conditions".

method".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Photosensitive Materials (SAC/TC102).

Introduction

This document includes test methods and procedures for the color fastness of reflective color photographs under low humidity conditions. This document only covers exposure to

low humidity.

For testing under relative humidity conditions, see ISO 18946 for testing under high relative humidity conditions. Low and high relative humidity testing are also discussed.

These are all closely related to the type of photograph, such as dye-based or pigment-based inkjet printed photographs on expandable porous media, and dye diffusion photographs.

And color photographs of silver halide, etc. (see references [11]~[17]).

In this experimental method, the effect of low moisture content in the sample due to low absolute humidity is tested.

When the temperature is constant and the test environment has reached equilibrium, the test environment is most easily determined by measuring relative humidity, rather than moisture content or absolute humidity.

The moisture content in the water. Therefore, this document will use the term "low relative humidity".

The methods and procedures described in this document can be used to test reflective color photographs produced by any color hardcopy technique. Certain types Color photographs exposed to low relative humidity environments exhibit altered image appearance. It has been observed that low relative humidity accelerates the spraying of certain types of inks.

The substrate of the ink-printed paper turned yellow, and an increase in this blue D_{min} (on a white substrate) has been observed in certain types of porous media.

The possible mechanism for this effect is the degradation of the fluorescent whitening agent (see reference [12]).

The low relative humidity in the indoor environment may be due to dry, cold air being drawn into the storage environment and heated to room temperature.

Low indoor relative humidity is common during this time of year, especially in winter in high-latitude regions where outdoor air dew point temperatures may be far below 0°C.

When this dry, cold air enters the room where the photos are stored and is heated to room temperature, the relative humidity in the indoor environment can be as low as 5% or even lower.

Low indoor relative humidity is also common when using air conditioning in hot, dry climates. Environments with low relative humidity typically occur in...

Desert environments or regions with long dry seasons. In addition to yellowing of the substrate, extremely low relative humidity can also lead to physical degradation of the image receiving layer.

This document also includes visual assessments and reports of physical degradation.

Image material reflects color photographs Test methods for stability under low humidity conditions

1 Scope

This document describes a test method for evaluating changes in the appearance of reflective color photographs caused by exposure to low relative humidity.

The observed changes were primarily related to yellowing of the substrate. Other observed physical damage associated with humidity or humidity cycles, such as curling and wrinkling, were also observed.

Wrinkles, cracks, or delamination are also within the scope of this test method.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

ISO 13655 Printing technology - Spectral measurement and colorimetric calculation of printed images Note. GB/T 19437-2025 Printing technology - Spectral measurement and colorimetric calculation of printed images (ISO 13655:2017, IDT) ISO 18913 Imaging materials - Permanence - Vocabulary ISO/T R18931 Recommendations for the Measurement and Control of Humidity in Imaging Materials ISO 18941 Test methods for ozone fading stability of color reflective photographs (Imaging materials - Colour)

3 Terms and Definitions

The terms and definitions defined in ISO 18913 and the following terms and definitions apply to this document.

ISO and IEC maintain terminology databases at the following addresses for standardized use.

The set point of the equilibrium condition is measured at the sensor location in the exposed equipment.

[Source. ASTM G113-2016, 4.1] 3.2 Under the balanced conditions of the laboratory accelerated environment device, the positive and negative deviations of the operation control setpoint are caused by the sensor settings.

Note: Operational fluctuations are an unavoidable result of device variations and do not include measurement uncertainty. Operational fluctuations only apply to controlling the position of the sensor and do not represent the overall device performance.

This indicates the consistency of the conditions in the entire test chamber.

[Source. ASTM G113-2016, 4.1]