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PEOPLE'S REPUBLIC OF CHINA**

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Particle size distribution/fibre length and diameter distributions

颗粒物粒度分布/纤维长度和直径分布

(English Translation)

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Foreword

This standard is equivalent to using the United Nations Organisation for Economic Co-operation and Development "OECD Guidelines for the Testing of Chemicals" 1101981, chemical testing methods "Particle size distribution/fiber length and diameter distribution method A. particle size distribution (effective hydrodynamic radius); Method B. Fiber the length and diameter distribution "(in English).

For ease of use, this standard has been modified following editorial.

- "." A) the original title of the chapter numbering standard after removed;
b) use punctuation instead of the original period indicated by the standard. ""'. ""';
c) Note by the formula symbol in the symbol "---" instead of the "=". Appendix A of this standard is the data appendix.

This standard is managed by the National Standardization Technical Committee chemicals dangerous (SAC/TC251) and focal points.

Participated in the drafting of this standard. the Chemical Institute of Standardization, Jiangxi Exit Inspection and Quarantine, Chinese Academy of Inspection and Quarantine.

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This standard is the first release.

Introduction

Many methods can be used to measure the particle size, but no single method is applicable to all particle size ranges, commonly used screening technology, micro-Shen Drop testing, panning. In addition, atmospheric particulate matter (dust, soot, smoke), radiation scattering and inertial especially useful. Should choose Sample test substance (Method A) suitable sampling procedure to prepare a typical representative.

The first method (Method A) described in this standard is intended to provide a

water-insoluble particulate matter data migration and settlement in water and air.

For some special cases substance capable of forming a fiber, it is recommended to use another test method (Method B) to identify its intake by inhalation or orally the potential health hazards caused.

A common method is commonly used, method hydrodynamic properties; Method B is relatively special, rarely used, and the need to use microscopy Mirror test. However, it should be borne in mind that the original particle size distribution depends largely on the industrial processing methods used and by subsequent Environmental changes and human transformation of.

These test methods apply only to water insoluble (water-soluble less than 10-6g/L). By optical microscopy and found similar fibers known when Victoria substance or substances, or other material capable of releasing fibers may show the presence of fiber material, only the use of B. In this context Next, the fiber is insoluble in water, its aspect ratio (ratio of length to diameter) of greater than or equal to 3 and a diameter of less than or equal to 100µm. length Regardless of the fiber is less than 5µm. As a test effective hydrodynamic radius (RS) method A, without preliminary test, the test fiber and non-fibrous particles are applicable, but only for 2µm 1 Scope this standard specifies the particle size distribution/fiber length and diameter distribution measurement method.

A and B are two methods can be used pure or commercial products.

A method for determination of particle size distribution (effective hydrodynamic radius), applies only to insoluble in water (less than 10-6g/L) of powdered product.

Method B Determination of fiber length and diameter distribution, only for fibrous products. Should consider the impact of particle shape impure brought.

Guidance information. Method A --- melting point; Method B --- melting point.

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.

ANSI-C690-75 Colt count ASTM-D422 Standard Test Method for solid particle size analysis [63 (2002)] DIN-66115 particle size analysis in the gravitational field of the sedimentation analysis pipette method DIN-66116, Part 1 size analysis sedimentation analysis in the gravitational field of deposit balance NF-T30-044 coating paints - Determination of particle size distribution "ANDREASEN" thin tube method

3 Terms and Definitions

The following terms and definitions apply to this standard.

A method meaningful parameters in the viscous fluid, under the influence of gravity sedimentation rate of the spheres is given by the following formula.

Where.

Vp --- speed in meters per second (m/s);

RS --- Stoke radius in meters (m);

eta --- liquid dynamic viscosity, in units of Pa s (bovine seconds per square meter) [Pa · s (N · s/m²)].

In other occasions it has a similar relationship. The size of the particles is usually micrometer (10-6m) measurements.

Figures 1 and 2 is a typical graph.