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Particle size determination of inorganic chemical products -

Sieving method

无机化工产品中粒度的测定 筛分法

(ISO 2926:1974, NEQ)

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Particle size determination of inorganic chemical products - Sieving method

1 Scope

This Standard specifies the methods for the determination of particle size in inorganic chemical products.

This Standard is applicable to the determination of particle size in inorganic chemical products with a particle size larger than 45 μm and are non-hygroscopic or insoluble in water.

2 Normative references

The following documents contain the provisions which, through reference in this Standard, become the provisions of this Standard. For dated references, their subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB/T 6003.1-1997 Test sieves of metal wire cloth (eqv ISO 3310.1:1990)

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1

hand sieving method

A sieving method in which the test sieve is vibrated back and forth by hand, the test sieve is gently collided with the other hand at the amplitude distance, and the resulting vibration causes the particles smaller than the hole size to pass through the sieve holes.

3.2

mechanical sieving method

A sieving method in which the test sieve is installed on a vibrating sieving machine, and the test sieve is vibrated by the vibrating machine.

6 Analysis procedure

6.1 Assemble the test sieves of the specified size in order to increase sieve holes from the bottom to the top.

6.2 Weigh 20.0 g ~ 50.0 g of sample with a balance, to the nearest 0.02 g. Put it on the test sieve at the top and close the top cover.

6.3 Determination

6.3.1 Hand sieving method

Carry out the test through vibration by hand. The amplitude is about 0.1 m, the frequency is about 120 times/min, and the sieving duration is 3 min ~ 5 min. Let it stand for 3 min, and weigh the sieve residue of each sieve or under each sieve. The determination method is according to 6.4.

6.3.2 Mechanical sieving method

Install the test sieve containing the sample on the vibrating sieving machine, of which the amplitude is 2 mm, the frequency is 120 times/min, and the vibration duration is 5 min. Let it stand for 3 min, and weigh the sieve residue.

6.3.3 Brush sieving method

Put the sample on the test sieve, and brush repeatedly with a wool brush until there is no trace of the sample on the black backing paper. Let it stand for 3 min, and weigh the sieve residue. The determination method is according to 6.4.

6.3.4 Wet sieving method

Put the sample on the test sieve, repeatedly rinse with water or immerse it in water, and brush repeatedly with a wool brush until the sample does not flow out in the rinse water. Let it stand for 3 min, place the test sieve in an electric oven at $(105 \pm 2) ^\circ\text{C}$ to dry until the mass is constant, and weigh the sieve residue to the nearest 0.0002 g.

6.4 The sieving process shall be continued until the mass fraction of the sample passing through the test sieve with the largest remaining particle size class within 1 min is less than 0.1 %. Carefully brush the sample left on each sieve and the bottom plate with a brush, and weigh the sieve residues (m_1) of the test sieves of each particle size class, respectively. The difference between the sum of the amount of all sieve residues and the weighed sample amount shall not be greater than 1.5 %, otherwise, re-sample for determination.

6.5 After each determination, use ultrasonic to clean the whole set of sieves to ensure that the clogging of the test sieves is not greater than 1.0 %.

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