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

GB/T 9168-2025

Replacing GB/T 9168-1997

**Determination of distillation range of petroleum products -
Vacuum distillation method**

石油产品馏程的测定 减压蒸馏法

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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 replaces GB/T 9168-1997 "Determination of Petroleum Products by Vacuum Distillation". Compared with GB/T 9168-1997, except for structural adjustments...

Aside from integration and editorial changes, the main technical changes are as follows.

a) The scope of application has been changed (see Chapter 1, Chapter 1 of the 1997

edition);

b) Added the definition of overflow point (see 3.4);

c) The requirements for the vacuum distillation apparatus and the location of cold trap 2 in the structural diagram have been changed (see 5.1, 6.1 of the 1997 edition);

d) The requirements for distillation flasks have been changed, and a diagram of a double-necked distillation flask has been added (see 5.2, 6.1.1 of the 1997 edition);

e) Increased dimensional requirements for the vacuum jacket column (see Table 1);

f) Increased sampling requirements for petroleum product pipelines (see 7.1);

g) The instrument preparation and verification section has been revised, detailing the frequency and timing requirements for instrument temperature sensors and overall system verification (see...).

Chapter 8 (Chapter 9 in the 1997 edition);

h) The algorithm for converting the measured vapor temperature to the atmospheric equivalent temperature has been changed (see 10.1 and Appendix H, 1997 edition). Section 11.1 and Appendix G);

i) Improved the determination precision of biodiesel containing fatty acid methyl esters with a distillation range of 274°C~400°C and BD100 biodiesel. Density (see Chapter 11);

j) The cooling start temperature for temperature response time determination has been changed (see B.3.5, B3.5 in 1997).

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 Petroleum Products and Lubricants (SAC/TC280).

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This document was first published in 1988, revised for the first time in 1997, and this is the second revision.

Introduction

This document can be used to determine the content of petroleum products and their fractions that may decompose under normal pressure during distillation, within a distillation range of 274°C to 400°C.

Distillation characteristics of fatty acid methyl ester biodiesel and BD100 biodiesel. A distillation apparatus with approximately one theoretical plate was used to process the samples.

Obtaining the boiling point range of a sample through vacuum distillation can be used to design distillation apparatus, determine suitable mixtures for refining processes, and identify products and their properties.

Contents such as compliance with standards.

The boiling point range is related to the kinematic viscosity, vapor pressure, calorific value, average molecular weight and other chemical, physical and mechanical properties of the sample.

Petroleum product specifications may typically include limits on the distillation range.

Determination of distillation range of petroleum products by vacuum distillation
Warning---Personnel using this document should have practical experience in formal laboratory work. The use of this document may involve certain hazardous activities.

This document does not address all potential safety issues related to the materials, equipment, and operations used. Users are responsible for taking appropriate safety and health precautions.

Implement the measures and ensure they comply with the conditions stipulated by relevant national laws and regulations.

1 Scope

This document describes petroleum products and their distillates that can partially or completely evaporate when the liquid reaches a maximum temperature of 400°C under reduced pressure.

Methods for determining the boiling point range of biodiesel containing fatty acid methyl esters and BD100 biodiesel.

This document applies to petroleum products and their fractions, biodiesel containing fatty acid methyl esters with a distillation range of 274°C~400°C, and... BD100 biodiesel.

This document provides detailed descriptions of both manual and automated determination methods. In case of any dispute, the agreed-upon distillation pressure shall apply.

Arbitration tests were conducted using a manual measurement method.

2 Normative references

GB/T 386

GB/T 1885

GB/T 4756

GB/T 6682

GB/T 13377

GB/T 27867

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

The expected distillation temperature at atmospheric pressure without thermal decomposition is obtained by converting the measured vapor temperature using formula H.1.

3.2 Endpoint; EP

Final boiling point (FBP) The highest steam temperature reached during the experiment.