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

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Plastics - Determination of image clarity

塑料 成像清晰度的测定

(English Translation)

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Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative References	
3 Terms and Definitions	
4 Principle	
5 Equipment	
5.1 Light Source and Spectral Response	
5.2 Slit	
5.3 Photomask	
5.4 Optical Conditions (Reflection Method)	
5.5 Standard Black Glass	
5.6 Optical Component Structure	
6 Sample	
7 Experimental Procedure	
7.1 Zeroing	
7.2 Sensitivity Adjustment	
7.3 Measurement of the Specimen	
8 Calculate	
9 Test Report	
Appendix A (Informative) Measurement Example	
A.1 Selection of Moving Grating	
A.2 Example of sharpness measurement (transmission method)	
A.3 Example of sharpness measurement (reflection method)	

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is modified to adopt ISO 17221:2014 "Determination of sharpness of plastics (sharpness of reflected or transmitted images)".

The technical differences between this document and ISO 17221:2014, and the reasons therefor, are as follows.

---ISO 472 (see Chapter 3) has been replaced with the normatively referenced GB/T 2035 to adapt to my country's technical conditions and increase operability.

Actual nature;

---ISO 2813 has been replaced with the normatively referenced GB/T 9754 (see 5.5) to adapt to my country's technical conditions and increase operability.

Acting.

The following editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Determination of Imaging Sharpness in Plastics";

---Added a note to the specimen section (see Chapter 6) stating "Common specimen types are referenced in Appendix A";

---Informative Annex B, "Notes on precision," of ISO 17221:2014 has been deleted.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Plastics Standardization (SAC/TC15).

Introduction

The clarity of plastics is affected by surface sharpness, irregularity, and haze; gloss meters and haze meters cannot accurately represent this concept.

Image sharpness is different from gloss and haze and should not be confused with them. Therefore, it is necessary to establish a standardized method for measuring the sharpness of plastic images. The reflectance method is used for measurement.

Determining the image sharpness of plastic is evaluated by measuring the sharpness of the image reflected from the surface at a specified incident angle; transmission method measurement, on the other hand...

The sharpness of the image transmitted through the plastic sample is measured for evaluation.

This document aims to specify the quantitative measurement of the clarity of plastic surfaces using reflection and transmission methods.

Measurement of plastic imaging sharpness

1 Scope

This document describes an instrumental method for determining the image sharpness of plastic specimens by measuring the reflected or transmitted images of the specimen surface.

method.

This document applies only to the determination of sharpness of planar materials.

Note: Different sample preparation methods using the same material may yield different image sharpness values.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 2035 Plastics Terminology (GB/T 2035-2024, ISO 472:2013, NEQ) GB/T 9754 Determination of gloss at 20°, 60° and 85° for paints and varnishes (GB/T 9754-2025, ISO 2813:2014, IDT) ISO 11664-1 Colorimetry - Part 1: CIE standard colorimetric observer

3 Terms and Definitions

The terms and definitions defined in GB/T 2035 and the following terms and definitions apply to this document.

Image clarity

The clarity of the image formed by reflection or transmission from the sample.

Note: Expressed as a percentage (%).

4 Principles

During resolution measurement, light emitted from the light source enters the entrance slit, is converged into parallel rays by the collimating lens, and then shines onto the sample.

The sample surface reflects or transmits light to form an image, which is then focused onto a moving grating by a collimating lens. Light rays passing through the moving grating are then received by a photodetector.

The received synthetic signal is processed to obtain the sharpness value of the sample.

5.1 Light Source and Spectral Response

The light source and photometer should be used in conjunction with a filter to provide an output corresponding to the standard luminous efficacy $V(\lambda)$ for visual perception. This luminous efficacy...

It is the same as the color matching function $y(\lambda)$ specified in ISO 11664-1 obtained under CIE standard illuminant A as specified in ISO 11664-2.

The output of the photodetector should be proportional to the incident flux, and its accuracy should be controlled within 1% within the measured range. Throughout the measurement...