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**Super fine powder fire extinguishing agent  
(English Translation)**

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### 1 Scope

This standard specifies the definition, classification, requirements, test methods, inspection rules, labeling, packaging, transportation, and storage of super fine powder fire extinguishing agents.

This standard applies to BC super fine powder fire extinguishing agent and ABC super fine powder fire extinguishing agent.

## 2 Normative references

The provisions in the following documents become the provisions of this standard through reference in this standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this standard, however, parties who reach an agreement based on this standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies to this standard.

GB/T 3864-1996 Industrial nitrogen

GB 4066(all parts) Powder extinguishing agent

GB 4351 General specifications for portable fire extinguishers (neq ISO 7165:1995)

GB/T 4509-1998 Bitumen - Determination of penetration (eqv ASTM D5-95)

SH 0004-1990 Solvent oil for the rubber industry

## 3 Terms and definitions

The terms and definitions defined in GB 4066 (all parts) and the followings apply to this standard.

### 3.1 90% grain diameter

The mass percentage of particles that is less than or equal to a certain particle size is 90%, then this particle size is called 90% grain diameter.

### 3.2

#### **super fine powder fire extinguishing agent a) Balance**

the sense quantity shall be 0.2 g;

b) Stoppered measuring cylinder: the measurement range shall be 250 mL, and the division value shall be 2.5 mL;

c) Stopwatch: the division value shall be 0.1 s.

### 6.1.2 Test procedure

#### 6.1.2.1

Weigh 35 g of super fine powder fire extinguishing agent sample, accurate to 0.2 g, and place it in a stoppered measuring cylinder.

#### **6.1.2.2**

Turn the measuring cylinder upside down for 10 cycles at a rate of 2 s per cycle.

#### **6.1.2.3**

After letting the stoppered cylinder stand vertically to the horizontal plane for 3 min, record the volume of the sample.

### **6.1.3 Test results**

The bulk density is calculated according to formula (1), and the average value of the two test results with a difference not exceeding 0.04 g/mL is taken as the measurement result:

where:

Db -- bulk density, the unit is gram/milliliter (g/mL);

m0 -- the mass of the super fine powder fire extinguishing agent sample, in grams (g);

V -- the volume occupied by the super fine powder fire extinguishing agent sample, in milliliter (mL).

### **6.2.1 Instruments**

a) Balance: the sense quantity shall be 0.2 mg;

b) Weighing bottle:  $\Phi 50$  mmx30 mm;

c) Desiccator:  $\Phi 220$  mm;

d) Vacuum drying oven: the precision shall be  $\pm 2$  °C,  $\pm 0.002$  MPa.

### **6.2.2 Test procedure**

#### **6.2.2.1**

In the weighing bottle with constant weight, weigh 2 g of super fine powder fire extinguishing agent sample, accurate to 0.2 mg.

#### **6.2.2.2**

Place the weighing bottle without the cap in a vacuum drying oven at a temperature of  $(50 \pm 2)$  °C and a vacuum degree of (0.095-0.096) MPa for 1 h.

#### **6.2.2.3**

Take out the weighing bottle, put the cap on it and place it in a desiccator, let it stand for 15 minutes, and then weigh it with an accuracy of 0.2 mg.

### 6.2.3 Test results

Moisture content  $x_1$  is calculated according to formula (2), and the average value of the two test results with a difference not exceeding 0.02% is taken as the measurement result:

where:

$m_1$  -- the mass of the super fine powder fire extinguishing agent sample before drying, in grams (g);

$m_2$  -- the mass of the super fine powder fire extinguishing agent sample after drying, in grams (g).

### 6.3.1 Reagents, instruments, and equipment

a) Ammonium chloride: chemically pure;

b) Balance: the sense quantity shall be 0.2 mg;

c) Weighing bottle:  $\Phi 50$  mmx30 mm;

d) Desiccator:  $\Phi 220$  mm;

e) Constant temperature and humidity system: a saturated ammonium chloride constant humidity system (used in arbitration inspection) or temperature and humidity regulator; see Figure 1 for the saturated ammonium chloride constant humidity system; the air (humidity is 78%) flowing through the humidistat is controlled at 5 L/min, and the lower part of the humidistat is filled with saturated ammonium chloride solution.

moisture absorption, in grams (g).

### 6.4.1 Reagents and instruments

a) Sodium chloride: chemically pure;

b) Petri dish:  $\Phi 70$  mm;

c) Pipette: 0.5 mL;

d) Desiccator:  $\Phi 220$  mm.

#### 6.4.2.1 Put an excessive amount of super fine powder fire extinguishing agent sample

in the petri dish, and make the surface flat with a scraper.

6.4.2.2 Use a pipette to drop 0.3 mL of distilled water at three different points on the surface of the fire extinguishing agent.

6.4.2.3 Place the petri dish in a desiccator with a temperature of  $(20 \pm 5) ^\circ\text{C}$  and filled with