

ICS 75.160.30

CCS P45



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

GB/T 12208-2008

Replacing GB/T 12209.1-1990

**Test methods of components and impurities of the
manufactured gas**

人工煤气组分与杂质含量测定方法

Issued on: November 4, 2008

Implemented on: June 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

This standard replaces GB/T 12208-1990 "Determination of city gas and dust in the tar content", GB/T 12209.1-1990 "Determination of naphthalene of gas in urban picric acid method", GB/T 12209.2-1990 "Determination of naphthalene of gas in urban gas chromatography" GB/T 12210-1990 "Determination of ammonia gas in urban" and GB/T 12211-1990 "Determination of hydrogen sulfide gas in urban area." This standard and GB/T 12208-1990, GB/T 12209.1-1990, GB/T 12209.2-1990, GB/T 12210-1990 And GB/T 12211-1990 compared to the main changes are as follows:

- Standard name was changed to "Determination of gas composition and impurity content";
- Increasing the chemical analysis of the content of the gas composition;
- Increased Calculation result digits after the decimal point;
- Increased the determination of hydrogen sulfide content Iodimetry reaction;
- Modified artificial gas impurities in the sample position;
- Modify the content of artificial gas and ammonia titration precision;
- Remove the artificial hydrogen sulfide gas analysis methods lead acid dipstick;
- Added Appendix A "sample volume converted to standard state of the formula" and Appendix B "test report." Appendix A of this standard is a normative appendix; Appendix B

is an informative annex. The standard proposed by the Ministry of Housing and Urban-Rural Development of the People's Republic of China. This standard by the Ministry of Construction of housing and urban-rural town gas standard technical focal North China Municipal Engineering Design and Research Institute. This standard drafting units. China North China Municipal Engineering Design Institute, Taiyuan City Gas Company, Guangzhou Devotion Domestic Boilers Manufacturing has Limited, Shanghai Gas Group, national gas appliances Quality Supervision and Inspection Center. The main drafters of this standard. Juan, Shu Yongjuan, Xu Wei, Zhou Xiaomin, drainage red. This standard replaces the standards previously issued as follows:

- GB/T 12208-1990;
- GB/T 12209.1-1990;
- GB/T 12209.2-1990;
- GB/T 12210-1990;
- GB/T 12211-1990. Gas composition and method for the determination of impurities

1 Scope

GB/T 12208-2008 is the Chinese national standard on test methods of components and impurities of the manufactured gas, in the field of petroleum and related technologies. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 4 November 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 June 2009. Classification: ICS 75.160.30, CCS P45. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the scope of analysis of city gas component in artificial gas and dust and tar, naphthalene, ammonia, hydrogen sulfide and other impurities, Principle, reagents and materials, equipment, sampling, analysis, calculation and precision of the results and other requirements. This standard applies to the analysis of the gas composition and impurities GB/T 13611 requirements. Natural gas methane (6T) components GB/T 13611 stipulated analyze gas composition may refer to a chemical analysis method is executed.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard. Preparation of

GB/T 601-2002 Chemical Reagent standard titration solution

GB/T 603-2002 Chemical Reagent Test Methods - Preparations with

GB/T 13611 Classification and essential property of city gas 3-component chemical formula

The standard analysis component chemical formula expressed as follows:

--- Total content of acid gases. CO₂ to represent;

--- Total unsaturated hydrocarbon gas content. The C-shaped m1 represents H; The total content

--- alkane gases. CH₄ in representation;

--- Total content of inert gas. N₂ in Fig. Methods for chemical analysis of the gas composition 4

4.1 Principle Determination of carbon dioxide (CO₂) by direct absorption method, an unsaturated hydrocarbon (C H-shaped m1), oxygen (O₂) and carbon monoxide (CO) content; the remaining combustible Plus oxygen gas explosion, according to the results of the reaction, the calculation of methane (CH₄) and hydrogen (H₂) content; an inert gas (N₂) was detected by the subtraction method Obtained.

4.2 Scheme

4.2.1 Potassium hydroxide solution to absorb carbon dioxide and acid gases. CO₂ + 2KOH
K₂CO₃ + H₂O Alkaline solution

4.2.2 pyrogallol (Coke sexual gallic acid) absorbs oxygen. C₆H₃ (OH) 3+ -> 3KOH C₆H₃ (OK) 3 + 3H₂O 2C₆H₃ (OK) 3 + 1/2O -> 2 C₁₂H₄ (OK) 3 + H₂O Absorption

4.2.3 oleum unsaturated hydrocarbon (C H-shaped m1), such as C₂H₄, C₆H₆. C₂H₄ + H₂SO₄ · SO -> 3 C₂H₆S₂O₇ (vinyl sulfonic acid) C₆H₆ + H₂SO₄ · SO -> 3 C₆H₆SO₃ (acid) + H₂SO₄

4.2.4 ammoniacal cuprous chloride solution to absorb carbon monoxide. Cu₂Cl₂ + 2CO
Cu₂Cl₂ · 2CO Cu₂Cl₂ · 2CO + 4NH₃ + 2H₂ -> O 2NH₄Cl + Cu₂ · 2COONH₄