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

中华人民共和国国家标准

GB/T 30733-2014

**Determination of total carbon, hydrogen and
nitrogen content in coal—Instrumental method**

煤中碳氢氮的测定仪器法

(ISO 29541: 2010, Solid mineral fuels -- Determination of total carbon, hydrogen and
nitrogen content -- Instrumental method, MOD)

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Foreword

This Standard is drafted in accordance with the rules specified in GB/T 1.1-2009.

This standard used a redraft method to modify and adopt the ISO 29541:2010 *Solid Mineral Fuels -- Determination of Total Carbon, Hydrogen and Nitrogen Content -- Instrumental Method*.

Compared with ISO 29541:2010, there is much adjustment in terms of the structure. Annex A lists the contrast list between the chapter and article number of this standard and ISO 29541:2010.

Compared with the ISO 29541:2010, there are technology difference; there differences involved clauses have been marked by single vertical line (|) in blank positions of lateral margin and Annex B shows a list of the corresponding technical differences and their causes.

This standard is proposed by China National Coal Association.

The standard is centralized by SAC/TC 42, National Coal Standardization Technical Committee of China.

Drafting units of this standard: Branch of China Coal Research Institute, Shenhua Trading Group Limited, and Changsha Kaiyuan Instruments Co., Ltd.

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Determination of total carbon, hydrogen and nitrogen content in coal - Instrumental method

1 Scope

This standard stimulates method summary of determinating carbon, hydrogen and nitrogen in the coal by instrumental method, reagents and materials, instrument and equipment, determination, calibration, results statement, accuracy, etc. This standard applies to quick determination of carbon, hydrogen and nitrogen in lignite, bituminous coal and anthracite.

2 Normative references

The articles contained in the following documents have become this document when they are quoted herein. For the dated documents so quoted, all the modifications (Including all corrections) or revisions made thereafter shall be applicable to this document.

GB/T 212 Proximate analysis of coal

GB/T 218 Determination of carbon dioxide content in the mineral carbonates associated with coal

GB/T 483 General rules for analytical and testing methods of coal

3 Method summary

A coal sample with known weight burns sufficiently in high temperature and oxygen flow, the carbon, hydrogen and nitrogen in the coal can form carbon dioxide, water and nitrogen/nitrogen oxide mixture. A specific disposal system is used to filter the factors which affect the determination (eg. sulfur, chlorine and other products of combustion), and reduct the nitrogen oxide into nitrogen. The content of carbon, hydrogen and nitrogen in the coal is quantitative determined by a specific detection system in the form of carbon dioxide, water vapor and nitrogen.

4 Reagents and materials

4.1 Carrier gas: Choose the specified helium or other suitable gas in the instrument specifications.

4.2 Oxygen: Choose the specified oxygen in the instrument specifications.

4.3 Reagents: Choose the specified reagent in the instrument specifications.

4.4 Calibration substance: standard reagent. Dry it until the mass is constant before using. Calibration substance given in table 1 is recommended.

Note 1: Certified coal standard substance can be used in the calibration of hydrogen and nitrogen in the coal.

Note 2: Benzoic acid is not suitable for material calibration.

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