ISE DATASHEET

Nitrite Ion

ELIT 8071 · ELIT Ion Selective Electrode · Anion

NO2-

>> View full ion guide: elyxir.co.uk/resources/ions/nitrite

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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 8071
Ion	Nitrite (NO_2^-)
Ion Type	Anion
Valence	1
Membrane Type	Solid-state PVC polymer matrix membrane
Molar Mass	46.006 g/mol
1000 ppm equiv.	0.022 M

OPERATIONAL PARAMETERS

Preconditioning	1000 ppm Nitrite standard
Preconditioning Time	Min. 5 minutes
Detection Range	0.5 to 500 ppm (1×10^{-5} to 0.01 M)
Electrode Slope	54 mV/decade
pH Range	pH 4.5 to 8
Temperature Range	0 to 50 °C (do not measure above ~30 °C)
Response Time	< 10 seconds (90% response)
Potential Drift	< 3 mV/day in 1000 ppm (8 hours)

REAGENTS & STANDARDS

Reference Electrode	Single junction (ELIT 001).
ISAB / Buffer	Special buffer BS-2 (for water samples): dissolve 14.32 g disodium phosphate and 15.37 g citric acid in 1000 ml water. Mix all standards and samples with ISAB in a 1:1 ratio.
Standard Prep	Dissolve 1.500 g anhydrous sodium nitrite ($NaNO_2$) in 1 litre deionised water. Note relatively short shelf-life due to oxidation — prepare fresh before each analytical session.

TYPICAL APPLICATIONS

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

SELECTIVITY COEFFICIENTS (INTERFERENCE DATA)

Interfering Ion	Selectivity Coeff.	Note
Cyanide (CN^-)	very high	Must be completely absent.
Acetate (CH_3COO^-)	0.001	—
Fluoride (F^-)	0.0008	—
Chloride (Cl^-)	0.00005	Would need to be 1000× more concentrated than nitrite to cause a 5% error.
Nitrate (NO_3^-)	0.00001	—
Sulphate (SO_4^{2-})	0.00001	—

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 200, 20, 2, 0.2 ppm NO_2 solutions. Mix all standards 1:1 with ISAB before measurement.

Mix 25 ml sample with 25 ml ISAB before analysis. Keep standards and electrode refrigerated when not in use; allow time to equilibrate to room temperature before use.

ANALYTICAL NOTES

- Nitrite is prone to oxidation — refrigerate all solutions when not in use.
- Note limited concentration range (0.5 to 500 ppm) compared to most other ELIT ISEs.
- ISAB addition (1:1) is mandatory for all standards and samples.

SAFETY & HAZARDS

! Nitrite standard solutions oxidise rapidly in air — store in refrigerator and prepare fresh daily.
! Measuring at temperatures above ~30 °C is not recommended.