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Gasoline—Determination of oxidation stability—Induction period method

ICS 75.160.20

Descriptors : gasoline, automotive fuels, chemical-resistance tests, oxidation resistance,
oxidation methods, determination of content

Reference number : JIS K 2287 : 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: 1986-07-01

Date of Revision: 1998-01-20

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**In the event of any doubts arising as to the contents,
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Gasoline—Determination of oxidation stability— Induction period method

1 Scope This Japanese Industrial Standard specifies the method for measuring the oxidation stability of automobile gasoline by induction period method.

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 Induction period can be used as a criterion for tendency to produce gummy substance while automobile gasoline is stored. The amount of gum produced while being stored is seriously influenced by storing condition.

3 The oxidation stability for aviation gasoline is measured according to the testing method for oxidation stability (potential residue method) specified in **JIS K 2276**.

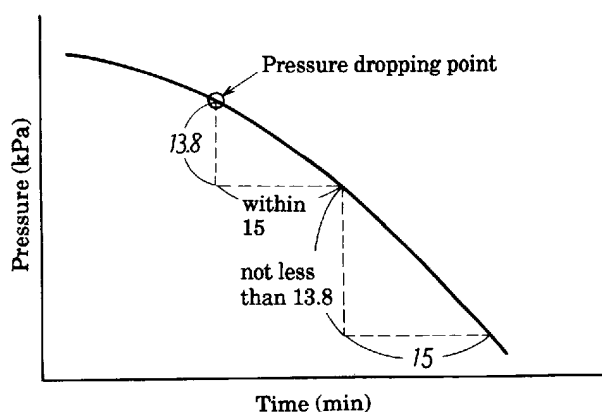
4 The normative references are shown in Attached Table 1.

5 The units and numerical values given in { } in this Standard are in accordance with the traditional units and are the informative values.

2 Definitions The definitions shall be as stated below.

- (1) **pressure dropping point** On the observed pressure-time curve, the starting point of such behavior that the pressure drops accurately 13.8 kPa {0.14 kgf/cm²} within 15 min and then the pressure continues to drop by not less than 13.8 kPa {0.14 kgf/cm²} during 15 min, shall be defined as the pressure dropping point.

Informative reference : The pressure dropping point on a pressure-time curve is shown in Informative reference Fig. 1.



Informative reference Fig 1 Pressure dropping point

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- (2) **induction period** The lapse of time (min) from immersion of a cylinder in which sample and oxygen have been charged, into a 100 °C bath to the pressure dropping point.

3 Principle of test Place 50 ml of sample in a cylinder and then charge oxygen to get the pressure of 689 kPa to 703 kPa {7.03 kgf/cm² to 7.17 kgf/cm²}, and immerse it in a thermostat at 98 °C to 102 °C. Observe the change of pressure to find the time period until the pressure dropping point. After calibration of bath temperature, calculate the induction period at 100 °C.

Informative reference : This test methods are prepared as being referred to **ISO/DIS 7536 : 1990.**

4 Tester

4.1 Tester for oxidation stability The tester for oxidation stability consists of the following (1) to (6), and is exemplified in Fig. 1.

For two cylinders

Unit : mm

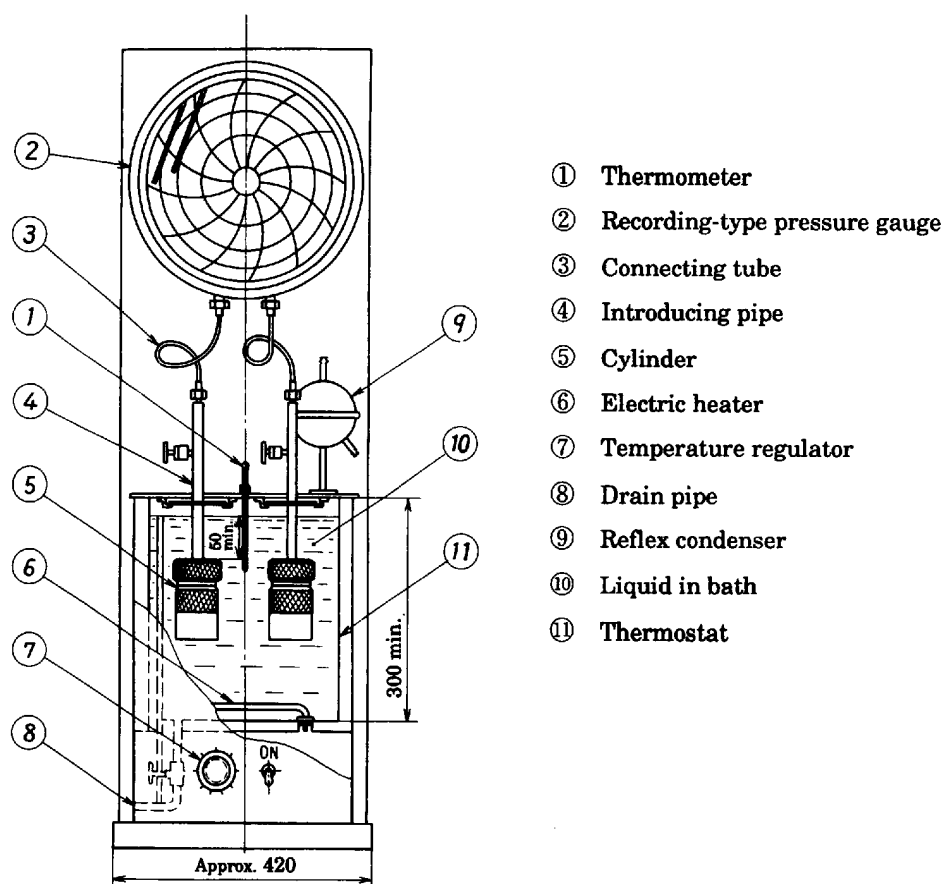


Fig. 1 Tester for oxidation stability (an example)