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

GB/T 11136-2025

Replacing GB/T 11136-1989

**Determination of bromine index for petroleum hydrocarbons -
Electrometric titration**

石油烃类溴指数的测定 电位滴定法

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Foreword

This document complies with the rules of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 11136-1989 "Determination of Bromine Index in Petroleum Hydrocarbons (Voltage Titration)" and is consistent with GB/T 11136-1989. In comparison, aside from structural adjustments 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 1989 edition);
- b) The "dead stop point" potentiometric titrator section has been removed from the instrumentation section, and the "dead stop point" potentiometric titrator section in Appendix A of GB/T 11136-1989 has also been removed. The circuit diagram for the titrator has been revised, removing the step of determining the bromine index using a "dead stop point" potentiometric titrator (see Chapter 5, 5.1 of the 1989 edition). 8.4 and Appendix A);
- c) The preparation of the starch indicator solution has been modified, and mercuric iodide reagent is no longer added (see 6.18, 7.4 of the 1989 edition);
- d) The preparation of the titration solvent was changed from "1,1,1-trichloroethane (trichloromethane) and methanol" to "dichloromethane and anhydrous ethanol". "Alcohol" (see 6.22, 7.2 in the 1989 edition);
- e) The volume precision of the standard solution added during the standardization process of potassium bromide-potassium bromate standard solution has been increased to "accurate to

0.01 mL" (see...). 6.23);

f) The option to use an 80 mL titration solvent has been added, and the corresponding sample volume requirements have been added to Table 1 (see 7.3, Table 1);

g) The contents of the "Report" have been changed (see Chapter 9, Chapter 11 of the 1989 edition);

1 Scope

GB/T 11136-2025 is the Chinese national standard on determination of bromine index for petroleum hydrocarbons - electrometric titration, in the field of petroleum and related technologies. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 5 October 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2026. Classification: ICS 75.080, CCS E30. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes a method for determining the bromine index of petroleum hydrocarbons using potentiometric titration. This document applies to petroleum hydrocarbons or mixtures with a final boiling point below 288°C that are substantially free of olefins and components lighter than isobutane, such as straight... Petroleum fractions such as distilled and hydrocracked naphtha, reformate, kerosene, and aviation turbine fuel. The bromine index is measured within a range of 5 mg/L. 100g (calculated as Br) ~ 1000mg/100g (calculated as Br).

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 4756 Manual Sampling Method for Petroleum Liquids

GB/T 6682-2008 Specifications and test methods for water used in analytical laboratories

GB/T 27867 Automatic Sampling Method for Petroleum Liquid Pipelines NB/SH/T 0843
Evaluation Statistical Techniques for Testing Systems in the Petrochemical Industry

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 bromine index The mass of bromine consumed in the reaction with 100g of sample under specified test conditions.

Note. Expressed in mg/100g (as Br).

4.Method Overview A known mass of the sample is dissolved in a solvent maintained at 0°C~5°C, and then titrated with a potassium bromide-potassium bromate standard solution. When the presence of free bromine in the solution causes a sudden jump in the potential of the potentiometric titrator, it indicates that the titration endpoint has been reached.

5 Instruments and Equipment

5.1 Potentiometric Titrator. Any instrument with a high-resistivity polarized current source capable of titrating to a preset endpoint can be used. The instrument has two platinum electrodes. The interelectrode voltage should be maintained at approximately 0.8V, and the sensitivity should be such that the electrode can indicate the titration endpoint when the potential change is around 50mV. (The last sentence appears to be incomplete and possibly refers to a product or service.) Suitable potentiometric titrators of his type, including some pH meters, can be used.