ISE DATASHEET

Sodium (Glass) Ion

Na071 · ELIT Ion Selective Electrode · Cation

Na+

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PHYSICAL SPECIFICATIONS

Body Length	160 mm (excl. contact) / 170 mm (incl.)
Body Diameter	12 mm
DC Resistance (25°C)	< 250 MOhm
Min. Sample Volume	5 ml

ELECTRODE SPECIFICATIONS

Electrode Model	Na071
Ion	Sodium (Glass) (Na^+)
Ion Type	Cation
Valence	1
Membrane Type	Na-selective glass combination electrode
Molar Mass	22.99 g/mol
1000 ppm equiv.	0.0435 M

OPERATIONAL PARAMETERS

Preconditioning	1000 ppm Sodium (Glass) standard
Preconditioning Time	Min. 5 minutes
Detection Range	0.023 to 23,000 ppm (1×10^{-6} to 1 M)
Electrode Slope	56 ± 5 mV/decade
pH Range	pH 10 to 14
Temperature Range	20 to 40 °C
Response Time	< 30 seconds (90% response)
Potential Drift	< 2 mV/day in 100 ppm (8 hours)

REAGENTS & STANDARDS

Reference Electrode	Internal reference — this is a combination electrode (reference built-in).
ISAB / Buffer	4M NH_4Cl / NH_4OH buffer (pH 10) — Add 2% v/v.
Standard Prep	Dissolve 2.542 g anhydrous sodium chloride (NaCl) in 1 litre deionised water.

TYPICAL APPLICATIONS

- Drinking Water Analysis
- Pharmaceutical Analysis
- Food & Beverage
- Environmental Monitoring
- Water Quality Monitoring

SELECTIVITY COEFFICIENTS (INTERFERENCE DATA)

Interfering Ion	Selectivity Coeff.	Note
Potassium (K^+)	0.0006	Far lower than the solid-state PVC electrode — the key advantage of the glass membrane.
Hydrogen (H^+)	variable	Eliminated by maintaining pH above 10.

SC = approximate apparent increase in measured concentration caused by 1 unit of interferent. Error% = ((interferent conc × SC) / target conc) × 100.

CALIBRATION & SAMPLE PREPARATION

Calibrate with 1000, 100, 10, 1 ppm Na solutions in ISAB at pH 10. Allow electrode to condition for 15–30 minutes in 100 ppm Na solution before use. For complex matrices, use Standard Addition method.

Add 2 ml 4M NH_4Cl/NH_4OH ISAB to 100 ml sample to bring pH to 10. Maintain temperature between 20–40 °C. Allow electrode to reach thermal equilibrium before measurement.

ANALYTICAL NOTES

- The Na071 glass combination electrode offers far superior K^+ selectivity (SC 0.0006) compared to the solid-state PVC version.
- Requires high pH operation (pH 10–14) and must operate within 20–40 °C.
- Best choice for drinking water, pharmaceutical, and clinical samples where potassium may be present.
- Requires longer conditioning time than solid-state electrodes.
- Handle glass bulb with care — rinse with deionised water after use and store in 100 ppm Na solution.
- High DC resistance (< 250 MOhm) — use a high-impedance meter capable of handling glass electrode resistance.