

ICS 75.140

CCS E42



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

GB/T 11079-2015

Replacing GB/T 11079-2000

Test method for carbonizable substances in white mineral oil

白油易炭化物试验法

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 China**

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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,

6.3 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,

6.3 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

GB/T 11079-2015 is the Chinese national standard on test method for carbonizable substances in white mineral oil, 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 31 December 2015 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 June 2016. Classification: ICS 75.140, CCS E42. 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 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 (H₂SO₄) 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