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

GB/T 9861-2008

Replacing GB/T 9861-1988

**Imaging materials -- Photographic film and papers -- Method for
determining the resistance of photographic emulsions to wet
abrasion**

成像材料 照相胶片和相纸 照相乳剂湿抗划伤 measurement 方法

(English Translation)

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Foreword

This standard is identical with ISO 18914:2002 "Imaging materials --- photographic film and paper photographic emulsions wet scratch resistance measurement side Law "(in English).

This standard is equivalent to translate ISO 18914:2002.

For ease of use, this standard does the following editorial changes.

- a) "this International Standard" be replaced by "this standard";
- b) use a decimal point instead of a decimal comma " , " . " , " ;
- c) Delete ISO 18914:2002 Foreword rewrite of the standard "foreword"; the introduction of international standards as a direct translation of the Standard Introduction.

The revised standard and replaces GB/T 9861-1988 "Determination of scratch resistance force during the photographic film processing." this standard compared with GB/T 9861-1988, the main changes are as follows.

--- Standard format prepared according to GB/T 1.1-2000 be requested;

--- Increasing the foreword and introduction;

--- Added Appendix A. For ease of use, an increase in "Appendix A measurement unit conversion";

--- GB/T 9861-1988 "Determination of scratch resistance force photographic film developing process," although the international standard test methods and a Cause, but there is a big difference with the international standards in technical content and editorial narrative, since this standard is identical translation of international standards, Therefore, this Standard and National Standard GB/T 9861-1988 "Determination of photographic film scratch resistance force during the wash" main Following a big difference.

- In GB/T 9861-1988 is defined scratch force, that is, "the measured surface of the coating is scratched, needles applied Pressure "in Newtons (N), and scratch resistance of this standard is based on the emulsion layer is scratched, the weight load on the stylus the amount of the unit is g, the two are not different in nature, but a different choice of units;
- does not correspond to the text editor, GB/T 9861-1988 is to absorb the international standards of technical content, self-written, Logically from the text, compared with the present standard standardization, and GB/T 9861-1988 compared with the practical;
- GB/T 9861-1988 provides reproducible method requires measuring the relative standard deviation of not more than 15%, while this standard only it provides a significant level of evaluation values;
- There are differences in the standard name. Standard Edition of 1988 by the name be changed to "the process of photographic film scratch assay force flush" "Imaging material photographic film and paper photographic emulsions wet scratch resistance measurement method." GB/T 9861-1988 outstanding Anti-scratch "force", but said the present standard scratch resistance. GB/T 9861-1988 that "washing process", and this standard Limited only in "wet" state.

Appendix A of this standard is a normative 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

Fine latex emulsion and wash any stationary processing machinery parts rub against each other photographic material, it may result in the processing plan hurt. Flushing film or paper tray by hand, due to the fine layer may be too soft to foreign particles, all kinds of sharp corners or fingernail scratch emergence Scratch.

Photographic emulsions in the wet state than dry state more easily scratched, wet emulsion and fine rubber backing layer than the support material is easier to scratch. The standard Accurate testing methods can only be applied to such a wet emulsion layer and a layer of wet fine. Dry scratch resistance can be found in Reference [1].

Fine photographic emulsion layer and physical changes occur over time, these coatings wet scratch resistance when they depend inherent in the manufacture of immanence can. Different before processing the dry state, e.g., storage temperature and moisture content also affected.

Process depends not only on the case of scratch resistance of the inherent characteristics

of the emulsion, the type of machining fluid, the temperature and soaking time it also Movies Ring (see reference [2] for details). These factors must be carefully controlled measurement emulsion scratch.

Wet scratch resistance test results to determine the importance of the material in accordance with various end uses. For example, some of the film was observed in a wet state, While the general observation or film and photographs for use in dry before him. Some of the material after drying inspection scratched impact on the more wet state small. You must select the most appropriate evaluation methods, and clearly stated in the results.

Standard test methods provide a good means to compare different emulsions aging degree, the type of processing liquid, the processing temperature and soaking time the results of post-processing effects as well as other aspects. But whether it is continuous, trough or disc processing, equipment and technology related to many factors, They can not be considered in the test program. Analysis of the scratch resistance of a processing system, only use the processing system to operate.

When this test method is also applicable to the determination of the fine latex layer in the normal or accelerated aging physical robustness, used for this purpose, soaked in distilled Determination of wet scratch distilled water.

GB/T 9861-2008/ISO 18914:2002 Imaging materials photographic film and paper
Photographic emulsions wet scratch resistance measurement method

1 Scope

This standard specifies laboratory test methods for photographic emulsions or fine rubber backing layer scratch resistance in the washing process.

This method is applicable to the determination of the processing performance of the liquid changes, fine layer characteristics, process fluid temperature and processing times and other factors as well as combinations of these factors After together on anti-scratch ability of fine layer wet.

The method is also applicable to the determination of the photographic emulsion firmness in the wet state, but not for the evaluation of the support material scratch resistance.

2.1 Parts

Equipment should have the following components.

--- Samples can be soaked in distilled water or working fluid sample cell. Sample cell can move smoothly in the horizontal plane and did not at least 30mm There is lateral displacement. Sample cell can be manually driven, but also motor.

--- Spherical sapphire or diamond mounted on a cantilever end of the stylus. Rely on the

boom, can be reduced to a stylus in contact with the sample, when the sample tank when in stylus movement on the surface of the sample to draw a straight line. Stylus should be placed perpendicular to the contact with the sample solution tank, according to the Emulsion film base radius is available on the stylus of 0.38mm, the base paper for photographic emulsion on the available plans needle header the stylus radius 0.20mm. Stylus cantilever should be balanced in order to reverse the decline in the boom when the stylus is not placed on the emulsion surface stylus There are loads.

NOTE: The ISO 18922 is described, dry scratch resistance test equipment after modification, it can also be used for this test.

2.2.1 Summary

Equipment can be manufactured in two ways.

2.2.2 Instrument constant load

Instrument constant load, the weight placed directly onto a pallet. Which are designed to ensure that the added weight of the center of gravity is located directly on the stylus, added Weight can range from 1g ~ 210g. The pivot arm axis of rotation is located on the flower button with roller screw hinge or adopt other measures to make the stylus can Laterally positioned, so that we can draw a number of parallel lines on the same sample. It can also be used with a transverse orientation of the sample holder and stylus arm with only Simple shaft.

2.2.3 Variable load equipment

Variable load equipment may also be used (for example as shown in Figure 1). When the boom-down, hold back on the slider below the carriage. When the carriage with the sample is moved from the cantilever axially outer groove, the slider movement along with it, so that we can draw a sample groove moves with the carriage needle endpoint does not load Off increase. Carriage full mobile 180mm, weight from 0g to 70g. Test equipment for the expansion of the range, can be directly above the stylus Screwed directly on the screw 50g, 100g and 150g of weight.

Instrument constant load and variable load equipment is best to use stainless steel or other non-rusting materials, immersed in water for easy cleaning.

Can put a piece of glass at the bottom of the sample well, the sample to provide a smooth surface.

GB/T 9861-2008/ISO 18914:2002