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Coke—Testing methods

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by Center for Coal Utilization, Japan (CCUJ)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS K 2151** : 1993 is replaced with this Standard.

This revision has been made based on **ISO 567** : 1995 *Coke—Determination of bulk density in a small container*, **ISO 616** : 1995 *Coke—Determination of shatter indices*, **ISO 728** : 1995 *Coke (nominal top size greater than 20 mm)—Size analysis by sieving*, **ISO 1014** : 1985 *Coke—Determination of true relative density, apparent relative density and porosity* and **ISO 2325** : 1986 *Coke—Size analysis (Nominal top size 20 mm or less)* for the purposes of making it easier to compare this Standard with International Standards; to prepare Japanese Industrial Standard conforming with International Standards; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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Contents

		Page
Introduction		1
1	Scope	1
2	Normative references	1
3	General matter	2
3.1	Scale	2
3.2	Handling of sample	2
3.3	Rules for rounding of numerical values	2
3.4	Report	2
4	Definitions	2
5	Method for particle-size analysis	2
5.1	Principle of test	2
5.2	Sieve	2
5.3	Sampling, preparation and drying	3
5.4	Procedure	4
5.5	Expression of results	4
6	Method for determination of bulk density	6
6.1	Principle	6
6.2	Sample	6
6.3	Apparatus	6
6.4	Procedure	7
6.5	Calculation of bulk density	7
6.6	Expression of results	7
6.7	Repeatability limit	8
7	Method for determination of density and porosity	8
7.1	Principle of test	8
7.2	Method for determination of apparent density	8
7.3	Method for determination of true density	12
7.4	Porosity	14

This is a preview. Click here to purchase the full publication.

8 Method for determination of shatter indices 17
8.1 Principle of test 17
8.2 Sample 17
8.3 Apparatus 18
8.4 Procedure 18
8.5 Expression of results 19
8.6 Repeatability limit 20

9 Method for determination of drum indices 21
9.1 Classification of method 21
9.2 Drum method 21
9.3 Tumbler method 26

10 Method for reactivity test 30
10.1 Principle of test and measurement 30
10.2 Sample 31
10.3 Apparatus 31
10.4 Procedure 32
10.5 Calculation of measured value 32
10.6 Number of times of tests 33
10.7 Tolerance 33
10.8 Report value 33

11 Method for fusibility-of-ash test 35
11.1 Principle of test 35
11.2 Fusion-characteristic temperature 35
11.3 Sample 35
11.4 Apparatus 35
11.5 Procedure 36
11.6 Calculation of measured value 37
11.7 Number of times of tests 37
11.8 Tolerance 38
11.9 Report 38

Annex (informative) Comparison table between JIS and corresponding International Standards 42

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Coke—Testing methods

Introduction This Japanese Industrial Standard has been prepared based on the second edition of **ISO 567** *Coke—Determination of bulk density in a small container* published in 1995, the second edition of **ISO 616** *Coke—Determination of shatter indices* published in 1995, the third edition of **ISO 728** *Coke (nominal top size greater than 20 mm)—Size analysis by sieving* published in 1995, the second edition of **ISO 1014** *Coke—Determination of true relative density, apparent relative density and porosity* published in 1985 and the third edition of **ISO 2325** *Coke—Size analysis (Nominal top size 20 mm or less)* published in 1986 with some modifications of the technical contents.

Portions given sidelines or dotted underlines are the matters modified from the original International Standards. A list of modifications with the explanations is given in annex (informative).

1 Scope This Standard specifies the method for the particle-size analysis, the method for the determination of the bulk density, the method for determination of the density and porosity, the method for determination of the shatter indices, the method for determination of the drum indices, the method for the reactivity test and the method for the fusibility-of-ash test.

Remarks : The International Standards corresponding to this Standard is as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21**.

ISO 567 : 1995 *Coke—Determination of bulk density in a small container* (MOD),

ISO 616 : 1995 *Coke—Determination of shatter indices* (MOD),

ISO 728 : 1995 *Coke (nominal top size greater than 20 mm)—Size analysis by sieving* (MOD),

ISO 1014 : 1985 *Coke—Determination of true relative density, apparent relative density and porosity* (MOD), and

ISO 2325 : 1986 *Coke—Size analysis (Nominal top size 20 mm or less)* (MOD)

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS K 0557 *Water used for industrial water and wastewater analysis*

JIS K 8646 *Dextrin hydrate*

JIS M 0104 *Technical terms used in coal utilization*

JIS M 8810 *Coal and coke—General rules for sampling, analysis and testing*

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JIS M 8811 *Coal and coke—Sampling and sample preparation*

JIS M 8812 *Coal and coke—Methods for proximate analysis*

JIS M 8820 *Coal and coke—Determination of total moisture content of a lot*

JIS Z 0701 *Silicagel desiccants for packaging*

JIS Z 8401 *Guide to the rounding of numbers*

JIS Z 8801-1 *Test sieves—Part 1 : Test sieves of metal wire cloth*

JIS Z 8801-2 *Test sieves—Part 2 : Test sieves of perforated metal plate*

3 General matter

3.1 Scale The reciprocal sensibility of a scale, unless otherwise specified, shall be taken as 1/1 000 of weighing capacity. The scale which is near the weighing capacity according to the amount of sample shall be preferably used.

3.2 Handling of sample In accordance with clause **5** of **JIS M 8810**.

3.3 Rules for rounding of numerical values The calculation of measured value and the report value in each test shall be rounded in accordance with **JIS Z 8401**.

3.4 Report In accordance with clause **12** of **JIS M 8810**.

4 Definitions For the purpose of this Standard, the definitions given in **JIS M 0104** and the following definitions apply.

a) **gross sample** a sample which collected all increments taken from the sub-lot or the lot which is not divided

b) **partial sample** a sample which collected two or more increments taken from the sub-lot or the lot which is not divided in order to measure the total moisture

c) **increment** a part of the lot sampled in one action of a sampler or a part of the sample taken in accordance with the increment reduction method

d) **nominal top size** the size of the minimum sieve opening (nominal size) of the test sieve (see square hole, **JIS Z 8801-2**) of which the plus-sieve residual percentage of a sample becomes not more than 5 %

5 Method for particle-size analysis

5.1 Principle of test A sample is screened with the predetermined sieve, and the residual amount on each sieve and the amount passing through the minimum sieve opening are weighed, and the particle size of the sample is expressed by the mass fraction (%) to the sample.

5.2 Sieve The required sieves selected from the sieves specified in **JIS M 8801-1** and **JIS Z 8801-2** are determined and used in accordance with the agreement between the parties concerned with delivery.

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5.3 Sampling, preparation and drying

5.3.1 Sampling The primary increment of the mass specified in table 5-4 of **JIS M 8811** shall be taken by not less than the number of pieces specified in table 5-1 of **JIS M 8811**.

Remarks : The confirmation of the precision should be performed in accordance with clause **11** of **JIS M 8811**.

5.3.2 Preparation of sample Usually, the whole quantity every increment, every partial sample, without carrying out the reduction of gross sample as it is shall be taken as the particle-size measurement sample. However, when the mass of the sample for particle-size analysis exceeds twice the mass specified in table 5.1, it may be reduced to the mass in table 5.1. That is, in the case of the gross sample, it may be reduced to the mass in table 5.1. In the case of a partial sample and an increment, they may be reduced to m_P and m_1 which are obtained from the formula (1) and the formula (2).

$$n_P m_P = m_G \quad \cdots\cdots (1)$$

and

$$n_1 m_1 = m_G \quad \cdots\cdots (2)$$

where, m_P : mass of partial sample after reduction

n_P : number of partial samples

m_G : mass of gross sample specified in table 5.1.

m_1 : mass of increment after reduction

n_1 : number of pieces of increment

Table 5.1 Minimum mass of gross sample for particle-size analysis

Nominal top size mm	Minimum mass kg
Over 125	2 000
125	1 000
90	500
63	250
45	125
31.5	60
22.4	30
16	15
11.2	8
8	4
5.6	2
4	1

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