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

GB/T 1816-2019

Replacing GB/T 1816-1997

Test for neutrality of benzole products

苯类产品中性试验

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Table of Contents

Warning

1 Scope

2 Normative references

3 Principle

4 Sampling and preparation of the test sample

5 Reagents

6 Apparatus

7 Test procedure

8 Test result

Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 1816-1997 Test for neutrality of benzole products. Compared with GB/T 1816-1997, the main technical changes are as follows: a warning was added; the scope was modified, adding the petroleum benzene, petroleum toluene and petroleum mixed xylene produced from petroleum fractions by catalytic reforming; the normative references were modified; the reagent water was changed to carbon dioxide free distilled water; the indicators were modified; the sampling and preparation of the test sample were modified; and the test procedure was modified.

This standard was proposed by the China Iron and Steel Association.

This standard is under the jurisdiction of the National Technical Committee on Coal Chemical Industry of Standardization Administration of China (SAC/TC 469).

The drafting organizations of this standard are Angang Steel Co. Ltd., the Dalian Petrochemical Branch of PetroChina Natural Gas Co. Ltd., Anshan Kexiang Instrument Co. Ltd., Anshan Hansheng Metallurgical Equipment Co. Ltd. and the Metallurgical Industry Information Standards Research Institute.

The previous edition of the standard replaced by this standard was GB/T 1816-1997.

Warning

WARNING - Benzole products are volatile, toxic and harmful substances. The operator shall wear a gas mask and other protective equipment and shall work in a fume cupboard.

1 Scope

A short, old and still indispensable acceptance test: whether a drum of benzene, toluene or xylene is acid, alkaline or neutral. Aromatic hydrocarbons recovered from coke oven gas are washed with acid and with alkali on their way through the refining train, and any carry-over of either wash leaves the product corrosive to the tanks and pipework it will sit in, and unsuitable for the downstream reactions it is bought for. The test in this standard answers the question without a titration and without instruments: a measured volume of the sample is extracted at room temperature with a measured volume of carbon dioxide free distilled water, and the acidity or alkalinity of the aqueous extract is read off with two indicators in sequence, phenolphthalein first and methyl red after, so that a single tube of water gives a verdict of alkaline, acid or neutral. This standard specifies the principle, the sampling and preparation of the test sample, the reagents, the apparatus, the test procedure and the test result for that determination. It applies to the neutrality test of coking benzene, coking toluene and coking xylene obtained by hydrogenation and rectification of the crude benzene and light benzene recovered from coke oven gas, and, added in this edition, of the petroleum benzene, petroleum toluene and petroleum mixed xylene produced by catalytic reforming of petroleum fractions. It is used by coking plants, aromatics producers, tank terminals and the laboratories that accept their cargoes.

This standard specifies the principle, the sampling and preparation of the test sample, the reagents, the apparatus, the test procedure and the test result of the neutrality test of benzole products.

This standard applies to the neutrality test of benzole products such as coking benzene, coking toluene and coking xylene obtained by the hydrogenation and rectification of the crude benzene and light benzene recovered from coke oven gas, and of petroleum benzene, petroleum toluene and petroleum mixed xylene produced from petroleum fractions by the catalytic reforming process.

2 Normative references

The following 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 603 Chemical reagent - Preparations of reagent solutions for use in test methods.

GB/T 1999 Method of sampling for coking oil products.

GB/T 4756 Petroleum liquids - Manual sampling.

3 Principle

At room temperature, a measured quantity of the test sample is extracted with a measured quantity of water, and the acidity or alkalinity of the extract is used to express the acidity or alkalinity of the product.

4 Sampling and preparation of the test sample

The sampling and preparation of benzole products shall be carried out in accordance with the provisions of GB/T 1999 and GB/T 4756.

5 Reagents

5.1 Carbon dioxide free distilled water, prepared in accordance with GB/T 603.

5.2 Phenolphthalein indicator solution, made up in accordance with GB/T 603 at the concentration stated in this clause.

5.3 Methyl red indicator solution, made up in accordance with GB/T 603 at the concentration stated in this clause.

6 Apparatus

6.1 Separating funnel, of the capacity stated in this clause.

6.2 Glass test tube, of the capacity stated in this clause.

6.3 Measuring cylinders, of the two capacities stated in this clause.

8 Test result

The result for the test sample is expressed as alkaline, acid or neutral.