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MT

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

MT/T 764-1997

**Testing method for performance of form dedusting agent in
coal mine
(English Translation)**

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Table of Contents

1 Scope	1
2 Normative references	1
3 Definition	1
4 Determination method	1

1 Scope 1

2 Normative references 1

3 Definition 1

4 Determination method 1

Method for measuring the performance of mining foam dust remover

1 Scope

This standard specifies the surface tension, wettability of dust, corrosiveness to metal, foaming multiple, foam 50% for mining dust remover.

Method for measuring liquid extraction time and dust removal efficiency.

This standard is applicable to the performance testing of the foam foam duster (hereinafter referred to as foaming agent) which is not harmful to human health by the health and epidemic prevention department set.

2 Reference standards the following standards contain provisions that, through reference in this standard, constitute provisions of this standard. When this standard was published, the editions shown were all is effective. All standards will be revised, and all parties using this standard should explore the possibility of using the latest versions of the following standards.

GB/T

5748-85 Method for determination of dust in the air of working places GB/T 10124-88 Test method for uniform immersion and full immersion in metallic materials laboratory GB

15308-94 General technical requirements for foam extinguishing agents MT 79-84

Determination of Dust Concentration and Dispersion MT 506-1996 method for measuring the performance of mine dust remover

3 Definition

This standard uses the following definition.

3.1 Foam dust remover for mining dedusting agent in coal mine Mine dust remover that is miscible with water and produces foam by mechanical methods.

4 Determination method

4.1.1 Determination principle

The torsion force is applied to the steel wire by the rotation of the worm gear pair of the interfacial tension meter, and the platinum ring that the torsion force contacts the liquid surface against the surface the tension is balanced. When the torque continues to increase and the liquid level is broken, the angle of the steel wire torsion is indicated by the cursor on the dial. This value is multiplied by One factor is the surface tension of the liquid.

4.1.2 Instrument

- a) Interfacial tension meter. range 0 ~ 180 mN/m, minimum division value 0.1 mN/m;
- b) Thermometer. 0 ~ 50 °C, scale 0.2 °C;
- c) 0.5
- g ~ 0.8
- g weight set.

4.1.3 Materials and reagents

- a) absorbent cotton gauze;
- b) Potassium dichromate (GB/T 642);
- c) sulfuric acid (GB/T 625);
- d) drinking water;
- e) Distilled water.

4.1.5 Sample preparation

The foaming agent was dissolved in domestic drinking water according to the volume percentage concentration to prepare a foaming agent solution with a practical concentration.

4.1.6 Determination steps

a) Dissolve potassium dichromate in sulfuric acid to make a saturated solution.

mL of potassium dichromate saturated solution and 90 Wash with a mixture of mL of sulfuric acid Platinum ring and glass sample cup, rinse with distilled water and then dry with absorbent cotton gauze;

b) use 0.5

g ~ 0.8

g weight calibration interface tension meter;

c) Insert the platinum ring on the boom arm;

d) Pour the sample into the glass sample cup to a depth of 20 mm ~ 25 mm, place the sample glass in the center of the sample holder. Spin-like the pin holder nut, the sample glass and the holder rise together, so that the platinum ring contacts the liquid surface, and the pointer on the arm and the red line on the reflector are heavy.

Turn, turning the handle of the turbine increases the torque of the steel wire. When the liquid surface is pulled tight by the platinum ring, the pointer always keeps coincident with the red line.

The force continues until the surface tension M is read on the scale when the film is broken.

4.1.7 Calculation

Press MT

4.7 of 506.

4.1.8 Expression of results

One sample was measured three times, and the average value was taken as the measurement result.

4.2.1 Determination principle

The infiltration of liquid into dust is accomplished by the capillary action of the dust particle gap, so that the original solid-gas interface of the dust particles is replaced by the solid-liquid interface.

of. Measuring the wetting height over a certain period of time indicates the wettability of the liquid to dust.

4.2.2 Equipment

- a) Drug balance. 0 ~.200 g, Sensitivity 0.01 g;
- b) Capillary method for measuring the wettability of dust. shown in Figure 1. Glass funnel tube inner diameter 7 mm $\pm$ 0.4 mm, total scale from the bottom Length 240 mm, scale interval 1 mm. Motor cam vibrates the support table with a vibration frequency of 1.5 Hz/s, amplitude 3 mm;
1-motor cam; 2-spring; 3-foam agent disc; 4-glass funnel; 5-valve; 6-foam agent test solution
- Figure 1 Capillary method for measuring dust wettability
- c) Timer with a division value of 1 s;
- d) Qualitative filter paper (fast), GB/T 1915;
- e) Oven. 0 ~.200
- f) thermometer. 0 ~.200 °C, division value 1 °C;
- 8) Test dust. coal mine dust test dust (coal dust);
- h) dryer.

4.2.3 Sample preparation

Use the drinking water to prepare a foaming agent at the actual concentration for the infiltration test.

4.2.4 Determination method

Press MT

6.4.1 of 506.

4.2.5 Expression of results

Take the average value of the dust infiltration height in the three glass funnel tubes as the measurement result, and the deviation between each measurement value and the average value should be less than or it is equal to 10%, otherwise it needs to be re-measured.

4.3 Determination of Corrosiveness of Foam to Metals

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10124 standard hot-rolled ore steel 24Mn2K is used to prepare metal test pieces.

Use the drinking water to prepare the foaming agent with the actual concentration as the