

Product Information

Sigma-Aldrich 63098 Magnesium ionophore III – membrane A

Selectophore®

General information

Solvent polymeric membrane with no cross-selectivity for determination of water hardness. 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

Magnesium Ionophore III
 Potassium tetrakis(4-chlorophenyl)borate
 Chloroparaffin (60% chlorine basis)
 PVC, high molecular weight

Percentage

0.99 wt%
 0.64 wt%
 65.58 wt%
 32.79 wt%

Product Number

Sigma-Aldrich 63086
 Sigma-Aldrich 60591
 Sigma-Aldrich 25720
 Sigma-Aldrich 81392

Recommended electrode

Electrode body ISE (Sigma-Aldrich 45137)

- Internal filling solution: 0.01 M MgCl₂
- Conditioning: >24 h in 0.01 M MgCl₂
- Reference electrode: Double-junction Ag/AgCl electrode with 3 M KCl as bridge solution (Sigma-Aldrich 16811)
- Calibration: e.g. with Magnesium Ion Standard Solution for ISE, 0.01 M Mg (Sigma-Aldrich 63031)

Slope

28 mV / decade (between 10⁻¹ and 10^{-6.0} mol/L Mg²⁺)

Detection limit

2*10⁻⁶ mol/L Mg²⁺ (in unbuffered solution)

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

M	Selectivity	Remark
H	1.7	Separate solution method
Li	-3.1	0.1 M solutions of the chloride salts
Na	-3.5	
K	-3.7	
Ca	0	

Literature

- [1] M. Maj-Zuraswska, M. Rouilly, W. Morf, W. Simon, *Anal. Chim. Acta.* **1989**, 218, 47.
 [2] M. Müller, M. Rouilly, B. Rusterholz, M. Maj-Zuraswska, Z. Hu, W. Simon, *Mikrochim. Acta* **1988**, 283.
 [3] *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.