

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS K 2252 : 1998

Petroleum products — Testing method for reaction

ICS 75.080

Descriptors : petroleum products, acidimetry, alkalimetry, acids, bases (chemical),
reaction chemistry

Reference number : JIS K 2252 : 1998 (E)

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

Date of Establishment: 1952-06-21

Date of Revision: 1998-01-20

Date of Public Notice in Official Gazette: 1998-01-20

Investigated by: Japanese Industrial Standards Committee
Divisional Council on Chemical

JIS K 2252:1998, First English edition published in 1999-01

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
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Printed in Japan

Petroleum products – Testing method for reaction

1 Scope This Japanese Industrial Standard specifies the testing method of existence of water-soluble acids and bases contained in petroleum products.

Remarks 1 Dangerous reagents operations and apparatus are sometimes used in these methods. However, this Standard does not cover all the safe methods for use of such things. Therefore, prior to the test, the user of these testing methods shall determine appropriately the prohibitions to secure safety and health.

2 The normative references of this Standard are shown in Attached Table 1.

2 Principle of test The existence or non-existence of acids and bases in the sample is decided by such methods that the samples is added with water, heated and stirred so that the acids and bases in sample are extracted into water layer, and then the acidity, neutrality or basicity of extraction water is observed by indicators of Methyl Orange solution and phenolphthalein solution.

3 Testing apparatus The testing apparatus shall be as follows :

- (1) **Erlenmeyer flask** The flask of 300 mL in capacity specified in Attached Fig. 10-1 of **JIS R 3503**.
- (2) **Separating funnel** The separating funnel of 300 mL in capacity specified in Attached Fig. 31-1 or Attached Fig. 32-1 of **JIS R 3503**.
- (3) **Measuring cylinder** The measuring cylinder without stopper of 100 mL in capacity specified in Attached Table 6 of **JIS R 3505**.
- (4) **Filter paper** The filter paper of class 5, A or B specified in **JIS P 3801**.
- (5) **Centrifugal separator** The centrifugal separator shall be such that even number of graduated test tubes, not less than 2 can be mounted on it, it can rotate to generate a relative centrifugal force of 600 to 700 at the top part of graduated test tubes, it operates safely even in inflammable atmosphere and it is constructed robustly.

The outer cylinder and shock absorbing rubber for graduated test tube shall be manufactured robustly enough to bear the maximum centrifugal force and hold the graduated test tubes tightly during the working of centrifugal separator. The revolutions per minute of rotating shaft shall be calculated according to the following formula :

$$n = 1\,335 \sqrt{\frac{f}{a}}$$

where, n : revolution per minute (rpm)

f : relative centrifugal force

a : distance between the tops of two graduated test tubes confronting each other under rotating condition (diameter of rotation) (mm)

- (6) **Graduated test tube** The graduated test tube shall comply with the dimension shown in Fig. 1 and shall be made of forosilicate glass – 1.