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

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Hygienic standard for inhalable particulate matter in indoor air

室内空气中可吸入颗粒物卫生标准

(English Translation)

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Foreword

Urban and rural residents spend 70% of their time indoors, therefore the quality of the indoor air is closely related to their health. The formulating staffs prepared this standard on the base of the scientific achievements (data) in the indoor air pollution and health effect of urban and rural residents in China, by reference to the hygienic standard for inhalable particles in ambient air of residential areas specified in GB 11667-89. This standard adopts the relevant requirements on the grain size specified in GB 11667-89 "Hygienic Standard for Inhalable Particles in Ambient Air of Residential Areas". The average concentration value hereof is determined according to the current concentration level, toxicity, and possibility in China. The daily average maximum allowable concentration stated by this standard is based on the human health hazard level, and specified relatively strictly, but thus value target can be reached with efforts, and enforced gradually.

This standard was implemented on December 1, 1998.

Appendix A in this standard is normative.

This standard was proposed by the Ministry of Health of the People's Republic of China.

The Environmental Health and Sanitary Engineering Institute of the China Academy of Preventive Medicine is responsible for drafting this standard.

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The technical jurisdiction department Chinese Academy of Preventive Medicine, entrusted by Ministry of Public Health, is in charge of the interpretation of this standard.

Hygienic Standard for Inhalable Particulate Matter in Indoor Air

1 Scope

This standard specifies the requirements on daily average maximum allowable concentration and sampler for inhalable particulate matter in indoor air.

This standard is applicable to monitoring and evaluating the indoor air but productive indoor environment.

2 Definitions

For the purposes of this standard, the following definitions apply.

2.1 Inhalable particulate matter

It refers to particulate with a mass median diameter of $10\mu\text{m}$ ($D_{50}=10\mu\text{m}$) that can access to respiratory tract.

2.2 Aerodynamic diameter

It refers to the diameter of the particulate with same end fall rate with the unit density bulb in low-Reynolds-number gas flow.

3 Sanitary Requirements

The daily average maximum allowable concentration of inhalable particulate matter in indoor air is 0.15 mg/m^3 , and the mass median diameter is $10\mu\text{m}$.

4 Supervision and inspection

4.1

Sampler

$D_{50}\leq 10\pm 1\mu\text{m}$; geometrical standard deviation $\text{deltag}=1.5\pm 0.1$.

4.2

The method for determination of inhalable particulate matter in indoor air is detailed in Appendix A (Normative).

Appendix A

(Normative)

Method for Determination of Inhalable Particulate Matter in Indoor Air -Impacting Weighting Method A1 Principle Collect the particulates with a size of larger than or equal to $10\mu\text{m}$ with a two-section inhalable particulate matter sampler ($D_{50}=10\mu\text{m}$, $\text{deltag}=1.5$) at a flow rate of 13 L/min , to the glass fibre filter on the impact plate; collect the particulates with a size of smaller than or equal to $10\mu\text{m}$ onto a glass fibre filter of constant weight; weigh the mass of

the particulates, divide the mass of the particulates with a size of $10\mu\text{m}$ by the sampling standard volume, leaving the concentration of the inhalable particulate matter. The inspection lower limit is 0.05 mg.

A2 Instrument

A2.1 Inhalable particulate matter sampler: $D_{50} \leq 10 \pm 1\mu\text{m}$, geometrical standard deviation $\text{deltag} = 1.5 \pm 0.1$.

A2.2 Balance: 1/10000 or 1/100000.

A2.3 Soap-film flowmeter.

A2.4 Stopwatch.

A2.5 Glass fibre filter: 50mm in diameter; 53mm in external-cycle diameter or 40mm in inner-cycle diameter.

A2.6 Dryer.

A2.7 Tweezers.

A3 Flowmeter Calibration Calibrate the sampler flowmeter with the soap-film flowmeter; connect the flowmeter, the soap-film meter and the air pump as shown in Figure A1 and conduct the calibration; record the volume (mL) and the passing time of the soap-film meter between two scales; convert the above volume to the volume (V_s) under the normal condition according to Formula (A1); and draw the flow-scale curve (figure).