



National Metrological Verification Procedures of the People's Republic of China

JJG 376-2007

Electrolytic Conductivity Meters

电导率仪

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Verification Regulation of Electrolytic Conductivity Meters

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Conductivity meter verification procedures

1 Scope

This regulation applies to the first verification and subsequent verification and use of inspection of electrolyte conductivity meter. Calibration of resistivity meter and salinity meter based on the electrical conductivity measurement principle and TDS measurement instrument can be carried out according to this regulation.

2 References

OIML, R68 Edition 1985 Calibration method for conductivity cell

BS EN 60746—3:2002 Expression of performance of electrochemical analyzers
Part3:Electrolytic conductivity

3 Terminology and the measuring unit

3.1 Electrolytic conductance

The ratio of current and electric potential difference when ionic charge of conductivity cell moves in the electrolyte solution

$$G = \frac{I}{U} \quad (1)$$

Where:

G—conductance, S;

I—current through the electrolyte solution, A;

U—Electric potential difference between the electrodes, V.

Resistance is the reciprocal of conductance, and its unit is Ω .

3.2 Electrolytic conductivity of the electrolyte solution

Conductivity of Electrolyte solution is defined with the following formula:

$$\kappa = \frac{j}{E} \quad (2)$$

Where:

k—Electrical conductivity, $S \cdot m^{-1}$;

j—Current density, $A \cdot m^{-2}$;

E—Electric field intensity, $V \cdot m^{-1}$;

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