

Imaging materials — Methods for the evaluation of the effectiveness of chemical conversion of silver images against oxidation

ICS 37.040.20

National foreword

This British Standard reproduces verbatim ISO 18915:2000 and implements it as the UK national standard. It supersedes BS ISO 12206:1995 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CPW/42, Photography, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii to v, a blank page, pages 1 to 16, an inside back cover and a back cover.

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**Imaging materials — Methods for the
evaluation of the effectiveness of chemical
conversion of silver images against
oxidation**

*Matériaux pour image — Méthodes d'évaluation de l'efficacité de la
conversion chimique des images argentiques contre l'oxydation*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 18915 was prepared by Technical Committee ISO/TC 42, *Photography*.

This first edition cancels and replaces ISO 12206:1995, of which it constitutes a minor revision.

This International Standard is one of a series of International Standards dealing with the physical properties and stability of imaging materials. To facilitate identification of these International Standards, they are assigned a number within the block from 18900 – 18999 (see annex A).

Annex D forms a normative part of this International Standard. Annexes A, B and C are for information only.

Introduction

Silver-gelatin photographs have been used extensively for recording and preserving information of lasting value in all fields of human activity. The long-term stability of these records has become of increasing concern in recent years, because image and support degradation have been found with accelerating frequency in photographic collections and archives.

ISO has published documents on various aspects of the stability and preservation of black-and-white silver-gelatin photographic materials. ISO 18901:—¹⁾ *Imaging materials — Processed silver-gelatin type black-and-white film — Specifications for stability*, provides test methods and criteria for the physical properties, permissible residual processing chemicals, and the image quality of films. ISO 18911:2000, *Imaging materials — Processed safety photographic films — Storage practices*, deals with the conditions required for maintaining and preserving the integrity of photographic films during storage. ISO 18902—²⁾, *Imaging materials — Processed photographic films, plates and papers — Filing enclosures and storage containers*, pertains to the materials used in contact with stored photographic materials.

If photographic film meets the material and processing specifications of ISO 18901 and is stored in accordance with ISO 18902 and ISO 18911, excellent stability will be obtained. Similarly, photographic paper prints should be stored in accordance with ISO 18920:2000, *Imaging materials — Processed photographic reflection prints — Storage practices*, and processed photographic plates in accordance with ISO 18918:2000, *Imaging materials — Processed photographic plates — Storage practices*.

However, in practical situations it is not always possible to control the storage conditions, particularly with respect to contaminants.

Atmospheric pollutants such as peroxides, sulfur dioxide, ozone and nitrogen dioxide are very detrimental to silver images (see [1] in the bibliography). Such environmental pollutants are of increasing concern in our industrial society. They can cause oxidation of the silver with consequent silver migration. This results in image fading, silver mirroring and redox blemishes (see [2] and [3] in the bibliography). Oxidizing agents that diffuse out of enclosure materials cause similar defects.

Recent studies have shown that silver images can be made resistant to oxidizing pollutants by chemically treating the silver to form silver sulfide (see [4] in the bibliography) or silver selenide (see [5] in the bibliography), or by substitution of the silver by gold (see [6] in the bibliography). Such treatments are recommended when it is not possible to ensure the absence of contaminants, or when the importance of the image justifies the added expense.

This International Standard is an adjunct to the processing requirements and describes methods for evaluating the effectiveness of various treatments which impart greater stability to silver images.

1) To be published. (Revision of ISO 10602:1995)

2) To be published. (Revision of ISO 10214:1991)

