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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 4930-2021

Microbeam analysis - Electron probe microanalysis - Guidelines for the specification of certified reference materials(CRMs)

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Foreword

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

Drafting.

This document replaces GB/T 4930-2008 "Guidelines for the Technical Conditions of Microbeam Analysis Electron Probe Analysis Standard Samples", and

Compared with GB/T 4930-2008, in addition to editorial changes, the main technical changes are as follows.

a) "The amount of research material must be sufficient to prepare about.200 sets of standard samples" is changed to "The amount of research material should be sufficient for the standard sample

Preparation" (see 4.1, 4.1 of the.2008 edition);

b) Replace the note with the text. Delete the first paragraph "Based on these factors, there is no detailed regulation on the sampling sample size here, so that

Analysts flexibly design testing procedures" (see 5.2, 5.2 of the.2008 edition);

c) Added "(or a suitable and well-characterized composite sample, in which overlap will not cause problems)" (see 5.3);

d) "For an energy spectrometer, the dead time should be set at 30%" to "For an energy spectrometer, the dead time should be about 30%" (see

5.3, 5.3 of the.2008 edition);

e) "Background" is changed to "Background" (see 5.5, 5.5 of the.2008 edition);

f) In order to correct printing errors, the formula +/-2

nsnpneC

Ss

ns-1

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? Change to +/-2 1nsnpneC?2 Ssns-1 B

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Change the formula +/-3

nsnpneC

Ss

ns-1

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? Change to +/-3 1nsnpneC?2 Ssns-1 B

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(See 5.6,.2008

5.6 of the year edition);

g) "Note" is changed to "text" (see Appendix A, Appendix A of the.2008 edition).

The translation method used in this document is equivalent to ISO 14595.2014 "Technical Conditions for Standard Samples of Microbeam Analysis Electron Probe Microanalysis"

Guidelines".

This document was proposed and managed by the National Standardization Technical Committee for Microbeam Analysis (SAC/TC38).

Drafting organizations of this document. Baowu Special Metallurgy Co., Ltd., Shanghai Power Equipment Complete Design and Research Institute Co., Ltd., Baoshan Iron and Steel

Co., Ltd., Industrial Analysis and Testing Center of Guangdong Academy of Sciences.

Introduction

Electron probe microanalysis (EPMA) is a quantitative analysis method carried out by the comparative method. It has been widely used in the world and has a certificate.

Quasi-samples (CRMs) have a critical impact on the accuracy of quantitative analysis.

Therefore, the revision of this document is conducive to the international exchange of electron probe microanalysis and the compatibility of analysis data.

This document specifies how to evaluate and select reference materials (RMs)1), how to evaluate the inhomogeneity and stability of standard samples, and gives

The chemical composition determination method for the production of EPMA standard samples.

The first such standard in the world is GB 4930-1985 "General Technical Conditions for Electron Probe Analysis Standard Samples", which is composed of

Drafted by Liu Yongkang, Lin Zhuoran and Zhang Yi, approved by the National Standardization Technical Committee for Electron Probe Analysis Standard Samples (National Standardization Technology for Microbeam Analysis)

The predecessor of the Technical Committee) reviewed and passed the report to the National Bureau of Standards (CBS) (the CSBTS of the National Bureau of Technical Supervision and the China National Standardization Committee)

The predecessor of SAC) was approved for release and implemented in 1985.This standard was revised for the first time and formed GB/T 4930-1993.The drafters Liu Yongkang,

Zhang Yi, Lin Zhuoran, Suo Zhicheng, reviewed by the National Microbeam Analysis Standardization Technical Committee, approved by the State Technical Supervision Bureau, August.1993

Promulgated on the 30th and implemented on July 1,.1994.

In.1993, Lin Zhuoran translated GB/T 4930-1993 into English, and was approved by the China Committee of the International Organization for Standardization (ISO /CS, namely

CSBTS) applied to the Electronic Probe Branch of the Microbeam Analysis Technical Committee of the International Organization for Standardization (ISO /TC202/SC2) for the establishment of international standards.

After many revisions by domestic and foreign peer experts, it was submitted to ISO for approval, and finally formed ISO 14595.2003 Microbeamanalysis-Electron

probemicroanalysis-Guidelinesforthespecificationofcertifiedreferencematerials(CRMs). according to

The provisions of GB/T 20000.2-2001 are equivalent to using ISO 14595 to replace GB/T 4930-1993, which is equivalent to a revision of the original standard.

GB/T 4930-2008 was drafted by Liu Yongkang, Wan Guangquan, Liang Xirong, Yang Qiujian, and was reviewed and approved by the National Microbeam Analysis Standardization Technical Committee.

It was reported to SAC for approval and implemented on October 1,.2008.

In.2014, the ISO 14595.2003 edition was revised, and finally the ISO 14595.2014 "Microbeamanalysis-Electron

probemicroanalysis-Guidelinesforthespecificationofcertifiedreferencematerials(CRMs)". according to

According to the provisions of GB/T 20000.2-2009, this document is equivalent to ISO 14595.2014 instead of GB/T 4930-2008, which is equivalent to