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

GB/T 21605-2025

Replacing GB/T 21605-2008

Chemicals - Test method of acute inhalation toxicity

化学品 急性吸入毒性试验方法

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document supersedes GB/T 21605-2008 "Test Methods for Acute Inhalation Toxicity of Chemicals" and is consistent with GB/T 21605-2008.

Aside from structural adjustments and editorial changes, the main technical changes are as follows.

- The chapter on "Scope" has been revised (see Chapter 1, Chapter 1 of the 2008 edition);
- Terminology and definitions have been revised (see Chapter 3, Chapter 2 of the 2008 edition);
- Added evaluation of whether the test substance can be absorbed through the respiratory tract (see Chapter 4);
- Added the principles of pre-experiment data collection and analysis, and the traditional LC50 method and concentration-time method (see Chapter 5);
- Added exposure condition monitoring (see 6.6), removed the static exposure method (see 5.3.1 in the 2008 version), and changed the dynamic exposure method.

Compared to the traditional LC50 method and concentration-time method (see 6.7, 5.3.2 in the 2008 edition), clinical observation, weight monitoring, and pathological studies have been added. Check (see 6.8);

- The section on "Experimental Data and Reporting" has been revised (see Chapter 7, 5.5, Chapter 6, and Chapter 7 of the 2008 edition);

- A "concentration-time method" has been added (see Appendix A).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Hazardous Chemicals Management (SAC/TC251).

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The release history of this document and the document it replaces is as follows.

- First published in 2008 as GB/T 21605-2008;

- This is the first revision.

1 Scope

This document describes the methods for testing the acute inhalation toxicity of chemicals.

This document applies to acute inhalation toxicity testing of chemicals.

2 Normative references

GB 14925

3 Terms and Definitions

The following definitions and terms apply to this document.

3.1 Health damage effects (or particulate matter)

Laboratory animals inhale a certain concentration of the test substance (gas, vapor, aerosol) continuously within a short period of time (24 hours or less).

3.2 Inhaled dose of inhaleddose

The amount of test substance inhaled per unit body weight of laboratory animal.

3.3

The statistical significance of a toxicant that causes half the deaths in a group of experimental animals after a single continuous inhalation of the test substance within a specified time. concentration.

Note. The test substance is expressed as the mass (mg/m³ or mg/L) or volume fraction (e.g., 10⁻⁶/10⁻⁹) of a unit volume of air.

3.4

In an aerosol sample composed of particles of varying aerodynamic diameters, particles smaller than or equal to a certain aerodynamic diameter...

The aerodynamic diameter of aerosol particles when they account for 50% of the total mass or weight of the aerosol sample.

3.5

A dimensionless number used to describe the range of aerosol particle sizes.

Note. The smaller the geometric standard deviation, the higher the proportion of particles of similar size, meaning better uniformity and lower dispersion of aerosol particles. A smaller geometric standard deviation...

Aerosol samples with a value of 2 or greater are called single-phase dispersed aerosols.

3.6 Dose-response relationship

The relationship between dose and the incidence of specific effects.