ISE DATASHEET

Bromide Ion

ELIT 8271 · ELIT Ion Selective Electrode · Anion

Br-

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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 8271
Ion	Bromide (Br^-)
Ion Type	Anion
Valence	1
Membrane Type	Solid-state crystal membrane
Molar Mass	79.904 g/mol
1000 ppm equiv.	0.0125 M

OPERATIONAL PARAMETERS

Preconditioning	1000 ppm Bromide standard
Preconditioning Time	Min. 5 minutes
Detection Range	0.4 to 8,000 ppm (5×10^{-6} to 0.1 M)
Electrode Slope	54 ± 5 mV/decade
pH Range	pH 1 to 12
Temperature Range	0 to 80 °C
Response Time	< 10 seconds (90% response)
Potential Drift	< 3 mV/day in 1000 ppm (8 hours)

REAGENTS & STANDARDS

Reference Electrode	Double junction (ELIT 003). Outer filling solution: 0.1M CH_3COOLi.
ISAB / Buffer	5M $NaNO_3$ — Add 2% v/v.
Standard Prep	Dissolve 1.489 g anhydrous potassium bromide (KBr) in 1 litre deionised water.

TYPICAL APPLICATIONS

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

SELECTIVITY COEFFICIENTS (INTERFERENCE DATA)

Interfering Ion	Selectivity Coeff.	Note
Silver (Ag^+) / Sulphide (S^{2-})	very high	All poly-crystalline membranes — unreliable in presence of Ag or S ions.
Cyanide (CN^-)	very high	Must be absent. Removable by adding 1 ml 0.1M $NiSO_4$ per 100 ml (add equally to standards).
Iodide (I^-)	very high	Must be absent or at insignificant levels.
Chloride (Cl^-)	~0.002	—
Hydroxyl (OH^-)	0.00003	—

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, 0.1 ppm Br solutions. For high ionic strength samples (> 0.01 M), add 2 ml ISAB to each 100 ml standard.

Low ionic strength: immerse in 50–100 ml sample. High ionic strength: add 2 ml ISAB to 100 ml sample. If CN or S present, add 1 ml 0.1M $NiSO_4$ to all standards and samples.

ANALYTICAL NOTES

- Cyanide and sulphide can be removed by adding 1 ml of 0.1M nickel sulphate per 100 ml (add equally to all standards).
- Wide pH operating range (1–12) makes this electrode suitable for a broad range of sample types.