INTERNATIONAL STANDARD

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Imaging materials — Magnetic tape — Care and handling practices for extended usage

Matériaux pour l'image — Bande magnétique — Précautions et pratiques de manutention pour usage prolongé

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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 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 18933 was prepared by Technical Committee ISO/TC 42, *Photography*.

Introduction

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 to 18999 (see Annex A).

Magnetic recording tape has served as a major means of processing, distributing and preserving information, including video, audio, computer and other data since the 1930s. Unlike earlier data-recording media such as paper and photographic material, the information recorded on magnetic tape is not directly human-readable and requires a machine interface and interpretation. In addition, the machine/medium interface must occur within precise conditions in order for the machine interpretation to be accurate. Therefore, the physical integrity of magnetic tape necessary to provide a proper interface with the interpreting machinery is critical. Correct care and handling is essential to preserve the needed physical integrity of magnetic tape both for short-term usage and long-term archiving.

Magnetic tape has proven itself an easy-to-use and versatile medium. Yet despite the substantial resources put into creating recordings and the historical, intellectual and financial assets they represent, tapes often are not treated as valuable objects. Many important and unique recordings are lost due to inadequate care and handling of the tape. This poses problems for users who wish to preserve the content. Among these problems are the following.

a) Improper handling can damage magnetic tapes and compromise the future ability to retrieve content.

b) Due to the enormous volume of existing tapes, the impracticality and cost of making copies of each and every one frequently results in large numbers of unique records being subjected to excessive use and wear without any back-up or protection. Repeated use of magnetic tape can cause wear or physical damage that shortens its effective life.

c) Some magnetic tapes are known to have a finite shelf life and will eventually decay. Recorded documents on these tapes must be copied to new media before decay precludes access.

d) The ability to play back a tape in the future depends on the existence of functional playback equipment. As new tape formats become popular, equipment manufacturers discontinue the production and support of older, superseded equipment. Eventually, usable equipment to play older, obsolete magnetic tape formats becomes impossible to find. Before this occurs, a migration plan should be in place.

Like all media, magnetic tape is subject to both damage and decay. Consequently, its effective life can increase or decrease significantly depending on the conditions under which it is stored and handled. This International Standard contains recommendations for the care and handling of magnetic tape. Recommendations for the preservation and storage of polyester-base magnetic tape appear in ISO 18923. Following these recommendations promotes the physical integrity of the media and increases the effective life of magnetic tape.

Imaging materials — Magnetic tape — Care and handling practices for extended usage

1 Scope

This International Standard concerns the care and handling of magnetic recording tape during use. It addresses the issues of physical integrity of the medium necessary to preserve access to the data (information) recorded on the tape. This International Standard recommends handling procedures to maximize the effective life of magnetic tape. Faulty handling, packing and transporting techniques and methods often cause damage to magnetic tape and the content recorded thereon. Extending the longevity of magnetic tape requires the identification of appropriate handling methods and well-developed training programmes.

While some of the recommendations in this International Standard, such as staff training, apply specifically to large-scale or archival usage, the basics of all recommendations in this document can and should be applied in all circumstances where the desired result is long-term usage of the medium whether archival, commercial or personal.

This International Standard addresses the following subjects:

— handling techniques, including common hazards and methods to mitigate those hazards;

— handling environments, including pollutants, temperature and humidity, lighting, magnetic fields and robotics;

— use of tape, including inspection, playback, mounting/loading and removing, winding speed, tension and robotic systems;

— cleaning and maintenance techniques, including contaminants, cleaning methods and frequency;

— transportation, both in-house and shipping outside the storage facility;

— disasters, including water, fire, construction and post-disaster procedures;

— staff training, including schedule for training and contents of the training programme;

— archival issues.

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 14644-1:1999, *Cleanrooms and associated controlled environments — Part 1: Classification of air cleanliness*

ISO 14644-2:2000, *Cleanrooms and associated controlled environments — Part 2: Specifications for testing and monitoring to prove continued compliance with ISO 14644-1*

ISO 18923:2000, *Imaging materials — Polyester-base magnetic tape — Storage practices*

AES22:1997, *AES recommended practice for audio preservation and restoration — Storage and handling — Storage of polyester-base magnetic tape*