ISE DATASHEET

Sodium Ion

ELIT 8230 · ELIT Ion Selective Electrode · Cation

Na+

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PHYSICAL SPECIFICATIONS

Body Length	130 mm (excl. contact) / 140 mm (incl.)
Body Diameter	8 mm
DC Resistance (25°C)	< 2.5 MOhm
Min. Sample Volume	5 ml

ELECTRODE SPECIFICATIONS

Electrode Model	ELIT 8230
Ion	Sodium (Na^+)
Ion Type	Cation
Valence	1
Membrane Type	Solid-state PVC polymer matrix membrane
Molar Mass	22.99 g/mol
1000 ppm equiv.	0.0435 M

OPERATIONAL PARAMETERS

Preconditioning	1000 ppm Sodium standard
Preconditioning Time	Min. 5 minutes
Detection Range	0.05 to 2,300 ppm (2×10^{-6} to 0.1 M)
Electrode Slope	54 ± 5 mV/decade
pH Range	pH 3 to 10
Temperature Range	0 to 50 °C
Response Time	< 15 seconds (90% response)
Potential Drift	< 3 mV/day in 1000 ppm (8 hours)

REAGENTS & STANDARDS

Reference Electrode	Single junction silver chloride (ELIT 001n).
ISAB / Buffer	NO BUFFER SUITABLE — use Standard Addition Method. Common ISABs (KCl, NaCl, NH_4 salts) all interfere directly with this electrode.
Standard Prep	Dissolve 2.542 g anhydrous sodium chloride (NaCl) in 1 litre deionised water.

TYPICAL APPLICATIONS

- Water Quality Monitoring
- Food & Beverage
- Environmental Monitoring
- Industrial Process Control

SELECTIVITY COEFFICIENTS (INTERFERENCE DATA)

Interfering Ion	Selectivity Coeff.	Note
Potassium (K^+)	~0.6	Major interferent — use Standard Addition to account for it.
Ammonium (NH_4^+)	~0.2	Significant — avoid ammonium-based buffers.
Magnesium (Mg^{2+})	~0.03	—
Calcium (Ca^{2+})	~0.02	—

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

CALIBRATION & SAMPLE PREPARATION

Use Standard Addition method. Calibrate with 1000, 100, 10, 1 ppm Na solutions. No ISAB is suitable — all common buffers interfere with the sodium electrode.

No ISAB should be added. Use Standard Addition method to account for matrix effects and interfering ions. Adjust pH to 3–10 if necessary.

ANALYTICAL NOTES

- No suitable ISAB exists for this electrode — Standard Addition Method must be used.
- For highest accuracy in low-concentration or complex-matrix samples, the Na071 glass sodium electrode is recommended.
- pH must be maintained in the 3–10 range.