

Product Information

Sigma-Aldrich 71715 Sodium ionophore I – membrane A

Selectophore®

General information

Solvent polymeric membrane for assay of sodium activity in whole blood, plasma, serum and aqueous solutions. The membranes can be mounted onto Electrode body ISE (Product No. Sigma-Aldrich 45137) or other electrodes. Information about mounting the membrane can be found in a brochure included with the electrode.

Diameter

7 mm. Other diameters on request.

Chemical resistance

Excellent in aqueous solution. Most organic solvents however will destroy the membrane.

Membrane Composition

	Percentage	Product Number
Sodium Ionophore I	1.0 wt%	Sigma-Aldrich 71732
Bis(1-butylphenyl-decane-1,10-diyl diglutarate	66.0 wt%	Sigma-Aldrich 30585
Sodium tetrakis(3,5-bis(trifluoromethyl)phenyl)borate	0.07 wt%	Sigma-Aldrich 72017
PVC, high molecular weight	33.0 wt%	Sigma-Aldrich 81392

Recommended electrode

Electrode body ISE (Sigma-Aldrich 45137)

- Internal filling solution: 0.01 M NaCl
- Conditioning: >1 h in 0.01 M NaCl
- Reference electrode: Double-junction Ag/AgCl electrode with 3 M NH₄NO₃ as bridge solution
- Calibration: recommended to use any sodium ion standard solution for ion selective electrodes

Slope

56 mV / decade (between 10⁻¹ and 10^{-3.3} mol/L Na⁺)

Detection limit

4*10⁻⁴ mol/L Na⁺ (in unbuffered solution)

Selectivity ($\log K_{NaM}^{pot}$)

M	Selectivity	Remark
K	-1.3	Separate solution method
Ca	-0.65	0.1 M solutions of the chloride salts
Mg	-1.8	

Literature

[1] W. Simon *et al. Clin. Chem.* **1983**, 29, 1508.

[2] *Selectophore® Ion Sensor Materials*; Sigma-Aldrich Co.: St. Louis, MO, 2011.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.