Technical Specifications for the Sulphide Ion-Selective Electrode
ELIT 8225

Introduction

The Sulphide Ion-Selective Electrode has a solid-state crystal membrane. The electrode is designed for the detection of sulphide ions **(S^{-2})** in aqueous solutions and is suitable for use in in both field and laboratory applications. The Sulphide Ion is a bivalent anion.
One mole of (S^{-2}) has a mass of 32.064 grams; 1000 ppm is 0.0312M
Dissolve 7.491g sodium sulphide nonahydrate (Na2S.9H2O) in 1 litre water.

Physical Specifications

Length of body excl gold contact	130 mm
Length of body incl gold contact	140 mm
Diameter of body	8 mm
DC resistance at 25°C	< 2.5 MOhm
Minimum feasible sample volume	5 ml

Chemical / Operational Specifications

Preconditioning / Standard solution	Aprox. 1300 ppm S-- as Na_2S
(Best diluted from saturated solution and titrated with Lead Perchlorate standard)	
Preconditioning time	5 minutes
Optimal pH range	pH 13 to pH 14
Temperature range	0 to 80° C
Recommended ISAB	10M NaOH (add 2% v/v)
Recommended reference electrode	Double junction **(ELIT 003)**
Reference electrode outer filling solution	0.1M CH3COOLi
Electrode slope at 25^0 C	26 ± 3 mV/ decade
Concentration range	0.003 to 3,200 ppm (9x10-8 to 0.1 Molar)
Response time	< 10 seconds
(Defined as time to complete 90% of the change in potential after immersion in the new solution.)	
Potential drift (*in 1000 ppm*)	< 3 mV/ day (8 hours)
(Measured at constant temperature and with ISE and Reference Electrode continually immersed)	

Interference:

Mercury or Silver ions have very high interference and can only be tolerated in very low concentrations relative to the Sulphide – ideally they should be absent.
Note high and narrow pH range (13 to 14).
WARNING: 10M NaOH is a very caustic solution and should be handled with care.

For more information, see: www.nico2000.net.