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

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**Particle size analysis -- Sedimentation analysis in the
gravitational field -- Pipette method**

粒度分析 重力场中沉降分析 吸液管法

(English Translation)

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Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Principles and Methods Description
- 3.1 Principle

Foreword

This standard is identical with DIN66115. 1983 "sedimentation particle size analysis of the gravitational field analysis pipette Law" (in German).

For ease of use, this standard, the following editorial changes.

- Information about the standard editing instructions of the preamble;
- With a decimal point instead of a comma as the decimal point, "";
- Renumbered;
- Renumbered comment;
- Dynamic viscosity units to mPa · s, and the number of related equations were modified;
- Based on other standards, settling velocity equation symbol equivalent diameter from dS to X;
- Joined the "scope" and "Method Description" and other sections, while some of the text has been edited proofreading;
- Increasing the normative references explanatory preamble;
- The DIN66115. 1983 original German standard "other criteria" classification to "References";
- The DIN66115. 1983 original German standard "evaluation case" categorized as "Appendix A";
- The DIN66115. 1983 original German standard "formula symbol" classification to "Appendix B".

Appendix B of this standard is a normative appendix, Appendix A is an information appendix.

This standard is managed by the National Standardization Technical Committee chemicals

dangerous (SAC/TC251) and focal points.

This standard was drafted. Guangdong Entry-Exit Inspection and Quarantine of Liaoning.

1 Scope

This standard specifies the use of the gravitational field of settlement analysis - pipette method particle size analysis method.

This standard applies to regulations pipette Measurement dispersed in the liquid accumulated solids particle size distribution curve (in line with DIN66141 be), the settling velocity of the pipette device used equivalent diameter in the range of $1\mu\text{m} \sim 250\mu\text{m}$.

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.

DIN323 Part 1 standard and the main value of the standard number of coefficients, the exact value, rounding value DIN12242 Part 1 for laboratory glassware can be replaced with a conical ground joint specification error connected DIN12336 laboratory glassware flat evaporating dish DIN12553 laboratory glassware with a tapered leading bidirectional parallel drilling Capacity DIN12690 laboratory glassware marked by pipette Class A and Class B DIN66111 particle size analysis of the gravitational field analysis theory Settlement Describe the principles of particle size analysis DIN66141

3.1 Principle

Pipette apparatus shown in FIG. 1 (also referred to as "straw Andresen type" [1]) of the settling tank by a liquid-absorbent and sampling tubes. be usable the instrument used to measure the concentration of suspended solids in the settling tank above the bottom of the measuring plane. The measured concentration and diffusivity D Suitably proportioned. Particle size distribution curve can be obtained directly in the form of settling velocity function; it is calculated, or by some kind of settlement Was, in the still liquid dispersion of solid matter [1] - [6] sedimentation rate equivalent diameter X .

Experimenter in accordance with pre-established timetable, lessons sample dispersion volume V_p from the measurement plane, and by evaporating liquid sedimentation methods Mass concentration C_{m1} , $m_1 = 0$ V_0 (the so-called standard sample), the ratio between the two is the diffusivity D .

$$D = C_{m1} C_m, n = 0$$

$m_1 V_0$

$m_1 V_p$

Typically, each of the suction volume of the suspension shift are equal, so $V_0/V_p = 1$, the rate of diffusion.

$D = m_1 m_1 V_0$

If the shift is known suction volume $V_p = V_0$, and the same is known in suspension solids concentration C m_1 , V_0 , m_1 is V_0 may be calculated.

Diffusivity either directly expressed as a function of the settling velocity.

Where.