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Natural gas - Guidelines to traceability in analysis

天然气 分析的溯源性指南

(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.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical

Committee on Standardization of Natural Gas (SAC/TC244).

Introduction

Natural gas trade, regulation, and quality assessment all rely heavily on natural gas analysis. Quantitative traceability is crucial for the accuracy of natural gas analysis results.

The foundation and guarantee of reliability. This document covers the basic principles and procedures for establishing metrological traceability, natural gas analysis methods, selection of standard substances, and other aspects.

This paper provides general recommendations on instrument calibration and performance evaluation, quality control, and sampling to establish traceability of natural gas analysis results.

Provide guidance.

Traceability Guidelines for Natural Gas Analysis

1 Scope

This document outlines the basic principles and general procedures for establishing traceability of natural gas analysis results, and provides natural gas analysis methods and standards.

Guidance on material selection, analytical instrument calibration and performance evaluation, quality control, and sampling.

This document applies to the establishment, maintenance, and evaluation of traceability of measurement results in natural gas analysis.

Note: Natural gas in this document includes conventional natural gas, unconventional natural gas, and other natural gas alternatives.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 14850 Glossary of Gas Analysis GB/T 20604 Natural Gas Vocabulary GB/T 35861 General quality requirements and metrological traceability of mixed gases for gas analysis calibration JJF1001 General Metrological Terms and Definitions JJF1005 General Terms and Definitions for Standard Reference Materials JJF1059.1 Evaluation and Expression of

Measurement Uncertainty

3 Terms and Definitions

The terms and definitions defined in GB/T 14850, GB/T 20604, JJF1001, JJF1005, and JJF1059.1, as well as the following terms and definitions, apply to this document.

document.

natural gas analysis Methods and techniques for determining the content of major components, minor components, trace components and other components in natural gas.

Through the uninterrupted calibration chain specified in the document, the measurement results are linked to a reference object, and each calibration in the calibration chain will...

Introduce measurement uncertainty.

[Source. JJF1001-2011, 4.14]

4.1 Basic Principles

Metrological traceability refers to the characteristic of a measurement result being linked to a reference object through a documented, uninterrupted calibration chain.

Each calibration introduces measurement uncertainty. Measurement results are typically expressed as an estimate of the measurand and its uncertainty. Only when the measurement...

Only by tracing the results back to the same reference object can the comparability of measurement results be guaranteed. Typically, the same reference object refers to the actual...