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

GB/T 18856.14-2002

**Test methods for quality of coal water mixture -- Part 14:
Determination for pH value of coal water mixture
(English Translation)**

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1 Scope

This Part of GB/T 18856 specifies the method overview, apparatuses, test procedures, result expression, and precision for determining the pH value of coal water mixture.

This Part is applicable to various types of coal water mixture.

2 Method Overview

The glass electrode and calomel electrode of the pH meter are immersed in the coal water mixture, creating a potential difference between the two electrodes, thereby providing the pH value of the coal water mixture.

3.1 Water

Distilled water or water of equivalent purity shall be freshly boiled and cooled to room temperature before use.

3.2 Buffer solutions with standard pH values

3.2.1

Neutral phosphate solution. pH around 7.

Weigh 3.40 g of potassium dihydrogen phosphate (GB 6853) and 3.55 g of disodium hydrogen phosphate (GB 6854); dissolve in carbon dioxide-free water; and dilute to 1000 mL. Potassium dihydrogen phosphate and disodium hydrogen phosphate shall be pre-dried at $(120 \pm 10)^{\circ}\text{C}$ for

2 h.

3.2.2

Potassium hydrogen phthalate standard solution. pH around 4.

Weigh 10.21 g of potassium hydrogen phthalate (GB 6857) dried at 110°C for 1 h; dissolve in carbon dioxide-free water; and dilute to 1000 mL.

3.2.3

Borate standard solution. pH 9 ~ 9.5.

Weigh 3.81 g of sodium tetraborate (GB 6856); dissolve in carbon dioxide-free water and dilute to 1000 mL. Prevent carbon dioxide from entering during storage.

The above three standard solutions must be prepared using pH standard substances. The pH values of each standard solution at different temperatures are shown in Table 1.

3.2.4

Standard pH value buffer solutions can also be prepared according to the instructions in the pH standard substance certificate.

4 Apparatuses

4.1

pH measuring device, capable of measuring to 0.1 unit. It shall be calibrated by standard pH value buffer solutions at the specified test temperature.

4.2

Wide-mouth plastic bottle or 50 mL beaker.

4.3

Mercury thermometer. 0°C~50°C, with graduation of 0.2°C.

5 Specimen

Water coal mixture specimen used for pH determination shall be sealed and placed at room temperature for at least 2 h before test.

6 Test Procedures

6.1

pH meter calibration

Select two standard pH value buffer solutions (close to or covering the pH of the water coal mixture being tested). Immerse the measuring part of the pH meter into one of the standard

solutions and adjust the indicating part until the displayed pH value matches that of the standard buffer solution. Then immerse the measuring part into the other standard buffer solution. If the

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