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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 40374-2021

Hardmetals - Determination of lead and cadmium content - Flame atomic absorption spectrometric method and inductively coupled plasma atomic emission spectrometry

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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 is equivalent to ISO 26482.2010 "Determination of Lead and Cadmium in Cemented Carbides".

A chapter "Terms and Definitions" has been added to this document.

This document has made the following minimal editorial changes.

---In order to be consistent with the existing standard series, the standard name is revised to "Cemented Carbide Chemical Analysis Method for the Determination of Lead and Cadmium

Flame atomic absorption spectrometry and inductively coupled plasma atomic emission spectrometry.

1 Scope

This document specifies the flame atomic absorption spectrometry and inductively coupled plasma emission spectrometry to determine the amount of lead in cemented carbide and

The amount of cadmium.

This document applies to cemented carbides with lead and cadmium content between 0.0001% (mass fraction) and 0.1% (mass fraction).

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

ISO 385 Laboratory glassware-Burettes

Note. GB/T 12805-2011 Laboratory glass burette (ISO 385.2005, NEQ)

ISO 648 Laboratory glassware-Single-volumepipettes

ISO 1042 Laboratory glassware-One-mark volumetric flask

flasks)

Note. GB/T 12806-2011 laboratory glassware single mark volumetric flask (ISO 1042.1998, NEQ)

3 Terms and definitions

There are no terms and definitions that need to be defined in this document.

4 Principle

Place the sample in a platinum dish or a polytetrafluoroethylene (PTFE) beaker, decompose the sample with hydrofluoric acid and nitric acid, and dissolve it with sodium hydroxide solution

Tungstic acid precipitation. Use potassium cyanide to mask residual cobalt, extract and separate lead and cadmium with dithizone, dilute, and use flame atomic absorption spectrometry (AAS) and electricity

Inductively coupled plasma atomic emission spectrometry (ICP-AES) for measurement.

5 Reagents

Unless otherwise stated, only use reagents and distilled water or equivalent purity water confirmed to be analytically pure in the analysis.