

Thiocyanate Ion

ELIT 8229 · ELIT Ion Selective Electrode · Anion

SCN-

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PHYSICAL SPECIFICATIONS

Body Length	130 mm (excl. contact) / 140 mm (incl.)
Body Diameter	8 mm
DC Resistance (25°C)	< 0.5 MOhm
Min. Sample Volume	5 ml

ELECTRODE SPECIFICATIONS

Electrode Model	ELIT 8229
Ion	Thiocyanate (SCN ⁻)
Ion Type	Anion
Valence	1
Membrane Type	Solid-state mono-crystalline membrane
Molar Mass	58.082 g/mol
1000 ppm equiv.	0.0172 M

OPERATIONAL PARAMETERS

Preconditioning	1000 ppm Thiocyanate standard
Preconditioning Time	Min. 5 minutes
Detection Range	1 to 5,800 ppm (0.01 to 0.1 M)
Electrode Slope	54 ± 5 mV/decade
pH Range	pH 2 to 12
Temperature Range	0 to 80 °C
Response Time	< 10 seconds (90% response)
Potential Drift	< 3 mV/day in 1000 ppm (8 hours)

SELECTIVITY COEFFICIENTS (INTERFERENCE DATA)

Interfering Ion	Selectivity Coeff.	Note
Iodide (I ⁻)	variable	Strong interference — avoid.
Bromide (Br ⁻)	0.02	—
Chloride (Cl ⁻)	0.0002	—
Silver (Ag ⁺)	variable	Precipitates AgSCN on membrane.
Sulphide (S ²⁻)	variable	Strong interference.

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

REAGENTS & STANDARDS

Reference Electrode	Double junction lithium acetate (ELIT 003n). Outer filling solution: 0.1M CH ₃ COOLi.
ISAB / Buffer	5M NaNO ₃ — Add 2% v/v.
Standard Prep	Dissolve 1.673 g potassium thiocyanate (KSCN) in 1 litre deionised water.

TYPICAL APPLICATIONS

- Research
- Industrial Process Control
- Environmental Monitoring
- Water Quality Monitoring

CALIBRATION & SAMPLE PREPARATION

Calibrate with 1000, 100, 10, 1 ppm SCN solutions plus ISAB. Use standard addition method for complex matrices.

Add 10 ml ISAB to 100 ml sample. Remove silver, sulphide, and iodide before measurement if present.

ANALYTICAL NOTES

- Wide pH range (2–12) makes this electrode suitable for many sample types.
- Chloride can be tolerated up to 500× the thiocyanate concentration.
- Used in clinical analysis for saliva thiocyanate (smoking biomarker).

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