



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

**中华人民共和国国家标准**

GB/T 16157-1996

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**The determination of particulates and sampling  
methods of gaseous pollutants emitted from  
exhaust gas of stationary source**

**固定污染源排气中颗粒物测定与气态污染  
物采样方法**

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**Issued on January 12, 1996**

**Implemented on March 06, 1996**

**Issued by Chinese State Environmental Protection Administration**

## **Preface**

This Standard is drawn up for the purpose of implementing the national and local standards for emission of atmospheric pollutants and normalizing the monitoring and especially the sampling methods of the organized emission from stationary sources.

The determination of particulates as described in this Standard includes sampling, determination and calculation, which shall be followed in normal cases for monitoring of stationary sources unless otherwise specified in relevant emission standards or analysis method standards. For example, the stipulations otherwise set forth in the emission standard for thermal power plants and in the analysis method standard for chrome (sulfuric) acid mist, lead (or other metals) and their compounds, etc., shall also be observed. As the monitoring of gaseous pollutant emission is quite complicated, the stipulations concerning sampling in this Standard shall be deemed as general requirements and those specific stipulations in relevant emission standards and standards for gaseous pollutants analysis methods shall also be observed for sampling.

This Standard does not specifically cover the operating conditions for and frequency of stationary source completion acceptance monitoring and routine supervisory monitoring. Relevant emission standards, monitoring codes, as well as regulations on completion acceptance monitoring of construction projects by the National Environmental Protection Administration shall also be referred to for actual monitoring.

Since the operating condition requirements for boiler emission monitoring are stipulated in the flue dust test method instead of the emission standard, GB 5468-91 Test Method of Boiler Flue Dust will remain in effect even though this Standard is approved and issued. But it may not be deemed that any contradictions exist between this Standard and the said Test Method. This Standard may still be referred to for any unclear matters in addition to observance of the said stipulations during actual monitoring. Moreover, GB 9078-88 Test Method of Industrial Kiln Flue Dust is included in this Standard.

GB 9078-88 Test Method of Industrial Kiln flue dust will become avoided as of the implementation date of this Standard.

The General Environmental Monitoring Station of China is authorized for interpretation of this Standard.

This Standard is proposed by the Scientific & Technical Standard Section under the National Environmental Protection Administration.

The Environmental Sanitation & Sanitation Engineering Research Institute under the Academy of Prophylactic Medical Sciences is responsible for drafting of this Standard.

The main drafters of this Standard are: Liu Guangquan, Chang Dehua, Zhou Yangsheng, Zhou Guangfa and Liu Jiang.

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# National Standard of People's Republic of China

## Determination of Particulates

### And Sampling Methods of Gaseous Pollutants

#### Emitted from Exhaust Gas of Stationary Source

GB/T 16157-1996

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#### 1 Subject content and applicable scope

1.1 This standard provides the determination methods of particulates and sampling methods of gaseous pollutants emitted from exhaust gas of such stationary sources as flue ducts, chimneys and gas exhaust cylinders (called as the "flue duct" hereafter), etc.

1.2 This standard applies to the determination of particulates and sampling of gaseous pollutants emitted from exhaust gas of various boilers, industrial kilns and other stationary pollution sources.

#### 2 Definitions

##### 2.1 Particulates

Particulates mean the solid and liquid particulate matters suspending in the exhaust gas that are generated during combustion, composition or decomposition of fuel and other substances or during mechanical treatment of various materials.

##### 2.2 Gaseous pollutants

Gaseous pollutants mean various pollutants in gaseous state dispersed in the exhaust gas.

##### 2.3 Dry exhaust gas under standard conditions

Dry exhaust gas under standard conditions mean the exhaust gas containing no moisture at the temperature of 273K and the pressure of 101,300Pa.

#### 3 Determination and calculation items

3.1 Determination of the exhaust gas parameters (temperature, pressure, moisture content and composition).

3.2 Calculation of the exhaust gas density and gas molecular weight.

3.3 Determination of the flow velocity and flow of the exhaust gas.

3.4 Determination of particulates emitted from the exhaust gas and calculation of the emission concentration and emission rate.

3.5 Sampling of gaseous pollutants emitted from the exhaust gas and calculation of the emission concentration and emission rate.

#### 4 Basic sampling requirements

##### 4.1 Sampling conditions

Sampling shall be conducted under normal operating conditions of the equipment in service, or determination shall be made under the specified operating conditions in accordance with relevant pollutant emission standards.



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