

International Standard



4331

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Photography — Processed photographic black-and-white film for archival records — Silver-gelatin type on cellulose ester base — Specifications

Photographie — Film photographique noir et blanc traité pour la conservation d'archives — Type gélatino-argentique sur support en ester de cellulose — Spécifications

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0 Introduction

Since 1930, great advances have been made in the use of photographic films for the preservation of records. The preservation of film records by governments, banks, insurance companies, industry and other enterprises has been stimulated by a recognition of the economies in storage space, organization, accessibility, and ease of reproduction that result from the use of film records.

During the early development period of the art of copying documents, 35 mm nitrate motion-picture film was sometimes used. This material is highly flammable and deteriorates rapidly under unfavourable storage conditions. Nitrate film is not acceptable for any archival record use. The manufacture of nitrate film declined after World War II and was discontinued in most countries in the 1950s.

For many years, the only films suitable for archival storage were made on some type of cellulose ester base. Various synthetic polymer film bases have since appeared. The useful life of cellulose ester type material extends back only to about 1908. Experience with the film during that time and the results of accelerated ageing tests and other studies predict, however, that the material is capable of enduring as long as rag paper under normal storage conditions.

This International Standard is intended to eliminate possible hazards to permanence attributable to the chemical or physical characteristics of the processed film. Some of these characteristics are the responsibility of the film manufacturer, some of the film processor, and some are influenced by both. However, specifying the chemical and physical characteristics of the material does not, by itself, ensure satisfactory archival behaviour. It is essential to provide proper storage temperature and humidity and protection from the hazards of fire, water, fungus and certain atmospheric pollutants. Archival record films shall be stored under the conditions prescribed in ISO 5466.

1 Scope and field of application

1.1 This International Standard establishes the specifications for safety cellulose ester type films having silver-gelatin type

emulsions processed to produce a stable black-and-white photographic image.

1.2 It is applicable to silver images produced by negative and full reversal processing¹⁾, positive working films and gold toning. It does not, however, apply to other silver images that have been chemically altered by treatments such as toning, reduction, or intensification.

This International Standard does not apply to colour films, films fixed in other than thiosulfate solutions^[3], and silver images produced by dry or thermal processing, diffusion transfer and halide reversal processing.

1.3 This International Standard is applicable to microfilm, motion-picture film, roll film and sheet film intended for archival record films.

1.4 Lacquers have been applied to processed film for fungus and scratch protection without any known detrimental effect on permanence. However, because of the wide variety of possible materials, lacquered film is not within the scope of this International Standard.

2 References

ISO 417, *Photography — Determination of thiosulphate and other residual chemicals in processed photographic films, plates and papers — Methylene blue photometric method and silver sulphide densitometric method.*

ISO 543, *Cinematography — Motion-picture safety film — Definition, testing and marking.*

ISO 5466, *Photography — Processed safety photographic film — Storage practices.*

ISO 5626, *Paper — Determination of folding endurance.*

ISO 7830, *Photography — Safety photographic films other than motion-picture films — Material specifications.*

1) Full reversal processing includes a final fix and wash after the second development step.