


ANSI/ISO 8225-1995,  
ANSI/NAPM IT9.5-1996

# American National Standard

*for Imaging Materials –  
Ammonia-Processed  
Diazo Photographic Film –  
Specifications for Stability*

 **ANSI** American National Standards Institute  
11 West 42nd Street  
New York, New York  
10036

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**ANSI/ISO 8225-1995,  
ANSI/NAPM IT9.5-1996**  
Revision and redesignation of  
ANSI IT9.5-1992

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Secretariat

**National Association of Photographic Manufacturers, Inc.**

Approved February 16, 1996

**American National Standards Institute, Inc.**

## American National Standard

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**Foreword** (This foreword is not part of American National Standard ANSI/ISO 8225-1995, ANSI/NAPM IT9.5-1996. The text of this standard is identical to ISO 8225: 1995 and the following five paragraphs are the original foreword as it appeared in that document.)

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.

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.

International Standard ISO 8225 was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 8225:1987), which has been technically revised.

Annex A forms an integral part of this International Standard. Annexes B, C, D and E are for information only.

Suggestions for improvement of this standard will be welcome. They should be sent to the National Association of Photographic Manufacturers, Inc., 550 Mamaroneck Avenue, Suite 307, Harrison, NY 10528-1612.

This standard was processed and approved for submittal to ANSI by NAPM Technical Committee IT9 on the Physical Properties and Permanence of Imaging Materials. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the IT9 Committee had the following members:

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A. Tulsi Ram, Secretary

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## Introduction

Since 1930, great advances have been made in the use of photographic films for the preservation of records. The preservation of records on film by national, state and municipal governments, by banks, insurance companies, industry and other enterprises, has been stimulated by recognition of the resultant economies in storage space, organization, accessibility and ease of reproduction. The safe-keeping of pictorial film records having legal, scientific, industrial, medical, historical, military or other values has also become increasingly important.

The use of film for records having long-term values necessitated the development of International Standards to specify the characteristics of film suitable for this purpose. ISO 10602 specifies the requirements for silver-gelatin films which are suitable for storage. This International Standard (for diazo film) and ISO 9718 (for vesicular film) give the requirements for photographic duplicate films suitable for storage.

The term "archival film" has been discontinued and the new concept of "life expectancy" is introduced. Film life is classified by the LE or life expectancy rating as defined in this International Standard. For example, LE-100 represents film with a life expectancy of 100 years when stored under extended-term storage conditions specified in ISO 5466.

Criteria for properties of LE-10 and LE-100 diazo films are based upon the dark-ageing stability of diazo images. Different dark incubation tests are specified for LE-10 and LE-100 films. All other property and processing requirements for medium and long-term diazo films are identical.

It is recognized that diazo images may show density changes after exposure to light. However, this International Standard covers only films used as storage copies, not as work copies (as defined in annex C). The light-fading requirements specified in this International Standard ensure satisfactory behaviour for storage copies which are not intended to be subjected to frequent light exposure.

In addition to the characterization of films with respect to their expected storage life, diazo films are also separated into two classes (A and B); these classes are dependent upon their intended use. Class A films are those which retain density in both the visual and actinic region (printing) after storage. Such films can be viewed directly or reprinted onto ultraviolet (UV)-sensitive materials. However, some diazo films are not intended to be reprinted onto UV-sensitive materials. Such films require only visual capabilities after storage and are designated as Class B films. Obviously, both Class A and Class B films can fall into the LE-10 and LE-100 categories. The requirements for Class A and Class B films are identical, with the exception of image-stability tests after dark-ageing and after light-fading.

Everyone concerned with the preservation of records on photographic film should realize that specifying the chemical and physical characteristics of the material does not, by itself, assure satisfactory behaviour. It is also



essential to provide the correct storage temperature and humidity, and protection from the hazards of fire, water, light and certain atmospheric pollutants. Conditions for the storage of record films are specified in ISO 5466 and ISO 10214.

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**1 Scope**

**1.1** This International Standard establishes specifications for the stability of polyester-base safety film which has an ammonia-processed diazo photographic image. It covers photographic film intended for LE-10 and LE-100 records.

**1.2** This International Standard applies to photographic film in which the image layer is a discrete layer attached to a transparent support.

**1.3** It applies to roll film and sheet film.

**1.4** This International Standard characterizes only the inherent keeping behaviour of the film. However, the suitability of a film record after extended storage depends on both the inherent ageing characteristics of the film and the original image quality. The latter is discussed in annex B.

**1.5** This International Standard applies only to diazo photographic film intended and used as LE-10 and LE-100 storage copies. Storage copies should be stored in accordance with ISO 5466 and ISO 10214. It does not apply to diazo film records intended and used as "work" or "use" copies (as discussed in annex C).

**2 Normative references**

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements

based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5-1:1984, *Photography — Density measurements — Part 1: Terms, symbols and notations.*

ISO 5-2:1991, *Photography — Density measurements — Part 2: Geometric conditions for transmission density.*

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

ISO 527-3:1995, *Plastics — Determination of tensile properties — Part 3: Test conditions for films and sheets.*

ISO 543:1990, *Photography — Photographic films — Specifications for safety film.*

ISO 5466:1992, *Photography — Processed safety photographic films — Storage practices.*

ISO 6077:1993, *Photography — Photographic films and papers — Wedge test for brittleness.*

ISO 9718:1995, *Photography — Processed vesicular photographic film — Specifications for stability.*

ISO 10214:1991, *Photography — Processed photographic materials — Filing enclosures for storage.*

ISO 10602:1995, *Photography — Processed silver-gelatin type black-and-white film — Specifications for stability.*