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

GB/T 6912-2008

Replacing GB/T 6912.2-1986; GB/T 6912.3-1986

**Analysis of water used in boiler and cooling system --
Determination of nitrite**

锅炉用水和冷却水分析方法 亚硝酸盐的测定

(English Translation)

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Foreword

This standard corresponds to ISO 6777. 1984 "Determination of water quality nitrite by molecular absorption spectrophotometry" (English version), and the degree of consistency of ISO 6777. 1984 is non-equivalent.

This standard is used instead of GB/T 6912.2-1986 "Methods for analysis of boiler water and cooling water Nitrate and nitrite Nitrite and nitrite "and" GB/T 6912.3-1986 "boiler water and cooling water analysis methods Nitrate and nitrite Determination of alpha-Naphthylamine Hydrochloride Spectrophotometry ".

This standard compared with GB/T 6912.2-1986 and GB/T 6912.3-1986, the main changes are as follows.

--- The contents of GB/T 6912.2-1986 and GB/T 6912.3-1986 are modified and merged;

--- alpha-Naphthylamine hydrochloride photometric method to molecular absorption spectrophotometry.

This standard is proposed by the China Petroleum and Chemical Industry Association.

This standard is under the jurisdiction of the National Chemical Standardization Technical Committee Water Treatment Agents Branch (SAC/TC63/SC5).

This standard is responsible for the drafting unit. Tianjin Chemical Research and Design Institute.

1 Scope

This standard specifies the determination of nitrite content in raw water, boiler water and cooling water.

The molecular absorption spectrophotometry in this standard is suitable for raw water, boiler water and cooling water nitrite content of 0mg/L ~ 0.25mg/L determination; UV

spectrophotometry for raw water, boiler water and cooling water nitrite content of 0mg/L ~ 25 mg/L.

2 Normative reference documents

The terms of the following documents are incorporated by reference in this standard and are the terms of this standard. Any reference to the date of the document, (Excluding corrigenda) or revisions do not apply to this standard, however, encourage the parties to reach an agreement under this standard Whether the latest version of these files can be used, and the most recent version of the referenced document, which is not dated, applies to this standard.

GB/T 602 Preparation of standard solutions for the determination of impurities in chemical reagents (GB/T 602-2002, neq ISO 6353-1. 1982) GB/T 6682 Analytical laboratory water specifications and test methods (GB/T 6682-1992, neq ISO 3696. 1987)

3.1 Principles

In the presence of pH = 1.9 and phosphoric acid, the nitrite in the sample reacts with the 4-aminobenzenesulfonamide reagent to form a diazonium salt, N- (1-naphthyl) -1, 2-ethylenediamine dihydrochloride solution (added simultaneously with 4-aminobenzenesulfonamide reagent) to form a pink dye.

The absorbance was measured at 540 nm.

3.2 Reagents and materials

The reagents used in this standard, unless otherwise specified, use only analytical reagents.

Safety Tips. The strong acid used in this standard is corrosive, the color reagent is dangerous goods, should pay attention when used. Splash on the body, with a large number of Water rinse, avoid inhalation or contact with skin.

3.2.1

water, GB/T 6682, three.

3.2.2

phosphoric acid.

3.2.3

Phosphoric acid solution. 1 + 9.

3.2.4

Nitrite (in N) Standard stock solution. 100mg/L.

Weigh (0.4922 ± 0.0002) g of sodium nitrite (dried at 105°C for at least 2 h) in about 750 mL of water.

1000mL volumetric flask and diluted with water to the mark. Store at $2^{\circ}\text{C} \sim 5^{\circ}\text{C}$ in a stoppered brown glass bottle, the solution can be stable Place for a month.

3.2.5

Nitrite (in N) Standard solution. 1.00mg/L.

Remove the 10.00 mL nitrite standard stock solution (3.2.4) into a 1000 mL volumetric flask and dilute it to the mark with water.

The day of preparation.

3.2.6 Color reagent

Weigh (40.0 ± 0.5) g 4-aminobenzenesulfonamide ($\text{NH}_2\text{C}_6\text{H}_4\text{SO}_2\text{NH}_2$) was dissolved in a mixture of 100 mL of phosphoric acid and 500 mL of water (2.00 ± 0.02) gN- (1-naphthyl) -1, 2-ethylenediamine dihydrochloride ($\text{C}_{10}\text{H}_7\text{-NH-CH}_2\text{NH}_2 \cdot 2\text{HCl}$) was added, to 1000mL volumetric flask, diluted with water to the mark, shake in $2^{\circ}\text{C} \sim 5^{\circ}\text{C}$ stored in a stopper with a brown glass bottle, the solution can be stable