

Translated English of Chinese Standard: GB28308-2012

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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

GB 28308

National Food Safety Standard – Food Additive – Vegetable Carbon Black

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Annex A

Test Methods

A.1 General

Unless specified otherwise, all reagents used for this Standard are analytically pure reagents and the water is water grade 3 specified in GB/T 6682-2008. Unless specified otherwise, the standard titration solutions used for this Standard and the standard solutions, preparations and products used for the determination of impurities shall be prepared in accordance with GB/T 601, GB/T 602 and GB/T 603. The solutions used in the test refers to aqueous solutions when the solvent is not indicated for the preparation.

A.2 Identification test

A.2.1 Solubility test

Weigh 0.1 g of sample; add 100 mL of water; shake up and allow to stand for 10 min. The solution shall show no colour.

Weigh 0.1 g of sample; add 100 mL of cyclohexane; shake up and allow to stand for 10 min. The solution shall show no colour.

A.2.2 Burning test

Heat sample slowly to red without direct firing.

A.3 Determination of loss on drying

A.3.1 Apparatus

A.3.1.1 Weighing bottle: Φ 30 mm ~ 40 mm.

A.3.1.2 Constant temperature drying oven.

A.3.2 Analytical procedure

Weigh about 2 g of sample, accurate to 0.000 1 g; place in a constant weighing bottle in a constant temperature drying oven at $120^{\circ}\text{C} \pm 2^{\circ}\text{C}$; dry in the constant drying oven at $120^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 4 h; take out sample and cool in a desiccator to room temperature.

A.3.3 Calculation of results

Loss on drying is calculated by mass fraction w_1 ; the value is expressed in %; it is calculated in accordance with Formula A.1:

A.5.1 Apparatus

A.5.1.1 Porcelain crucible: 30 mL.

A.5.1.2 High-temperature electric furnace.

A.5.2 Analytical procedure

Weigh about 1 g of sample, accurate to 0.000 1 g; place in a crucible burned to constant weight at 625°C ± 20°C. Place the crucible into a high-temperature electric furnace at temperature not exceeding 300°C; open the crucible cover; increase temperature gradually; ash to constant weight at 625°C ± 20°C.

A.5.3 Ash content is calculated by mass fraction w_3 ; the value is expressed in %; it is calculated in accordance with Formula A.3:

$$w_3 = \frac{m_5}{m_4} \times 100\% \quad \dots\dots\dots (A.3)$$

where,

m_4 — the value of ash mass, in g;

m_5 — the value of sample mass, in g.

The test result is subjected to the arithmetic mean of parallel determination results. The ratio of the absolute difference obtained from two independent determination results under repeatable conditions to the arithmetic mean value is not greater than 5%.

A.6 Determination of alkali soluble colour pigments

A.6.1 Reagents and materials

Sodium hydroxide solution: 1 mol/L.

A.6.2 Analytical procedure

Weigh about 2 g of sample, accurate to 0.000 1 g; place in a 100 mL conical flask; add 20 mL of sodium hydroxide solution; heat slowly to boiling; filter after cooling. The filtrate shall show no colour, i.e. it passes the test.

A.7 Determination of higher aromatic hydrocarbon

A.7.1 Reagents and materials

A.7.1.1 Cyclohexane.

A.7.1.2 Quinine sulfate.

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