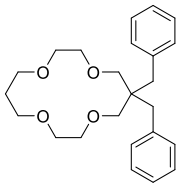
Product Information



62567 Lithium ionophore VI

(6,6-Dibenzyl-14-crown-4; 6,6-Dibenzyl-1,4,8-11-tetraoxacyclotetradecane)
Selectophore®, function tested

Electrochemical Transduction

Ion-Selective Electrodes

Application 1 and Sensor Type[1,2,3]

Neutral carrier for Li^+ in ion-selective PVC membrane electrodes with high selectivity over potassium and sodium ions.

Recommended Membrane Composition

1.00 wt%	Lithium ionophore VI (62567)
0.70 wt%	Potassium tetrakis(4-chlorophenyl)borate (60591)
70.30 wt%	2-Nitrophenyl octyl ether (73732)
28.00 wt%	Poly(vinyl chloride) high molecular weight (81392)

Recommended Cell Assembly

Reference || sample solution || liquid membrane | 1 M LiCl | AgCl, Ag

Electrode Characteristics and Function

Selectivity coefficients $\log K_{Li,M}^{Pot}$ determined by the fixed interference method (0.05 M solution for alkali metal ions and H^+, 0.5 M for alkaline earth metal ions and NH_4^+).

$\log K_{Li,H}^{Pot}$	-3.0	$\log K_{Li,NH_4}^{Pot}$	-3.0
$\log K_{Li,Na}^{Pot}$	-2.4	$\log K_{Li,Mg}^{Pot}$	-4.3
$\log K_{Li,K}^{Pot}$	-2.3	$\log K_{Li,Ca}^{Pot}$	-4.7

Slope of linear regression: 59-60 mV/dec

[1] Synthesis and Selectivity for Lithium of Lipophilic 14-Crowm-4 Derivatives Bearing Bulky Substituents or an Additional Binding Site in the Side Arm K. Kimura, H. Yano, S. Kitazawa, T. Shono, J. Chem. Soc. Perkin Trans. II, 1945 (1986).
[2] Lithium Ion Selective Electrodes Based on Crown Ethers for Serum Lithium Assay. K. Kimura, O. Oishi, T. Miura, T. Shono, Anal. Chem. 59, 2331 (1987).
[3] Voltammetric Lithium Ion-Selective Electrodes Based on Ion Transfer at the Oil/Water Interface Facilitated by Neutral Ionophores. S. Sawada, T. Osakai, M. Senda, Anal. Sci. 11, 733 (1995).