

ICS 37.040.20  
CCS G 80



**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 9582-2008**

Replacing GB/T 9582-1998

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**Photography -- Industrial radiographic films -- Determination of  
ISO speed, ISO average gradient and ISO gradients G2 and G4  
when exposed to X-and Gamma-radiation**  
**(English Translation)**

**Issued on: September 24, 2008**

**Implemented on: May 1, 2009**

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**Issued by: Standardization Administration of China**

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## Foreword

This standard is equivalent to international standards ISO 7004:2002 "industrial-ray film --- ISO speed, ISO average gradient and ISO oblique G2 and G4 rate determination (by X and gamma-ray exposure) "(in English), and the preparation of technical content and format of ISO 7004:2002 is consistent, Simply prepared pursuant to the requirements of national standards, made editorial changes, delete the ISO standard preface to our national standards Preface.

The revised standard and replaces GB/T 9582-1998 "Industrial radiographic film ISO sensitivity and measurement of the average slope (with X and gamma shot Ray exposure).  
" Compared to this standard in content GB/T 9582-1998, the main changes are as follows.

- Revised foreword;
- "Terms and Definitions" section has been expanded;
- 5.3.3 This standard adds 5.3.3.1 General (Excerpts Chapter 5, Chapter 5, 1998);
- The standard modulation 5.3.5 adds "Exposure 12 data points obtained from the sheet radical fog density from 1.0 to 5.0 in the series density";
- The standard 5.5 density measurements to remove the "Use small holes measuring not less than 7mm<sup>2</sup> area";
- Original standard 5.6.1 Figure 1 is adjusted to this standard 6.1.1;
- The original standard 6.1 "ISO sensitivity" to "speed computing";
- The original Standard 6.1.1 Standard "ISO sensitivity scale" to "General";
- 6.1.2 This standard original standard "products, the ISO sensitivity" to "ISO sensitivity";
- This standard adds "6.1.3 System type ISO sensitivity";
- The standard 6.2 original standard "ISO average gradient" to "average slope calculation";
- The original Standard 6.2.1 Standard "ISO average gradient scale" to "General";
- The original Standard 6.2.2 Standard "ISO average gradient products" to "ISO average gradient";
- This standard adds "6.2.3 ISO average gradient system type";
- The original standard 6.3 "accuracy" to "point slope determination";
- This standard adds "point 6.3.1 slope G2 and G4 point determination" and "6.3.2 ISO slope G2 and G4";
- The original standard 7.3 "General" to "ISO slope G2 and G4";

--- This is a standard 7.4 "General";

--- The Standard Appendix A of the original Standard Appendix E, Appendix B of the original Standard Appendix D, Appendix C of the original Standard Appendix A, Appendix D of the original Standard Appendix C, Appendix E for newly added Appendix Appendix F of the original Standard Appendix B;

--- This standard adds references.

The Standard Appendix A, Appendix B, Appendix C, Appendix D, Appendix E, Appendix F for the informative appendix.

The standard proposed by China Petroleum and Chemical Industry Association.

The photosensitive material standard by the National Standardization Technical Committee (SAC/TC102) centralized.

This standard was drafted. China Lucky Film Group Corporation.

## Introduction

This standard specifies the determination of film systems for industrial radiography ISO speed, ISO average gradient and ISO slope with X and gamma-ray exposure the method of G2 and G4. Many countries already have national standards for many years on the subject, and this may provide a numerical standard gauge those different values given program get. Since the photographic properties of the film depends on the spectral energy distribution, so the standard specifies the determination Four representative ray source when the photographic performance. In order to reduce the differences between national standards, the X-ray tube and an X-ray generator Given mandatory minimum requirements and, in terms of (5.3.3) clearly specified ray quality. This standard provides the film with a combination of a metal screen thickness of.

Photographic film Results also depend on the chemical process development time, this standard does not require the processing method, therefore, to provide a film ISO ISO sensitivity or slope value when it is necessary to use the provisions of the ray quality, processed to have a predetermined manner, which facilitates film and film Processing contrast between the different system components.

GB/T 9582-2008/ISO 7004:2002 Photographic industry ray film ISO speed, ISO and ISO average gradient of slope G2 and G4 Determination (X-ray exposure and gamma)

## 1 Scope

This standard specifies the shape of the curve of the photosensitive direct use of X-ray exposure of industrial and gamma-ray film and film processing body, ISO photosensitive Degree, ISO average gradient and ISO slope determination G2 and G4's.

This standard does not require the determination of the industrial-ray film with a fluorescent intensifying screen.

**Note:** The energy unit of measurement is given in Appendix A.

## 2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 11500 photographic density measurements - Part 2. Density perspective geometry (GB/T 11500-2008, ISO 5-2.

2001, IDT)

GB/T 11501 photographic density measurements - Part 3. Spectral conditions (GB/T 11501-2008, ISO 5-3:1995, IDT) ISO 4037-1 calibrated radiation dosimeters and the radiation intensity as a light meter and measured parameter sensitivity of X-rays and gamma reference ISO 5579 Non-destructive testing --- according to the basic principles of X and gamma radiographic testing of metallic materials

## 3 Terms and Definitions

The following terms and definitions apply to this standard.

Transparent plastic sheets coated with single or double layer of photosensitive film.

Ray film, film processing and lead foil and film cartridge used in the composition of the system.

All film systems using the same methods and specified by the manufacturer, regardless of size.

**Note:** according to the film model and process models and lead foil and cartridge models used special provisions of the system model.

X-ray and gamma-ray exposure in direct contact with the metal screen-ray film.

**Note:** This standard, the screen is a lead foil.

Ionizing radiation characteristics, in accordance with the determination of the spectral energy distribution.

GB/T 9582-2008/ISO 7004:2002