

First edition  
2007-06-15

Corrected version  
2007-11-01

---

---

**Imaging materials — Processed imaging  
materials — Photographic activity test for  
enclosure materials**

*Matériaux pour l'image — Matériaux pour l'image traités — Essai  
d'activité photographique pour les matériaux de fermeture*



Reference number  
ISO 18916:2007(E)

© ISO 2007

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

**Contents**

Page

Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	2
4 Test conditions.....	2
4.1 Principle.....	2
4.2 Apparatus and materials.....	2
4.3 Incubation.....	3
4.4 Measurement.....	3
5 Image interaction test.....	3
5.1 Procedure.....	3
5.2 Calculation.....	5
5.3 Requirements.....	5
6 Stain test.....	5
6.1 Procedure.....	5
6.2 Calculation.....	6
6.3 Requirements.....	6
7 Mottle test.....	6
7.1 Procedure.....	6
7.2 Requirements.....	6
8 Specific procedures.....	6
8.1 General.....	6
8.2 Adhesives, inks, and paints.....	6
8.3 Labels and tape.....	7
8.4 Dye coupler reactivity test.....	9
8.5 Diazo images.....	10
9 Test report.....	10
Annex A (informative) Colloidal silver image interaction detector.....	12
Annex B (informative) Description of mottling.....	13
Bibliography.....	14

## 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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 18916 was prepared by Technical Committee ISO/TC 42, *Photography*.

This first edition cancels and replaces ISO 14523:1999, which has been technically revised.

This corrected version incorporates corrections to 4.2.2 and 4.2.3, which in this corrected version have been combined into 4.2.2 because there is only one stain detector required for testing, not two.

## Introduction

The use of photographic materials for the storage of records having a long-term value has necessitated the development of International Standards to specify important considerations in this field. The important elements affecting the useful life of imaging materials are as follows:

- a) humidity and temperature of the storage environment;
- b) hazards of fire, water, and light exposure;
- c) fungal growth;
- d) contact with certain chemicals in solid, liquid or gaseous form;
- e) physical damage;
- f) proper processing;
- g) enclosures and containers in contact with the imaging material.

International Standards have been published which specify the material requirements for silver-gelatin type film (ISO 18901), diazo film (ISO 18905), and vesicular film (ISO 18912). Specifications for proper processing are also included in these documents. ISO 18918, ISO 18911, and ISO 18920 specify the storage conditions for photographic plates, films, and paper prints, respectively.

In addition to the storage conditions, the filing materials used are extremely important. Processed photographic materials in archival collections require a high degree of individual packaging to protect them from atmospheric influences, dust, and handling damage, and also to keep them from contaminating each other. For this purpose, a wide variety of paper and plastic materials is commercially available, fabricated into albums, boxes, sleeves, envelopes, folders, mat boards, and interleaving tissues. However, it is absolutely essential that these storage enclosures not cause harm to the photographic image. For optimum stability, it is necessary that storage enclosures and their components meet the requirements in ISO 18902, which includes passing the criteria of the photographic activity test.

The photographic activity test described in this International Standard is a predictive test of interactions between the storage enclosure and the photographic image. It can also be used to evaluate possible photographic activity caused by components of enclosures such as adhesives, inks, paints, labels, and tape.

This document is a preview generated by EVS

# Imaging materials — Processed imaging materials — Photographic activity test for enclosure materials

## 1 Scope

This International Standard specifies the procedure for the photographic activity and dye coupler reactivity tests.

This International Standard is applicable to general photographic enclosure materials such as paper, tissue, cardboard, mat board and plastics. It is also applicable to components of photographic enclosure materials such as adhesives, inks, paints, labels, and tape.

This International Standard evaluates possible chemical interactions between enclosures with processed silver-gelatin, colour (dye-gelatin), inkjet prints made with dye-based and pigment-based inks, thermal dye diffusion transfer ("dye sub") prints, digitally printed dye-diffusion-transfer prints, liquid- and dry-toner xerographic prints, liquid-toner electrostatic prints, and diazo images after long-term storage. It does not pertain to harmful physical interactions such as blocking (sticking together), dye bleed, adhesive migration, or plasticizer exudation. It does not pertain to important criteria of enclosures such as their inherent chemical stability, physical integrity, and workmanship. Passing the photographic activity test (PAT) does not indicate that a material is archival. This term has no clear definition and is not used in this standard. Photo-safe, storage enclosures and their components are covered in ISO 18902, which includes passing the criteria of the photographic activity test.

If a particular brand of commercially made enclosure materials is found to be safe for long-term storage purposes, there is no assurance that subsequent batches will contain the same ingredients of the same purity, chemical inertness, concentrations, or sound and sturdy construction. For this reason, materials are tested annually or upon each formulation or supplier change. For materials which are manufactured in a variety of colours, such as papers and inks, each colour is evaluated and reported separately.

For enclosures intended for use with any of the above imaging processes, only the black-and-white PAT described in Clauses 4 to 7 are applicable. The dye coupler reactivity test is optional as the results are valid only for the specific colour print product being investigated. Different colour print products can have different staining sensitivities.

For enclosures intended for use with diazo images, only the diazo PAT described in 8.5 is applicable.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5-2:2001, *Photography — Density measurements — Part 2: Geometric conditions for transmission density*

ISO 5-3:1995, *Photography — Density measurements — Part 3: Spectral conditions*

ISO 5-4:1995, *Photography — Density measurements — Part 4: Geometric conditions for reflection density*