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**Imaging materials — Reflection colour  
photographic prints — Method for  
testing stability under low humidity  
conditions**

*Matériaux pour l'image — Tirages photographiques en couleurs par  
réflexion — Méthode d'essai de la stabilité dans des conditions de  
faible humidité*

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## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 42, *Photography*.

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## Introduction

This document covers the methods and procedures for testing the low humidity fastness of reflection colour photographic prints. Low relative humidity exposure is covered; for high relative humidity testing see ISO 18946. Both low and high relative humidity testing is of particular relevance to dye- and pigment-based inkjet prints printed on swellable and porous media, dye diffusion process prints, and silver halide prints, see References [11] to [17].

In this test method the impact on the sample to be measured is the result of low moisture content in the sample, caused by low absolute humidity. When a temperature is fixed and equilibrium reached in the test environment, the measurement of the moisture content in the test environment is most easily done by specifying the relative humidity, not the humidity or absolute humidity. Therefore, the term “low relative humidity” will be used throughout this document.

The method and procedures described in this document can be used to test any colour hardcopy technology. Some types of colour photographic prints experience changes in image appearance when exposed to a low relative humidity environment. It has been observed that low relative humidities can accelerate the substrate yellowing of certain types of inkjet papers and this increase in the blue  $D_{\min}$  (substrate white) has been observed with certain types of porous media, resulting in a yellow appearance. A possible mechanism for this effect is degradation of optical brighteners, see Reference [12].

The low relative humidity indoor environment can arise from cold dry air being drawn into the storage environment and heated to room temperature. Indoor low relative humidities are common in colder climates and can be especially prevalent in higher latitude countries in winter where outside air dew point temperatures can be well below 0 °C. When this air is warmed to room temperature in the print storage environment, relative humidities as low as 5 % or lower can be encountered.

Indoor low relative humidities are also common in hot, dry climates in combination with air conditioning. Low relative humidity environment is often encountered in desert environments or areas with long dry seasons..

In addition to substrate yellowing, very low relative humidities have also been shown to cause physical degradation of image receiving layers. Visual assessment and reporting of physical degradation are included.

