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

GB/T 15000.9-2026

**Directives for the work of reference materials - Part 9:
Approaches for the production of reference materials with
qualitative properties**

标准样品工作导则 第9部分：定性特性标准样品的研制
(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 9 of GB/T 15000, "Guidelines for the Work of Standard Samples". GB/T 15000 has already published the following parts.

- Part 1: General provisions for standard samples in technical standards;
- Part 2: Common Terms and Definitions;
- Part 3: Standard Sample Assignment and Homogeneity and Stability Assessment;
- Part 4: Contents of Certificates, Labels, and Accompanying Documents;
- Part 5: Internal Development of Quality Control Samples;
- Part 6: General Rules for Packaging Standard Samples;
- Part 7: General Requirements for Standard Sample Producer Capabilities;
- Part 8: Use of Standard Samples;
- Part 9: Development of Qualitative Characteristic Standard Samples this document is equivalent to ISO 33406:2024 "Development of standard specimens for qualitative characteristics".

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

---To align with existing standards, the standard title has been changed to "Standard Sample Working Guidelines Part 9: Development of Qualitative Characteristic Standard Samples".

system";

---The two distribution scenarios in example B.4.3.1 have been modified to be consistent with the calculation formula in example B.4.3.2.

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 Standard Samples (SAC/TC118).

Introduction

In 2015, the International Organization for Standardization/Standards and Samples Committee (ISO/REMCO, the predecessor of ISO/TC334) published ISO/TR ISO/T R79

summarizes the latest progress in the development of qualitative characteristic standard samples. ISO/T R79 does not define the term "qualitative characteristics" or limit its use.

Therefore, at that time, "qualitative characteristics" was used as a superordinate term for nominal characteristics and ordinal characteristics, while "classification characteristics" was a synonym for "qualitative characteristics".

ISO/T R79 provides examples of standard samples (RMs), which have standard values for qualitative characteristics, or are considered to be characterized by...

Standard samples characterized by their properties and used internally in the laboratory. The examples listed are based on ISO 33405[18] and ISO/T R33402[17].

The principles outlined in ISO/T R79 are not subject to a consensus-building process.

For standard samples, naming characteristics are a special type of qualitative characteristic (the other type is ordinal characteristics). Polychlorinated biphenyls (PCBs) the identity of (PCB) and the taxonomic status of maple (Acer genus) are both nomenclature characteristics; the former has more than 200 possible values, and the latter has more than 160 possible values.

Values. These characteristic values are the names of specific chemical substances or biological species (e.g., PCB105, silver maple). The naming characteristic values are unique among each other.

A meaningful comparison is one in which they are the same or different.

Ordinal characteristic values may be ordered from minimum to maximum or from lowest to highest (i.e., hierarchical), but even if these values are represented numerically, their differences...

Values or ratios are also meaningless in practice.

In many fields, such as chemistry and biology, there are no explicit rules for describing qualitative characteristics. Qualitative characteristics can be described in different ways.

Characteristics, this depends on the characteristic itself, and even on the form in which a particular characteristic is expressed. For example, "color" might be considered a qualitative characteristic.

In this context, "red" is a value of that characteristic. Alternatively, some might suggest that "color" is a general characteristic while "red" is an individual case. Furthermore, pure color can...

The wavelengths of light are sufficient to describe this, with red light ranging from 625 nm to 740 nm. Therefore, the qualitative characteristic of "color" may be...

Assign a quantitative (or semi-quantitative) value, such as a wavelength of 700 nm.

Qualitative characteristic values can also be assigned based on their intended use. For example, "ethanol" can be considered the name of a specific compound.

An alcohol is an example of a class of compounds that possess the general characteristic of "alcohol," which can be considered as a general characteristic of "chemical substances." example.

In the technical system of standard samples, GB/T 15000 "Guidelines for Standard Sample Work" is the fundamental and general guideline for standard sample work in my country.

GB/T 15000 aims to establish universally applicable standards for the preparation, determination, packaging, storage, distribution, and application of standard samples by their manufacturers.

The requirements are proposed to consist of 9 parts.

---Part 1: General Provisions for Describing Standard Samples in Technical Standards. The purpose is to specify the requirements for describing standard samples in the development of technical standards.

General requirements for samples, the relationship between standard samples and technical standards, and technical criteria for selecting standard samples.

---Part 2: Common Terms and Definitions. The purpose is to define the terms and definitions related to standard samples, particularly those used with reference to standard samples.

The terminology used in product manuals, certificates, and relevant research and development reports.

---Part 3: Standard Sample Assignment and Homogeneity and Stability Assessment. The aim is to provide more specific guidance on technical issues.

It guides and provides a basic model for evaluating the homogeneity and stability of standard samples and for determining their values.

---Part 4: Contents of Certificates, Labels, and Accompanying Documents. The purpose is to establish the applicable procedures for preparing standard sample certificates, labels, and accompanying documents.

The relevant requirements to be followed when including file content.

---Part 5: Internal Development of Quality Control Samples. The purpose is to standardize and guide the development and use of quality control samples.

---Part 6: General Rules for Standard Sample Packaging. The purpose is to establish basic principles applicable to the packaging, storage, and transportation of standard samples. rule.

---Part 7: General Requirements for the Competence of Standard Sample Producers. The