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

GB/T 5275.5-2014

**Gas analysis -- Preparation of calibration gas mixtures using
dynamic volumetric methods -- Part 5: Capillary calibration
devices**

气体分析 动态体积法制备校准用混合气体 第5部分：毛细管校准器
(English Translation)

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Foreword

GB/T 5275 "gas analysis dynamic volume Preparation of calibration gas mixtures" is divided into the following sections.

- Part 1. calibration method;
- Part 2. positive displacement pump;
- Part 4. continuous injection;
- Part 5. Capillary calibration devices;
- Part 6. Critical orifices;
- Part 7. Thermal mass flow controller;
- Part 8. Diffusion method;
- Part 9. Saturation method;
- Part 10. Permeation;
- Part 11. Electrochemical method occurs.

This section GB/T 5275 Part 5.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method identical with ISO 6145-5:2009 "gas analysis dynamic volume Preparation of calibration gas mixtures 5 Part. Capillary calibration devices. " Consistency correspondence between this part of international documents and normative references of our files are as follows.

- GB/T 5275.1-2014 gas analysis equipment dynamic volume Method of calibration gas mixtures - Part 1. calibration method (ISO 6145-1:2003, IDT);
- GB/T 10628-2008 gas analysis calibration gas mixture composition measurements and

calibration comparison (ISO 6143:2001, IDT).

This part is proposed by the China Petroleum and Chemical Industry Association.

This part of the National Gas Standardization Technical Committee (SAC/TC206) centralized.

This section drafted by. China Institute of Metrology, Southwest Chemical Industry Research and Design Institute Limited, a Beijing Huayuan Gas Chemical the company.

1 Scope

GB/T 5275 provisions of this section contains a combination of single or multiple capillaries (gas divider) equipment utilized by the pure gas or a method for continuously preparing a mixed gas calibration gas mixture.

Single capillary systems useful for preparing the volume fraction of the mixed gas to 0.5 10-8.

Relative expanded uncertainty of the method is not more than 2%, can be used for the preparation of a specific gas atmosphere industrial gas mixing system.

Gas divider for mixing the pure gas or gas mixture from the preparation of a volume ratio. This equipment was diluted to obtain the volume fraction the reference gas between 0.0005 to 0.9, which is less than 0.5% relative repeatability.

Preparation of a mixed gas of a gas divider traceability can be achieved by its comparison with national or international gas standards. See the attached examples Record A.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

ISO 6143 Gas analysis calibration gas mixture composition measurements and check Comparative Law (Gasanalysis-Comparison methodsfordeterminingandcheckingthecompositionofcalibrationgasmixtures) ISO 6145-1 Gas analysis dynamic volume Preparation of calibration gas mixtures - Part 1. calibration method (Gasanalysis-Preparationofcalibrationgasmixturesusingdynamicvolumetricmethods-Part 1. Methodsofcali-bration) Principle 3 Gas at a constant pressure drop through the capillary was added to a constant flow rate of ballast gas flow in certain. Among them, the balance of gas may also be from other capillaries.

Should select the appropriate capillary tube so that the desired gas flow into the mixing unit. If you choose a suitable capillary, you can Adjusting the pressure drop across the

capillary to obtain the desired flow rate.

A commercial gas-divider comprises a plurality of capillaries. Including a combination of capillary gas divider can be used to dilute the pure gas, or use Balance calibration gas mixture is further diluted so as to obtain a re-calibration standard.

4.1.1 Structure

Figure 1 shows include dual capillary gas mixing system (ie double capillary system) a possible structure.