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**CERTIFICATION AND ACCREDITATION INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

RB/T 141-2018

**Evaluation of measurement uncertainty in the chemical testing
field. Applying quality control and method validation data to
evaluate measurement uncertainty
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method with reference to ISO 11352:2012 "Water quality based on uncertainty of measurement and quality control data measurement uncertainty.

Estimate

(Water quality-Estimation of measurement uncertainty based on validation and quality control Data) is formulated to be non-equivalent to ISO 11352:2012.

The main differences between this standard and ISO 11352:2012 are as follows.

- Introducing Anderson Darling (AD) statistical test and normal probability value π table for determining the measurement system Whether the system is under statistical control;
- Introducing Mandel h/k statistical test and h and k threshold table to determine whether the measurement system is consistent status;
- According to the domestic situation, Appendix B has been added.

This standard is proposed and managed by the National Certification and Accreditation Administration.

This standard was drafted. China National Accreditation Center for Conformity Assessment, China Center for Disease Control and Prevention, Environmental and Health-related Product Safety Institute of Jiangsu Province Product Quality Supervision and Inspection Institute, Nantong University Affiliated Hospital, Inner Mongolia Mengniu Dairy (Group) Co., Ltd., National Circle Horizon Analysis and Testing Center, Aussie Analytical Testing (Shanghai) Co., Ltd., Sinopec Refinery Engineering (Group) Co., Ltd., Luoyang Technology R&D Center, Rizhao City Environmental Monitoring Station, China National Scientific Research (Beijing) Standardization Technology Research Institute.

Introduction

This standard complies with the original "7.6 Measurement Uncertainty Assessment" in ISO/IEC 17025:2017 "General Requirements for Testing and Calibration Laboratory Capabilities" Then, refer to GB/Z 22553-2010 "Guidelines for assessing measurement uncertainty using estimates of repeatability, reproducibility and correctness", Using a top-down technique, a convenient method for assessing measurement uncertainty in a test laboratory is provided.

Under the condition of precision measurement, this standard confirms the data based on the quality control results and methods, and combines the cumulative effects brought by the two.

As an estimate of uncertainty.

Evaluation of measurement uncertainty in the field of chemical detection Use data quality control and methods to confirm data assessment uncertainty

1 Scope

This standard specifies the measurement uncertainty assessment based on quality control and validation data under system control.

This standard applies to the measurement uncertainty assessment of chemical testing laboratories.

2 Normative references

The following documents are indispensable for this document. For dated references, only the dated version applies to this document. all for undated references, the latest edition (including all amendments) applies to this document.

GB/T 3358.2-2009 Statistical vocabulary and symbols - Part 2. Application statistics GB/T 27043-2012 General requirements for conformity assessment GB/T 27407-2010 Laboratory quality control using statistical quality assurance and control chart technology evaluation analysis measurement system performance GB/T 27411-2012 Commonly used uncertainty assessment methods and representations in testing laboratories GB/T 28043-2011 Statistical method for proficiency testing using inter-laboratory comparison JJF1001-1001 General Measurement Terms and Definitions

3 Terms and definitions

The following terms and definitions apply to this document.

Accept reference value acceptedreferencevalue, ARV Used as a negotiated agreed

standard value for comparison.

Note: Accepted reference values come from.

- a) theoretical or determined values based on scientific principles;
- b) a specified or certified value based on experimental work by some national or international organization;
- c) an agreed or certified value based on collaborative experimental work sponsored by a scientific or engineering organization;
- d) When a) b) c) is not available, the expected value is used, ie the mean of the set of measurements is specified.

[GB/T 3358.2-2009, definition 3.2.7] 3.2 Quality control sample, QCS Stores a complete, well-used, stable and homogenized sample with physical or chemical properties similar to conventional samples of the system the precision and stability of the system is determined and monitored under density conditions.

Note: Changed from GB/T 27407-2010, 3.1.19.

Check sample, CS Samples that accept reference values are included in the quality control measurements.