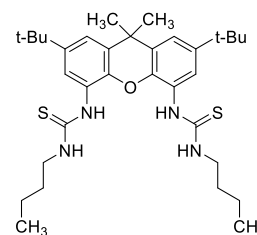


Product Information



92332 Chloride ionophore IV

(4,5-Bis-[N'-(butyl)thioureido]-2,7-di-tert-butyl-9,9-dimethylxanthene)

Selectophore®, function tested

Electrochemical Transduction

Ion-selective Electrodes

Application 1 and Sensor Type^{1,2}

Assay of Cl⁻ activity in biological samples with solvent polymeric membrane electrode based on Chloride ionophore IV.

Recommended Membrane Composition

- 1.0 wt% Chloride ionophore IV ([92332](#))
- 0.6 wt% Tridodecylmethylammonium chloride ([91661](#))
- 65.4 wt% 2-Nitrophenyl octyl ether (o-NPOE) ([73732](#))
- 33.0 wt% Poly(vinyl chloride) high molecular weight ([81392](#))

Recommended Cell Assembly

Reference || sample solution || liquid membrane | 0.01 M NaCl | AgCl, Ag

Electrode Characteristics and Function

Selectivity coefficients $\log K_{Cl,X}^{Pot}$ as obtained by the matched potential method (0.1 M of the solutions of the sodium salts, pH 7.0 with 0.1 M HEPES-NaOH).

	Cl ⁻ conc 10 ^{-5.00} to 10 ^{-4.70} M	Cl ⁻ conc 10 ^{-2.34} to 10 ^{-2.04} M
$\log K_{Cl,Salicylate}^{Pot}$	0.7	1.8
$\log K_{Cl,SCN}^{Pot}$	1.0	1.6
$\log K_{Cl,NO_3}^{Pot}$	0.2	0.7
$\log K_{Cl,I}^{Pot}$	-0.2	0.5
$\log K_{Cl,Br}^{Pot}$	0.2	0.4
$\log K_{Cl,SO_4}^{Pot}$	-1.2	n.d.
$\log K_{Cl,H_2SO_3/SO_3}^{Pot}$	-2.0	n.d.
$\log K_{Cl,OAc}^{Pot}$	-2.3	n.d.
$\log K_{Cl,HCO_3}^{Pot}$	-2.6	n.d.
$\log K_{Cl,H_2PO_4/HPO_4}^{Pot}$	<-3.5	n.d.

Slope of linear regression: -54.0 mV/dec (10⁻⁵ to 10⁻² M NaCl)

Detection limit: 6.5±3.0·10⁻⁶ M

¹ A Chloride Ion-Selective Solvent Polymeric Membrane Electrode Based on a Hydrogen Bond Forming Ionophore. K.P. Xiao, P. Bühlmann, S. Nishizawa, S. Amemiya, Y. Umezawa, Anal. Chem. 69, 1038 (1997).

² Strong Hydrogen Bond-Mediated Complexation of H₂PO₄⁻ by Neutral Bis-Thiourea Hosts. P. Bühlmann, S. Nishizawa, K. P. Xiao and Y. Umezawa, Tetrahedron 53(5), 1647 (1997).

