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**Chemical products for industrial use - General method
for determination of water content - The loss of mass
on drying method**

化工产品中水分测定的通用方法 干燥减量法

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Chemical products for industrial use - General method for determination of water content - The loss of mass on drying method

1 Scope

This standard specifies a general method for the determination of moisture in solid chemical products - The loss of mass on drying method.

This method is suitable for the determination of moisture in solid chemical products, which are stable in heating.

2 Terms and definitions

The following terms and definitions apply to this standard.

2.1

The loss of mass on drying method

A method of reducing the mass of solid substances, by completely volatilizing the volatile substances, including water, from solid products, through heating.

Note: When using the loss of mass on drying method, to determine the true moisture in the product, it shall meet the following three conditions:

- ① All that is volatile is water;
- ② There is no chemical change, OR although there is a chemical change, it is not accompanied by a mass change;
- ③ Moisture can be completely removed.

In fact, it is very difficult to fully satisfy the above three conditions, in most conditions. Therefore, when the loss of mass on drying method is used to determine moisture, volatile substances, other than moisture OR volatile substances as generated during the chemical change in the heating process, are also considered as moisture.

2.2

Heating to stabilization

During the heating process of the sample, volatile substances other than moisture OR volatile substances as generated by chemical changes, are within the allowable range, that is to say, the volatile substances, which are produced, do not affect the accuracy of the moisture determination results.

2.3

Constant weight

After repeated drying, until the mass difference between the two weighed results is greater than 0.0003 g, it is regarded as constant weight.

3 Test method

3.1 Summary of method

Heat and dry the sample at $(105 \pm 2) ^\circ\text{C}$, to a constant weight. Calculate the reduced mass of the sample, after drying.

3.2 Instrument and equipment

3.2.1 Weighing bottle: Flat-shaped with lid; the capacity is that, after adding the specimen, the thickness of the specimen is less than 5 mm;

3.2.2 Electric heating constant temperature drying oven: The temperature can be controlled at $105 ^\circ\text{C}$, at an accuracy of $\pm 1 ^\circ\text{C}$;

3.2.3 Desiccator: It contains appropriate desiccant (such as color-changing silica gel, phosphorus pentoxide, etc.);

3.2.4 Balance: Photoelectric analytical balance or electronic balance, which has a division value of 0.1 mg.

3.3 Specimen processing

If the specimen is a block or large crystal, it shall be crushed to a particle size of less than 2 mm AND mixed thoroughly. During the operation, avoid the loss of moisture in the specimen or the absorption of moisture from the air.

3.4 Analytical procedures

Adjust the electric heating thermostat to $(105 \pm 2) ^\circ\text{C}$. Then put the weighing bottle in the electric heating thermostat, to dry it. Take it out. Cool it in the dryer [cooling time is generally (20 ~ 40) min; the cooling time of repeated operation must be the same]. Weigh it, accurate to 0.1 mg. Repeat the operation to constant weight.

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