

ICS 75.080
CCS E 30



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

GB/T 6683.3-2023

**Petroleum and related products - Precision of measurement
methods and results - Part 3: Monitoring and verification of
published precision data in relation to methods of test**

Issued on: May 23, 2023

Implemented on: September 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

foreword

Introduction

1 Scope

2 Normative references

3 Terms and Definitions

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 for Standardization Documents"

drafting:

This document is the third part of GB/T 6683 "Petroleum and related products measurement methods and precision of results": GB/T 6683 has

The following parts were released:

--- Part 1: Determination of the precision data of the test method;

--- Part 3: Monitoring and validation of test method published precision data:

This document is modified to adopt ISO 4259-3:2020 "Measurement methods and precision of results for petroleum and related products - Part 3: Test method

Monitoring and Validation of Published Precision Data:

Compared with ISO 4259-3:2020, this document has made the following structural adjustments:

--- Adjusted the number and order of the appendices: Appendix A corresponds to Appendix B of ISO 4259-3:2020; Appendix B corresponds to ISO 4259-3:

Appendix A for 2020:

The technical differences between this document and ISO 4259-3:2020 and their reasons are as follows:

--- Replaced ISO 4259-1 with the normative referenced GB/T 6683:1 (see Chapter 3, 4:2:2, 5:1 and 5:2:2);

--- Replaced ISO /IEC 17043 with the normative reference GB/T 27043 (see Chapter 3 and 4:1);

--- ISO 13528 was replaced by GB/T 28043 with normative references (see Chapter 3):

The following editorial changes have been made to this document:

--- 4:2:2 added a note to supplement the data processing method in the case of outlier detection (see 4:2:2);

--- A:2 in Appendix A adds the calculation method of Z when the z value is 0 and the z value is missing (see Appendix A):

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

The properties of petroleum products need to be evaluated using standard test methods for quality control and to verify product compliance with specifications: to specify

Two or more measurements of the same property of a specific sample by the same or different methods often fail to obtain completely consistent results: because

Therefore, it is necessary to estimate the precision of the test method based on statistical principles, that is, the degree of agreement between two or more results under a specified state:

objective measure of degree: GB/T 6683 aims to specify the precision of measurement methods and results of petroleum and related products, and is intended to be composed of five parts:

--- Part 1: Determination of the precision data of the test method: The aim was to establish a methodology for designing an interlaboratory study (ILS), and to adopt

The calculation method used to estimate the precision of the test method in this study:

--- Part 2: Interpretation and application of test method precision data: The purpose is to establish: when properties are determined by specific test methods

, the method of setting property specification limits based on the precision of the test method, and the specification when the supplier and receiver obtain inconsistent results

Judgment of conformity status:

--- Part 3: Monitoring and validation of test method published precision data: The purpose is to establish the daily monitoring test method to achieve

method to compare the precision with that published in the standard test method:

--- Part 4: Laboratory implementation of test method standards in a statistically controlled state of verification: The purpose is to determine the use of statistical controls

Figure, confirming whether an individual laboratory is in control of the method when implementing the test method standard:

--- Part 5: Evaluation of relative bias between different methods of measuring the same characteristic: The purpose is to establish a method for evaluating the difference between the two methods

Statistical research methods of relative deviations, and the determination of the functional relationship between relative deviations:

GB/T 6683:1 specifies the design, implementation and data processing of a single statistical study for precision estimation by random sampling in the laboratory

method: The resulting immediate estimate of the precision of the test method is published as expected precision:

This document is a description of the method for hypothesis testing using proficiency testing procedures (as defined in GB/T 6683:2), that is, testing experiments

Statistical consistency between the precision achieved by the laboratory in proficiency testing and the published precision obtained in accordance with GB/T 6683:1: because

Therefore, this document is a logical follow-up to other parts:

Measurement methods and precision of results for petroleum and related products

Part 3: Test methods with published precision data

Monitoring and Verification

1 Scope

This document describes how the precision values achieved by routinely monitored test methods are compared with the published precision values in the test method standards:

method, using data from a proficiency testing procedure involving routine users of the method standard:

This document is applicable to proficiency testing procedures based on standard test methods for (considered) homogeneous petroleum and related products:

, and the data are approximately normally distributed: This document applies only to (considered) long-term and transport-stable samples:

This document presents a method for comparing the standard deviation obtained by proficiency testing procedures with published values under reproducibility conditions:

The significance of this comparison is to determine whether the published reproducibility precision represents the realistic value obtained by everyday participants of the proficiency testing procedure:

Appendix A gives guidance for monitoring long-term performance of individual participants using proficiency testing procedure z-scores:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

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

this document:

GB/T 6683:1 Petroleum and related products Measurement methods and precision of results - Part 1: Test method precision data accuracy

(GB/T 6683:1-2021, ISO 4259-1:2017, MOD)

GB/T 27043 General requirements for proficiency testing for conformity assessment (GB/T 27043-2012, ISO /IEC 17043:2010, IDT)

GB/T 28043 Statistical methods for proficiency testing using inter-laboratory comparisons (GB/T 28043-2019, ISO 13528:

2015, IDT)

3 Terms and Definitions

The following terms and definitions defined in GB/T 6683:1, GB/T 27043 and GB/T 28043 apply to this document:

3:1

Proficiency testing; PT

Participants' performance was evaluated according to pre-established criteria through inter-laboratory comparisons:

[Source: GB/T 28043-2019, 3:2, modified]

3:2

Through the statistical analysis of the results obtained from aliquot samples of the same batch of homogeneous material, for the regular assessment of laboratory capacity participants in the implementation of standards

Procedures designed for test methods:

Note 1: The frequency of this test depends on the program objectives: The execution of