

ICS 71.040.50
CCS G 04



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

GB/T 32055-2015

**Microbeam analysis -- Electron probe microanalysis -- Methods
for elemental-mapping analysis using wavelength dispersive
spectroscopy**

微束分析 电子探针显微分析 波谱法元素面分析

(English Translation)

Issued on: October 9, 2015

Implemented on: September 1, 2016

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine**

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Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard's translation equivalently adopts ISO 11938.2012 Microbeam Analysis - Electron Probe Microanalysis - Methods for Elemental-Mapping Analysis Using Wavelength Dispersive Spectroscopy (English Edition).

The Chinese documents that have corresponding relation to the international documents normatively quoted in this Standard are as follows.

- GB/T 6379.6-2009 Accuracy (Trueness and Precision) of Measurement Methods and Results - Part 6. Use in Practice of Accuracy Values (ISO 5725-6.1944, IDT)
- GB/T 20725-2006 Electron Probe Microanalysis Guidelines for Qualitative Point Analysis by Wavelength Dispersive X-Ray Spectrometry (ISO 17470.2004, IDT)
- GB/T 21636-2008 Microbeam Analysis - Electron Probe Micro Analysis (EPMA) - Vocabulary (ISO 23833.2006, IDT)
- GB/T 28634-2012 Microbeam Analysis - Electron Probe Microanalysis - Quantitative Point Analysis for Bulk Specimen Using Wavelength Dispersive X-Ray Spectroscopy (ISO 22489.2006, IDT)
- GB/T 30705-2014 Microbeam Analysis - Electron Probe Microanalysis -

Guidelines for the Determination of Experimental Parameters for Wavelength Dispersive Spectroscopy (ISO 14594.2003, IDT)

This Standard was proposed by and shall be under the jurisdiction of National Technical Committee for Standardization of Microbeam Analysis (SAC/TC 38). Drafting organizations of this Standard. Institute of mineral resources, Chinese Academy of Geological Sciences; and Shanghai Institute of Ceramics, Chinese Academy of Sciences.

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Microbeam Analysis - Electron Probe Microanalysis -
Methods for Elemental-Mapping Analysis Using
Wavelength Dispersive Spectroscopy

1 Scope

This Standard provides procedures for electron microprobe elemental mapping analysis using wavelength dispersive spectrometry. The choice between mapping with the electron beam moving digitally across the specimen (electron beam mapping) and mapping with stage movement only (large-area mapping) is assessed. It describes five types of data processing. the raw X-ray intensity data method, the k-value method, the calibration method, the correlation method and the matrix correction method.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

GB/T 15247-2008 Microbeam Analysis - Electron Probe Microanalysis - Guidelines for Determining the Carbon Content of Steels Using Calibration Curve Method (ISO 16592.2006, IDT)

GB/T 27025-2008 General Requirements for the Competence of Testing and

Calibration Laboratories (ISO/IEC 17025.2005, IDT)

ISO 5725-6 Accuracy (Trueness and Precision) of Measurement Methods and
Results Part 6. Use in Practice of Accuracy Values

ISO 14594 Microbeam Analysis Electron Probe Microanalysis - Guidelines for the
Determination of Experimental Parameters for Wavelength Dispersive
Spectroscopy

ISO 17470 Microbeam Analysis - Electron Probe Microanalysis - Guidelines for
Qualitative Point Analysts by Wavelength Dispersive X-Ray Spectrometry

ISO 22489 Microbeam Analysis - Electron Probe Microanalysis - Quantitative Point
Analysis for Bulk Specimens Using Wavelength Dispersive X Ray Spectroscopy

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