

Sulphide Ion

ELIT 8225 · ELIT Ion Selective Electrode · Anion

S2-

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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 8225
Ion	Sulphide (S ²⁻)
Ion Type	Anion
Valence	2
Membrane Type	Solid-state mono-crystalline Ag ₂ S membrane
Molar Mass	32.065 g/mol
1000 ppm equiv.	0.0312 M

OPERATIONAL PARAMETERS

Preconditioning	1000 ppm Sulphide standard
Preconditioning Time	Min. 5 minutes
Detection Range	0.003 to 3,200 ppm (1×10 ⁻⁷ to 0.1 M)
Electrode Slope	27 ± 3 mV/decade (divalent)
pH Range	pH 13 to 14
Temperature Range	0 to 80 °C
Response Time	< 30 seconds (90% response)
Potential Drift	< 5 mV/day in 100 ppm (8 hours)

SELECTIVITY COEFFICIENTS (INTERFERENCE DATA)

Interfering Ion	Selectivity Coeff.	Note
Silver (Ag ⁺)	variable	Will deposit Ag ₂ S on membrane — avoid silver in solutions.
Mercury (Hg ²⁺)	variable	Strong interference — forms HgS precipitate.

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	10M NaOH (Add 2% v/v) or SAOB (Sulphide Anti-Oxidant Buffer: 2M NaOH + 0.1M ascorbic acid). Maintains pH > 13 and prevents sulphide oxidation.
Standard Prep	Dissolve 7.491 g sodium sulphide nonahydrate (Na ₂ S·9H ₂ O) in 1 litre deionised water in an inert atmosphere. Standardise against silver nitrate.

TYPICAL APPLICATIONS

- Environmental Monitoring
- Water Quality Monitoring
- Industrial Effluent
- Research

CALIBRATION & SAMPLE PREPARATION

Prepare all standards and samples in SAOB. Work quickly to minimise oxidation. Calibrate with 100, 10, 1, 0.1 ppm S^{2-} in SAOB.

Fix samples immediately with SAOB on collection. Do not expose to air. Measure as soon as possible after collection.

ANALYTICAL NOTES

- Must be measured at pH > 13 to ensure all sulphide is in S^{2-} form (not HS^- or H_2S).
- Membrane may require polishing with fine abrasive if a black tarnish develops.
- Highly volatile — prepare standards fresh and measure quickly.

SAFETY & HAZARDS

! Hydrogen sulphide (H_2S) is toxic and has a characteristic rotten-egg odour. Work in a well-ventilated area or fume hood.

! Sulphide solutions oxidise rapidly in air — prepare fresh and keep alkaline.

! Sodium sulphide is corrosive. Wear appropriate PPE.

This document is provided for guidance only. Specifications subject to change without notice. For technical support contact sales@nico2000.net or call 020 8422 6779.