

JJG

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Verification Regulation of Turbidimeters (English Translation)

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1 Scope

This regulation applies to initial verification, subsequent verification and in-use verification of desktop and portable typhoelectric turbidimeters for laboratory and field service that are displayed through Formazine turbidity unit and the display results can be converted into Formazine turbidity unit.

2 References

The following references apply to this regulation.

JJF 1001-1998 General Terms in Metrology and Their definitions

JJG 1015-2002 General Norm for Pattern Evaluation and Pattern Approval of
Measuring Instruments

ISO 7027.1999 Water quality- Determination of turbidity.

3 Terms and unit of measurement

Formazine -- Chinese translated name of Formazine;

This regulation adopts Formazine turbidity standard specified in International Standard ISO7027 and issued by International Standard Organization, and adopts the "Unit" used in this standard as turbidity measurement unit. According to different measurement modes, there are mainly following turbidity units determined based on measurement standard of Formazine standard solution.

4 Overview

Turbidimeter (hereinafter referred to as the instrument) is an instrument used to measure the degree of scattering or attenuation of light generated by insoluble particulate matters suspended in transparent liquid, and make quantitative characterization of content of these suspended particulate matters.

5.1 Instrument's zero-drift

Instrument's zero-drift shall not exceed $\pm 1.5\%$ of full scale value, within the measuring range in 30 min.

5.3 Instrument's repeatability

When measuring the same sample repeatedly, relative standard deviation of measured value shall not be greater than 2%.

5.4 Instrument's indication error

Relative indication error of instrument shall not be greater than $\pm 10\%$.

6.2 Insulation resistance

Insulation resistance between power supply terminal and metal piece of instrument shell shall not be less than 20 Mohm.

7 Measuring instrument control

Measuring instrument control includes initial verification, subsequent verification and in-use verification.

7.1 Verification conditions

7.1.1

Environmental conditions.

Environmental conditions. 15°C~30°C ;

Relative humidity. $\leq 80\%$ RH;

Power supply. (220 $\pm$ 22) V, frequency (50 $\pm$ 1) Hz.

7.3.1 Appearance inspection

Use visual inspection and hand-feeling inspection.

7.3.2 Insulation resistance

The instrument is not switched to working power at first; place the switch at on-position; connect terminals of insulation resistance meter to AC input terminal of instrument and enclosure respectively; operate in accordance with operation instructions of insulation resistance meter; read the indicating value of insulation resistance meter.

7.3.5 Instrument's indication stability

Within a common-use range or a range of which the upper limit of measuring range is not greater than 50 NTU, select polymer turbidity suspension liquid of which the nominal value is at about 80% of the measuring range; read indicating value T1 after Instrument's reading become stable; observe instrument's indicating value T1 for 30 min continuously; record instrument's indicating value T_i every 5 min. Calculate indication stability according to following Formula; take ΔT_i with maximum absolute value to show instrument's indication stability.

7.3.7 Instrument's indication error

Select Formazine standard solution (strong) from the same one (bottle); within a range of which the upper limit of measuring range is not greater than 50 NTU, take 5 measuring points uniformly; accurately dilute standard solution T_s that is used to prepare corresponding turbidity value; measure each concentration value for 3 times to obtain measured value T_m and average value T_m ;

8 Verification results handling

Instrument that is verified qualified according to this regulation is awarded verification certificate; see Annex D for the format of inner pages.

9 Verification cycle

Verification cycle of turbidimeter is 1 year.

Annex A

Preparation of Zero Turbidity Water

Use microfiltration membrane of which the pore diameter is not greater than 0.2 μm to filter distilled water (or electrodialysis water, or ion exchange water); filtration shall be repeated at least once; The filter liquor obtained is the zero turbidity water for verification.

Zero turbidity water is used for turbidimeter zero adjustment and dilution of Formazine standard solution.

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