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

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**Technical specifications for health risk assessment of ambient
air pollution
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was drafted. China Center for Disease Control and Prevention,

Environmental and Health Related Product Safety Institute, Sichuan Provincial Center for Disease Control and Prevention, Jiangsu Provincial Center for Disease Control and Prevention.

1 Scope

This standard specifies the basic principles, work processes, assessment methods and requirements for assessment of health risks of air pollution, and the application of assessment results.

Use and evaluate the reporting framework. Health risk assessment method based on population characteristics data is applicable to available population surveillance data and epidemiological data. Under the circumstances, a population health risk assessment based on population exposure characteristics and epidemiological data was conducted. People based on atmospheric toxicity data Group health risk assessment methods are applicable to the lack of population surveillance data and epidemiological data.

Sexual health risk assessment.

This code is applicable to the health risk assessment of air polluted people at the local, regional and national levels.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article. For undated references, the latest version (including all amendments) applies to this document.

GB 3095 Ambient Air Quality Standard HJ2.2 Technical Guidelines for Environmental Impact Assessment-Atmospheric Environment HJ664 Technical Specification for Ambient Air Quality Monitoring Location WHO.2016 Health risk assessment of air pollution - general principles. Copenhagen. WHO Regional Office for Europe; 2016 (Health Risk Assessment of Air Pollution-General Principles. Copenhagen, World Health Organization Europe Office, 2016)

EPA/630/P-03/001 Guidelines for Carcinogen Risk Assessment (Carcinogen Risk Assessment Guide, US Environmental Protection Agency)

3 Terms and definitions

The following terms and definitions apply to this document.

Exposure

Human exposure to air pollutants through the respiratory tract.

Population characteristics Including the characteristics of population exposure, demographic characteristics, and health effects of air pollution exposure on the population.

Health risk

Also known as the degree of danger, that is, under certain exposure conditions, an air pollutant can cause human health hazards, toxic effects, and disease the probability of illness or even death, or the expected frequency of adverse effects from exposure to atmospheric pollutants.

Health risk assessment; HRA the process of comprehensive qualitative and quantitative assessment of the harmful health effects of atmospheric pollutants on specific populations according to certain criteria.

Hazard identification Through a thorough analysis of epidemiological and toxicological research data, it is determined whether atmospheric pollutants will produce healthy health under certain exposure conditions.

Characteristics of health hazards and harmful effects.

Exposure-response assessment an assessment of the relationship between a population's exposure to atmospheric pollutants and the incidence or severity of certain health effects.

Exposure assessment

Characteristics of exposure to specific pollutants (including exposure concentration, time, frequency, etc.) and characteristics of the exposed population (including population age, sex Specific, susceptibility, etc.).

Risk characterization According to certain principles and quantitative calculation methods, the response probability or expected hazard course to the health effects of exposed people caused by an air pollutant Degrees of probability for estimation and prediction.

Cut-off value

Baseline levels of air pollutant concentrations set in conducting health risk assessments.

3.10

Reference concentration; RfC People (including sensitive subpopulations) are exposed to a certain type of air pollutants throughout their lives and are expected to have a risk of non-carcinogenic or non-mutagenic harmful effects Low to undetectable concentrations.

3.11

Hazard quotient HQ

The ratio of the human body's intake of air pollutants through the inhalation route to the reference concentration.

3.12

Hazard index; HI

After experiencing different types of microenvironments, such as indoor, outdoor, work environment, and living environment, the population is exposed to various microenvironments.

The exposure route is the sum of the hazards of exposure to a single non-carcinogenic atmospheric pollutant.

3.13

Inhalation unit risk; IUR Exposure to a specific concentration of atmospheric carcinogens through the respiratory tract continuously increases the risk of cancer throughout the life cycle.

3.14

Excess carcinogenic risk the probability that a population will be exposed to a carcinogenic effect pollutant, causing a carcinogenic disease or injury.

3.15

Screening concentration Under certain conditions, a certain air pollutant with carcinogenic or non-carcinogenic effects is calculated according to a specific carcinogenic risk or hazard the corresponding concentration obtained.

3.16

Relative risk; RR

The ratio of the incidence of the same health effect in two different exposure situations, that is, the ratio of the risk of the exposed group to the risk of the control group.

3.17

Meta-analysis

A statistical method for quantitatively combining the results of multiple related studies to obtain an average result representative of those studies.

3.18

Life expectancy

It refers to the number of years that a person of an age is expected to survive, and is the main indicator for evaluating the health status of residents.

3.19

Burden of disease