

Translated English of Chinese Standard: GB/T11079-2015

www.ChineseStandard.net

Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 75.140
D 21

GB/T 11079-2015

Replacing GB/T 11079-2000

Test Method for Carbonizable Substances in White Mineral Oil

白油易碳化物试验法

GB/T 11079-2015 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: December 31, 2015

Implemented on: June 1, 2016

**Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;
Standardization Administration of the People's Republic of China.**

Table of Contents

Foreword.....	3
1 Application Scope.....	5
2 Normative References.....	5
3 Summary of Test Method.....	5
4 Significance and Use.....	5
5 Apparatus.....	6
6 Reagents.....	7
7 Preparation of Basic Solutions and Colorimetric Reference Standard Solution.....	9
8 Test Procedure	10
9 Interpretation and Reporting of Results.....	10
10 Precision and Bias.....	11

Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 11079-2000, *Standard Test Method for Carbonizable Substances in White Mineral Oil*. Compared with GB/T 11079-2000, the main changes are as follows:

- it changes the standard name;
- it adds the normative references GB/T 601 and GB 4853 (see Article 2);
- it adds the contents of safety warnings (see 6.2, 6.3, 6.4, 6.9, 6.15 and 8.3);
- it adds “slowly add the acid to the water” (see 6.2, 6.3 and 6.4);
- it rounds off some numerical values and adds tolerances (see 7.1, 7.2 and 7.3; 6.1, 6.2 and 6.3 of edition 2000);
- it adds using a nonchromium containing, strongly oxidizing cleaning solution to wash test tube (see 8.1); and
- it deletes “cover up with the stopper rapidly and use distilled water to seal the opening” in the preparation of basic solution (6.1, 6.2 and 6.3 of edition 2000).

This Standard was redrafted by modifying and adopting ASTM D565-99 (2013), *Standard Test Method for Carbonizable Substances in the White Mineral Oil* (English version). In consideration of the national conditions of China, some modifications are made for this Standard when adopting the standard. The main differences between this Standard and ASTM D565-99(2013):

- English units are deleted in this Standard;
- Chinese national standards are used as reference standards in this Standard;
- reagents of analytical purity and above are used in this Standard;
- standard layout is re-arranged in accordance with the national conditions of China and the standard formats; and
- the test tube washing procedures and expression of test results are detailed in this Standard to improve operability.

This Standard was proposed by and shall be under the jurisdiction of China National Standardization Technical Committee on Petroleum Products and Lubricants (SAC/TC 280).

The drafting organization of this Standard: SINOPEC Fushun Research Institute of Petroleum and Petrochemicals.

Test Method for Carbonizable Substances in White Mineral Oil

Warning: This standard may involve certain hazardous materials, equipment and operations, but it does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Application Scope

This Standard specifies the method for the test of carbonizable substances in white mineral oil.

This Standard applies to white mineral oil.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 601, *Chemical Reagent - Preparations of Standard Volumetric Solutions*

GB/T 4853, *Food Grade White Oil*

GB/T 6682, *Water for Analytical Laboratory Use – Specification and Test Methods*

3 Summary of Test Method

The mineral oil is treated with concentrated sulfuric acid (H_2SO_4) under prescribed conditions and the resulting color is compared with a reference standard to determine whether it passes or fails the test.

4 Significance and Use

This test method is a means for ascertaining whether white mineral oil conforms to the product quality standards, e.g. it is required to test carbonizable substances in the product specifications of GB 4853.

1:3 of the volumes of sulfuric acid to distilled water (Slowly add the acid to the water and use after cooling down). Nitrogen-free test: Use the same volume of distilled water to dilute the sulfuric acid to be tested and cool down; take 10 mL of the sulfuric acid solution cooled down, gently overlay on 10 g/L of diphenylamine-sulfuric acid solution, and do not mix up. A blue color should not appear at the zone of contact within 1 h. This test detects as little as 0.0002 % (mass fraction) nitric acid (HNO_3).

6.3 Hydrochloric acid – Analytical purity, with a concentration 36% to 38% (mass fraction) (**Warning – Causes burns. Vapor extremely irritating**). Prepare diluted hydrochloric acid in accordance with the proportion of 1: 39 of the volumes of hydrochloride acid to water (Slowly add the acid to the water).

6.4 Glacial acetic acid – Analytical purity, with a concentration greater than 99% (mass fraction) (**Warning – Corrosive. Vapor irritating**).

6.5 Hydrogen peroxide – Analytical purity, prepared 3% (mass fraction) hydrogen peroxide aqueous solution.

6.6 Cupric sulfate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) – Analytical purity.

6.7 Cobaltous chloride ($\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$) – Analytical purity.

6.8 Ferric chloride ($\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$) – Analytical purity.

6.9 Sodium hydroxide – Analytical purity (**Warning—Corrosive. Can cause severe burns or blindness. Evolution of heat produces a violent reaction or eruption upon too rapid a mixture with water**); mix 5 g of sodium hydroxide and 20 mL of distilled water to prepare sodium hydroxide solution (1:4).

6.10 Potassium iodide – Analytical purity.

6.11 Diphenylamine – Analytical purity. Dissolve 1 g of diphenylamine into 100 mL of concentrated sulfuric acid of mass fraction 95% to 98% to make a sulfuric acid 10 g/L.

6.12 Soluble starch – Analytical purity. Prepare an aqueous solution 10 g/L as the indicator.

6.13 Methyl orange indicator – Analytical purity. Prepare an aqueous solution 5 g/L.

6.14 Sodium thiosulfate – Analytical purity. Prepare and demarcate the sodium thiosulfate solution 0.1 mol/L in accordance with GB/T 601.

6.15 Cleaning solution – Chromic acid (H_2CrO_4) cleaning solution (**Warning—Causes severe burns. A recognized carcinogen. Strong oxidizer.**).

6.16 Reference white oil – White oil number 10 or 15, in accordance with the requirements of GB 4853 or equivalent.

9.2 If the oil layer is discolored or if the acid layer is darker than the reference standard colorimetric solution, white mineral oil shall be reported as not passing the test.

9.3 If the results of two repeated tests are different, carry out a third test and take two same test results as the test result of the specimen.

10 Precision and Bias

No statement is made about either the precision or bias of this test method since the result merely states whether there is conformance to the criteria for success specified in the procedure.

_____ **END** _____

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----