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

GB/T 6379.4-2025

Replacing GB/T 6379.4-2006

**Accuracy (trueness and precision) of measurement methods
and results - Part 4: Basic methods for the determination of the
trueness of a standard measurement method**

测量方法与结果的准确度（正确度与精密度） 第4部分：确定标准测量方法正确
度的基本方法

(English Translation)

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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 Part 4 of GB/T 6379 "Accuracy (Correctness and Precision) of Measurement Methods and Results". GB/T 6379 has been...

The following sections have been published.

---Part 1: General Principles and Definitions;

---Part 2: Basic methods for determining the repeatability and reproducibility of standard measurement methods;

---Part 3: Intermediate measures of precision in standard measurement methods;

---Part 4: Basic Methods for Determining the Accuracy of Standard Measurement Methods;

---Part 5: Alternative methods for determining the precision of standard measurement methods;

---Part 6: Practical Applications of Accuracy Values this document replaces GB/T 6379.4-2006 "Accuracy (Correctness and Precision) of Measurement Methods and Results - Part 4: Determination of Standards".

The "Basic Methods for Determining the Accuracy of Measurement Methods" has undergone major technical changes compared to GB/T 6379.4-2006, except for structural adjustments and editorial modifications.

The changes are as follows.

---Added the requirement to accept a reference value when estimating bias (see 5.4, 6.4), and added the requirement to accept a reference value in bias SS estimation.

Uncertainty (see 5.5.3, 6.5.2).

This document is equivalent to ISO 5725-4:2020 "Measurement methods and results - Accuracy (correctness and precision) - Part 4: Determination".

"Basic methods for ensuring the accuracy of standard measurement methods".

The following minimal editorial changes have been made to this standard.

---Change $u(\mu)$ Introduction ISO 5725 uses two terms, "accuracy" and "precision," to describe the accuracy of a measurement method. Accuracy refers to the result of a large number of tests.

Precision refers to the degree of agreement between the (arithmetic) mean of the results

and the true value or accepted reference value; while precision refers to the degree of agreement between test results. In practice...

In practical work, the accuracy of measurement methods is an important criterion for evaluating measurement methods and results, and is crucial in method development, laboratory certification, and product inspection.

All have wide applications. The GB/T 6379 series of standards aims to establish standard evaluation methods and alternatives for the precision and accuracy of measurement methods and results.

The methodology and its application guidelines consist of six parts.

---Part 1: General Principles and Definitions. The purpose is to explain the criteria for evaluating the accuracy (correctness and precision) of measurement methods and results.

General principles and applications, related definitions, etc.

---Part 2: Basic Methods for Determining the Repeatability and Reproducibility of Standard Measurement Methods. The aim is to provide estimated measurements through experiments.

A fundamental method for measuring the two extremes of method precision.

---Part 3: Intermediate Measures of Precision for Standard Measurement Methods. The purpose is to provide procedures for obtaining intermediate measures of precision.

The applicable conditions and estimation methods are given.

---Part 4: Basic Methods for Determining the Accuracy of Standard Measurement Methods. The purpose is to provide basic methods for determining the accuracy of measurement methods.

method.

---Part 5: Alternative methods for determining the precision of standard measurement methods. The aim is to provide alternative methods for certain specific application conditions.

This differs from other alternative methods for determining the accuracy and precision of a measurement method.

---Part 6: Practical Applications of Accuracy Values. The aim is to provide some practical applications of accuracy and precision measurements.

General considerations regarding "accuracy" and "precision" have been described in ISO 5725-1 and will not be repeated in this document.

ISO 5725-1 should be read in conjunction with the other parts of ISO 5725 (including this part), as ISO 5725-1 provides the basic definitions and...

General principles.

When the true value of the measured characteristic is known or can be inferred, the accuracy of the measurement method is of concern. Although the true value cannot be known precisely, it is possible to know an accepted reference value for the measured characteristic. For example, if a suitable standard sample is available or by referring to another measurement...

The measurement method or a known sample is used to determine the acceptance reference value. The accuracy of the measurement method can be assessed by comparing the acceptance reference value with the measurement method's given values.

The results are compared at different levels for analysis. Accuracy is usually expressed as bias. For example, in chemical analysis, if the measurements used...

If a method cannot completely extract a certain element, or if the presence of one element interferes with the determination of another element, it may produce errors.

Bias.

This part of ISO 5725 considers the following two measures of accuracy.

a) Bias in measurement methods. In situations where measurement method bias may exist, attention should be paid to this regardless of when or where the measurement is performed.

"Bias of the measurement method" (as defined in ISO 5725-1). This necessitates testing involving multiple laboratories, as described in ISO 5725-2.

There is more explanation on this in the text.

b) Laboratory bias. Measurements from a single laboratory can reveal "laboratory bias" (as defined in ISO 5725-1). If based on a single measurement...

When estimating laboratory bias in experiments, it's important to note that this estimate is only valid for the duration of the experiment. To prove this laboratory bias...

If the condition does not change, further routine testing is required, and ISO 5725-6 provides the relevant methods.

Accuracy of measurement methods and results (Accuracy and Precision) Part 4:
Determining the Correctness of Standard Measurement Methods Basic methods of degree

1 Scope

1.1

This document.

---This presents a basic method for estimating measurement method bias and laboratory