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

GB/T 21782.8-2025

Replacing GB/T 21782.8-2008

**Coating powders - Part 8: Assessment of the storage stability of
thermosetting powders
(English Translation)**

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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 is Part 8 of GB/T 21782 "Powder Coatings". GB/T 21782 has already published the following parts.

- Powder Coatings Part 1: Determination of Particle Size Distribution by Sieve Analysis;
- Powder Coatings Part 2: Determination of Density by Gas Comparison Hydrometer Method (Arbitration Method);
- Powder Coatings Part 3: Determination of Density by Liquid Displacement Specific Gravity Bottle Method;
- Powder Coatings Part 4: Calculation of the Lower Explosive Limit;
- Powder Coatings Part 5: Determination of the flowability of powder-air mixtures;
- Powder Coatings Part 7: Determination of Mass Loss During Baking;
- Powder Coatings Part 8: Evaluation of Storage Stability of Thermosetting Powders;
- Powder Coatings Part 9: Sampling;
- Powder Coatings Part 10: Determination of Deposition Efficiency;
- Powder Coatings Part 11: Determination of Flowability of Inclined Plates;
- Powder Coatings Part 12: Compatibility Determination;

---Powder Coatings Part 13: Particle Size Analysis by Laser Diffraction;

---Powder Coatings Part 14: Terminology.

This document replaces GB/T 21782.8-2008 "Powder Coatings Part 8: Evaluation of Storage Stability of Thermosetting Powders", and is consistent with...

Compared with GB/T 21782.8-2008, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- a) A "Terms and Definitions" section has been added (see Chapter 3);
- b) The content of the experimental method has been modified to include "data requiring supplementation" (see Chapters 6, 8-10).

Chapter 4 (and Appendices A and B of the 2008 edition);

- c) Pretreated aluminum plates were added as an alternative to test plates (see Chapter 6);
- d) The section "Evaluation of Powder Coatings in Table 1" has been deleted (see section 7.3.1 of the 2008 edition);
- e) The representation of the reaction activity results has been changed from a percentage change in reaction activity to a change in time (see 9.2, 2008 edition).

This document modifies and adopts ISO 8130-8:2021 "Powder coatings - Part 8: Evaluation of storage stability of thermosetting powders".

The following structural adjustments have been made compared to ISO 8130-8:2021.

---Chapter 10 corresponds to Chapter 11 in ISO 8130-8:2021.

The technical differences between this document and ISO 8130-8:2021, and the reasons therefor, are as follows.

---Chapter 5, supplemented with the thickness specifications for "aluminum foil discs" (see 5.6), to make it more practically instructive;

---The section on "Precision" has been removed (see Chapter 10 of ISO 8130-8:2021). ISO 8130-8:2021's statement on precision is as follows.

"Precision data not yet available" is not instructive.

---Chapter 6, GB/T 9271 replaces ISO 1514 with normative reference. GB/T 9271 applies to steel plates, tinplate plates, aluminum plates, the regulations for rigid fiberboard and fiber-reinforced cement board materials have been revised to require them to meet the requirements of current Chinese standards, including grinding.

The sandpaper used in the sample processing method has been changed to sandpaper that conforms to the industry practices in my country;

---Chapter 9, replaces ISO 8130-6 with the normative reference GB/T 16995. GB/T 16995 will reference the standards in the standard.

ISO 8130-9:1992 "Powder coatings - Part 9: Sampling" has been changed to GB 3186-82(89) "Sampling of coating products".

The following editorial changes have been made to this document.

---In Chapter 7, "drawing representative samples of the test products" was changed to "sampling";

---9.3, Add descriptions of appearance differences such as whether there are bubbles or wrinkles.

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).

Introduction

GB/T 21782 covers the testing and evaluation of key indicators for powder coatings, including particle size distribution, density determination, and storage stability.

In GB/T 21782, each part describes a set of tests and applications. GB/T 21782 aims to provide specifications for powder coating manufacturers and powder coating practitioners.

The final coating tester provides a unified and reliable testing process, and offers scientific support for product quality control, safe production, and international trade.

Support. GB/T 21782 is proposed to consist of 13 parts.

---Part 1: Determination of Particle Size Distribution by Sieving Method. The purpose is to specify the use of both manual and mechanical sieving methods for determining particle size distribution in powders.

Coating particle size distribution.

---Part 2: Determination of Density by Gas Comparison Hydrometer Method (Arbitration Method). The purpose is to define the method for determining density based on the principle of gas displacement, using gas...

A comparative method for determining the density of powder coatings using a specific gravity meter.

---Part 3: Determination of density using the liquid displacement specific gravity bottle method. The purpose is to define the method for determining density based on Archimedes' principle using the liquid displacement specific gravity bottle method.

A method for determining the density of powder coatings.

---Part 4: Calculation of the Lower Explosive Limit. The purpose is to specify the calculation method for the explosive limit of powder coatings based on the total calorific value or the calorific value of the combustible components.

The method of lower limit.

---Part 5: Determination of the flowability of powder-air mixtures. The aim is to express, by measuring the fluidization factor and powder flow rate, the flowability of powder-air mixtures.

Characterize the flow properties of powder during transport and spraying.

---Part 7: Determination of mass loss during baking. The purpose is to specify the application of powder coatings to substrates using an electrostatic spraying process.

Then, a method for measuring mass loss during the curing and baking process was developed.

---Part 8: Assessment of the Storage Stability of Thermosetting Powders. The aim is to assess the storage stability of thermosetting powder coatings by placing them in a specific storage environment.

Storage stability is assessed by observing changes in free flow properties after the product is stored at a specified temperature for a specified period of time in an environment.

---Part 9: Sampling. The purpose is to define a standard procedure for sampling from the delivery batch and to quantitatively reduce the sample to test specimens.

Technical requirements for the product.

---Part 10: Determination of Deposition Efficiency. The purpose is to specify the deposition efficiency of sprayed coatings on test samples under known spray gun and environmental conditions.

Methods for determining the percentage of powder by mass.

---Part 11: Determination of the flowability of an inclined plate. The purpose is to specify the melting point of thermosetting powder coatings at a fixed angle along an inclined plate.

Methods for detecting the flow characteristics during melting and flow.

---Part 12: Compatibility Testing. The purpose is to determine the surface properties of the final coating resulting from mixing two different powder coatings.

Methods for determining degradation.

---Part 13: Particle Size Analysis by Laser Diffraction. The purpose is to specify the method for determining the equivalent spherical particle size of powder coatings using laser